

**REQUIRED SUBSTANTIVE COMPONENTS  
OF THE  
CATAWBA COUNTY SCHOOL DISTRICT TECHNOLOGY PLAN**

Schools, school districts, and libraries that want to apply for Schools and Libraries support, commonly referred to as "E-rate," must first prepare a technology plan. Beginning with FY2011, technology plans are required only for Priority 2 services (Internal Connections and Basic Maintenance of Internal Connections). An approved technology plan sets out how information technology and telecommunications infrastructure will be used to achieve educational goals, specific curriculum reforms, or library service improvements.

A technology plan designed to improve education should cover the entire funding year (July 1 to June 30) but not more than three years. The plan must contain the following elements:

**Goals and realistic strategy for using telecommunications and information technology**

**A professional development strategy**

**An assessment of telecommunication services, hardware, software, and other services needed**

**Ongoing evaluation process**

**Policies**

The technology plan must be approved by a USAC-certified technology plan approver before discounted services can begin. The state is the certified technology plan approver for libraries and public schools. [www.usac.org](http://www.usac.org), August, 2011.

LEA/Charter Name: Catawba County Schools

LEA/Charter Number: 180

Superintendent Name: Glenn Barger

Superintendent Signature \_\_\_\_\_

Local Board Chair Name: Joyce Spencer

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CATAWBA COUNTY SCHOOLS  
Technology Plan

2012-2014

Approved February 27, 2012

**Catawba County Schools  
Technology Planning Committee/MTAC**

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**Job Title/Position**

Superintendent  
Chief Technology Officer  
Director of Media Services  
Director of Instructional Technology  
Assistant Superintendent Curriculum & Instruction  
Instructional Technology Facilitator  
Instructional Technology Facilitator  
School Library Media Coordinator  
School Library Media Coordinator  
AIG Coordinator  
Principal  
Director of New Teacher Support  
Parent

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**Catawba County Schools  
Technology Plan  
2012-2014**

**Vision Statement**

The incorporation of technology into the day-to-day activities of Catawba County Schools (CCS) has long been the district's vision. Each CCS school, office and department has found itself increasingly dependent on access to technology. In order to expand and maintain its technology needs, CCS has availed itself of funding from local, state and federal sources. The purpose of this plan is to set forth a cost-effective foundation of flexible technology, infrastructure and expert staffing to promote substantial gains in student achievement and effective business operations.

The CCS Technology Plan has been designed to reflect North Carolina's State Board of Education's goal of Future-Ready Schools for the 21<sup>st</sup> Century. This is accomplished by aligning the goals and objectives of this plan with the NC SBE goals and objectives, the goals and objectives of Governor Beverly Perdue's Career and College: Ready, Set, Go Race to the Top initiative, and the goals, objectives and ideals of the National Education Technology Plan. It is also aligned with the Catawba County Schools 2009-2014 Strategic Plan.

**Catawba County Schools Technology Plan**  
**Strategic Priorities**  
**2012 - 2014**

Catawba County Schools strives to be a leader in North Carolina schools in use of technology as instructional and administrative tools. Earlier inequities in access to technology have been corrected with all CCS classrooms having similar tools and materials. But visits in individual schools reveal wide variances in the frequency of technology infused in the work of administrators, teachers, and students. It is the responsibility of CCS leadership to provide the best strategic plans to ensure equity continues to be achieved using State School Technology Funds, other state funds, federal funds, and local funds.

Equal access to technology and 21st century opportunities are critical to ensuring the success of all CCS students. The integration of 21st Century tools will prepare students to be career- and college-ready. Gordon emphasizes this point in his recent article, "Return to Sender," where he summarizes several studies that convey that our schools continue to send graduates to the workforce without necessary technology-based "soft skills" demanded by employers. Core content mastery is essential but not inclusive when applying knowledge to "communicate, collaborate, analyze, create, innovate, and solve problems." North Carolina's students have 24-hour access to technology. However, opportunities to implement, integrate and benefit from technology are not supported to capacity. There is a disconnect between the classroom and the real world that leads to uninspired and resistant learners.

Research from the North Carolina Department of Public Instruction IMPACT study shows that students' exposure to various technologies seems to have improved their literacy and led to growing confidence in their abilities to use technology in a meaningful way (Overbay et al., 2011). While CCS has made a concerted effort to equitably distribute technology throughout district campuses, access to teaching and learning technologies does not necessarily lead to equity for staff and students. These technologies must be accompanied by ample professional development. Likewise, high-quality 21<sup>st</sup> century school and district leadership must also exist to fulfill the promise that all students graduate career and college ready.

The North Carolina Commission on School Technology recognizes that for all students to be future ready, they must possess equal opportunities for taking full advantage of information and technology resources and tools, and must be taught in a way that maximizes the effective use of these technologies. While many foci are necessary to achieve this goal, the Commission has identified five over-arching priorities: 1) a statewide shared-services model for platforms and infrastructure; 2) universal access to individual teaching and learning devices; 3) statewide access to digital teaching and learning resources, including digital textbooks; 4) a statewide model of 21st century professional development; 5) and 21st century leadership for all schools and districts. This CCS plan reflects the district's agreement with and commitment to these priorities.

## **Strategic Priority 1: A Statewide Shared-Services Model**

### ***Current Status and Moving Forward***

For several years, Catawba County Schools has invested in upgrading its server infrastructure. Movement has been away from an individual server environment to a blade and SAN environment. We have expanded the physical server areas to accommodate these different configurations. This has required modification of our approaches to power management, cooling and backup procedures. A generator has been installed to protect against data loss in the event of a power outage.

In 2009, the district awarded a local area network contract that provides each school 1GB of bandwidth from the school to the Central Office. CCS utilizes the North Carolina Research and Education Network (NCREN) connection, provided by the School Connectivity Initiative, to carry digital traffic from the district to the internet. These two initiatives have provided more than adequate bandwidth to support district needs.

CCS has been fortunate that funding has enabled its system engineers to receive a variety of professional development in both desktop and server management. They work with the firewall, internet filter, wireless controllers, and file and printer servers. All engineers can manage all devices in their schools due to the cross-training that has been provided. Keeping these highly trained individuals on staff, however, is a challenge as CCS cannot compete with business & industry in salary compensation.

The North Carolina Education Cloud will help Catawba County Schools as it addresses its growing technology needs. No longer will all computing, storage and management have to be handled in a CCS facility. Collaborative purchasing will result in decreased costs and de-duplication of services among the 115 LEAs and Charter Schools. As the Federal Communications Commission (FCC) and the Universal Service Administrative Company (USAC) continue to modify and update policies and procedures relating to e-Rate, the shared-services model will enable CCS to take advantage of continuous monitoring and facilitate e-Rate filings.

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**Alignment to Other Plans and Initiatives:****Strategic Priority 1: A Statewide Shared-Services Model**

Catawba County Schools will utilize and align with the following key initiatives/plans to reach for the vision and complete the strategic priorities of its plan...

**ACRE**

By participating in the shared services model offerings, our LEA/Charter will better prepare for the transition to online assessments, digital textbooks and universal access to personal teaching devices.

Update the analysis of the technology infrastructure needed to support a 21<sup>st</sup> century curriculum and assessment system and to move additional testing to appropriate technology formats. This analysis will allow the transition from a paper-based assessment system to one that takes greater advantage of technology.

**Career and College Ready, Set, Go!**

Put more technology into the hands of students and teachers to increase individualized learning options.

**Race to the Top Local and State Scopes of Work**

**Objective (A)(2) 1.1:** Incorporate the state infrastructure blueprint into technology plans.

**Objective (A)(2) 2.1:** Implement the infrastructure blueprint.

**Objective (A)(2) 3.1:** Provide and support student, teacher, administrator access to a Learner Management System, Learning Object Repository, and web collaboration tools at each school.

**Objective (A)(2) 5.1:** Provide access to effective high-quality job-embedded, data-informed professional development and support for educators with objectives aligned to the Race to the Top Initiatives.

**Catawba County Schools 2009-2014 Strategic Plan**

**Priority 4:** To provide enriched learning environments conducive to meeting the needs of every student.

**Priority 7:** To prepare students for post-secondary success.

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**1. Statewide Shared Services Model**

Suggested Goals/Targets	Year 1		Yearly Evaluation	
	July 1, 2012 – June 30, 2013	Year 2	Evaluation Method(s)	DPI Use
<b>Provide equitable and additional access to mobile devices and</b>	Provide at least one mobile lab or tablet equivalent per year for each school.	July 1, 2013 – June 30, 2014	Purchase orders Inventory records	

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	Chief Technology Officer	Chief Technology Officer	
<b>Provide equitable and additional access to digital resources</b>	Maintain and Replace classroom projectors, slates, and document cameras as needed Chief Technology Officer	Maintain and Replace classroom projectors, slates, and document cameras as needed Chief Technology Officer	Maintenance records Purchase orders Inventory records
<b>Facilitate a more strategic budgeting model utilizing blended funding and reducing isolated programmatic spending</b>	Meet regularly with CCS departments to coordinate identification of needs and funding sources Chief Technology Officer	Meet regularly with CCS departments to coordinate identification of needs and funding sources Chief Technology Officer	Innovative Budgeting Comparisons
<b>Promote/maintain innovative funding model by utilizing NCEdCloud offerings and alternatives</b>	Monitor release of NCEdCloud components and utilize when they provide a good fit for CCS needs. Chief Technology Officer	Monitor release of NCEdCloud components and utilize when they provide a good fit for CCS needs. Chief Technology Officer	NCEdCloud Opt-in Agreements
<b>Maximize E-rate in support of instructional programs</b>	Work with in-house eRate manager to make sure to confirm accurate eRate percentages to identify schools qualifying for Priority 2 services. Chief Technology Officer E-Rate Manager	Work with in-house eRate manager to make sure to confirm accurate eRate percentages to identify schools qualifying for Priority 2 services. Chief Technology Officer E-Rate Manager	e-Rate records
	Continue to apply for Priority 1 internal connections to ensure robust infrastructure for all CCS facilities Chief Technology Officer E-Rate Manager	Continue to apply for Priority 1 internal connections to ensure robust infrastructure for all CCS facilities Chief Technology Officer E-Rate Manager	e-Rate records
<b>Provide content filtering in accordance with the Children's Internet Protection Act (CIPA).</b>	Maintain and manage a content filter and firewall with up-to-date data files.	Maintain and manage a content filter and firewall with up-to-date data files.	Content Filtering Reports Purchase orders,

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Chief Technology Officer

Chief Technology Officer

contracts,  
subscriptions

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## **Strategic Priority 2: Universal Access to Personal Teaching and Learning Devices**

### *Current Status and Moving Forward*

It is a reality of 21<sup>st</sup> century life that technology surrounds all ages in virtually all environments. It is also true that technology is becoming smaller, less expensive and highly portable. Students frequently arrive at the school door with more technology devices in their backpacks than they will be exposed to once in the classroom.

Universal access to personal teaching and learning devices refers to a computing device assigned to all members of the school, including administrators, teachers, and students. While this has most often been referred to as "a laptop for every child" or a one-to-one laptop implementation, today's mobile technologies mean that a laptop is only one option as a personal learning device. While a digital learning device can be a powerful learning tool when not connected to the school or home network, the true potential is realized when network/internet connectivity is consistently available.

Much research has been commissioned and completed on the outcomes and effectiveness of one-to-one implementations of personal teaching and learning devices. Results show that:

- Students tend to be more engaged in schools that have implemented one-to-one initiatives (Bebell & Kay).
- In schools that have implemented one-to-one programs, teacher and student use of technology increases dramatically across the curriculum (Bebell & Kay).
- "Students become better researchers, have access to 'expanded' classroom, and benefit from systemic and ubiquitous use of technology, as opposed to idiosyncratic and sporadic use of technology" (Bebell & O'Dwyer).
- Students become better collaborators (Bebell & Kay).
- Teaching fundamentally shifts, in particular, teaching strategies, curriculum delivery, and classroom management (Bebell & Kay).
- Student achievement is positively affected, especially in reading and math (Shapely et al).
- "Technology immersion requires a comprehensive approach that transforms the school culture, changes the nature of teaching and learning, and expands the education boundaries of the schools and classrooms." (Shapely et al).
- Professional development is the keystone to successful implementation (Drayton et al).

Clearly, one-to-one personal teaching and learning device implementations can greatly foster the 21st century skills necessary for future-ready learners.

Another driving force that supports the critical need for Catawba County Schools to strive for one-to-one personal teaching and learning device implementations is the increased prevalence of online assessments. North Carolina is a governing member of the Smarter Balanced Assessment Consortium (SBAC). In September 2010, the SBAC was awarded a \$160 million RttT grant to develop student assessments aligned with the Common Core academic standards. The consortia members are able to work together to develop a common, next-generation assessment system

that would simply not be economically feasible to build individually, because the SBAC is a consortium of 31 states (as of December, 2010). These state-of-the-art adaptive assessments will be built upon "open source" technology, and will be delivered entirely online. The core components of these summative assessments:

- Are mandatory comprehensive accountability measures that include computer adaptive assessments and performance tasks and will be administered in the last 12 weeks of the school year in grades 3–8 and high school for English Language Arts (ELA) and mathematics;
- Are designed to provide valid, reliable, and fair measures of students' progress toward and attainment of the knowledge and skills required to be college and career ready;
- Will capitalize on the strengths of computer adaptive testing, i.e., efficient and precise measurement across the full range of achievement and quick turnaround of results;
- Will produce composite content area scores, based on the computer-adaptive items and performance tasks;
- Offer varied item types on assessments, including selected-response, constructed response, and technology-enhanced responses.

As assessment becomes technology-enabled and moves to online administration, so must teaching and learning activities. It is nonsensical to expect a student to do well on online assessments at the end of a course or grading period if that student has not had ongoing technology-integrated, online learning activities throughout the course of study. Simply stated, students should learn in the way they are assessed, and assessed in the way they have learned. Technology must be an integral element of teaching and learning from start to finish.

While CCS continues to decrease its student-to-computer ratio, adding more than 4,000 computers to its inventory over the past six years, the current level of funding will make it hard to move to universal, one-to-one access. In response, students and staff have been allowed to bring their personal computing devices to school. They are given access to the internet but are not given access to school servers. This model has increased access and has proved manageable within the current level of technology staffing.

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**Alignment to Other Plans and Initiatives:****Strategic Priority 2: Universal Access to Personal Teaching and Learning Devices**

Catawba County Schools will utilize and align with the following key initiatives/plans to reach for the vision and complete the strategic priorities of its plan...

**ACRE**

Create a comprehensive, customized professional development system to provide teachers and administrators with the skills and understandings needed to use data to inform instructional practice and make formative assessments a daily practice in the classroom.

Update the analysis of the technology infrastructure needed to supports a 21<sup>st</sup> century curriculum and assessment system and to move additional testing to appropriate technology formats. This analysis will allow the transition from a paper-based assessment system to one that takes greater advantage of technology.

**Career and College Ready, Set, Go!**

Implement diagnostic assessments using technology that allow teachers to check where each child is with reading, writing and math basics throughout the year so they have a solid foundation for continued learning.

Put more technology into the hands of students and teachers to increase individualized learning options.

Increase the use of technology for providing professional development opportunities for teachers.

**Race to the Top Local and State Scopes of Work**

**Objective (A)(2) 3.1:** Provide and support student, teacher, administrator access to Learner Management System, Learning Object Repository, and web collaboration tools.

**Objective (C)(3) 1.2:** Utilize school technology funds to enhance technology infrastructure to facilitate online real-time assessments at each school.

**Objective (D)(5) 1.1:** Provide access to effective, high-quality, job-embedded, data-informed professional development and support for educators with objectives aligned to the Race to the Top initiatives.

**Catawba County Schools 2009-2014 Strategic Plan**

**Priority 2:** To incorporate 21<sup>st</sup> century skills into the curriculum.

**Priority 4:** To provide enriched learning environments conducive to meeting the needs of every student.

**Priority 7:** To prepare students for post-secondary success.

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**Priority 2: Universal Access to Personal Teaching and Learning Devices**

Suggested Goals/Targets	Year 1	Year 2	Yearly Evaluation	
	July 1, 2012 – June 30, 2013	July 1, 2013 – June 30, 2014	Evaluation Method(s)	DPI Use

<b>Develop a comprehensive sustainable LEA plan for universal access. <i>Resources: NCDPI, NCLTI, Educator Recruitment &amp; Development, and District &amp; School Transformation</i></b>	Develop a budget for accelerating the purchase of mobile devices and include in updated Strategic Plan  District Strategic Planning Team	Develop a budget for accelerating the purchase of mobile devices and include in updated Strategic Plan  District Strategic Planning Team	Yearly budgets
<b>Communicate your plan to all stakeholders.</b>	Use CCS web to publicize plan, include in yearly parent handbook Assistant Superintendent for C&I, Chief Technology Officer	Use CCS web to publicize plan, include in yearly parent handbook Assistant Superintendent for C&I, Chief Technology Officer	End-of-Year surveys
<b>Increase overall access to personal learning devices.</b>	Provide at least one mobile lab or tablet equivalent per year for each school. Chief Technology Officer	Provide at least one mobile lab or tablet equivalent per year for each school. Chief Technology Officer	Purchase orders Inventory reports
<b>Utilize Personal Learning Devices to promote student owned learning.</b>	Allow internet access for students who bring personal computers Chief Technology Officer	Allow internet access for students who bring personal computers Chief Technology Officer	Network monitoring reports

## **Strategic Priority 3: Statewide Access to Digital Teaching and Learning Resources, Including Digital Textbooks**

### *Current Status and Moving Forward*

Providing a digital teaching or learning device is only the beginning of today's educational journey. While productivity suites, like Microsoft Office, Apple iWork, or open source OpenOffice, are key tools to use for preparing reports, creating presentations, or developing spreadsheets, providing these tools alone limits technology's power and potential. The true power of technology in the hands of CCS teachers and learners is unlocked by the adequate access and proper use of digital resources.

The digital resources of years past relied upon CD-ROMs or applications and data loaded locally on internal hard drives. Today's digital teaching and learning resources are delivered by the Internet, either via the web or as an educational application on portable media devices, interactive tablets, and smart phones. Digital resources are provided in a variety of online formats: encyclopedias, catalogs of multimedia assets, periodicals, collaborative tools, etc.

North Carolina's digital online teaching and learning resource repository, NC WiseOwl, provides free online resources available to CCS students and staff. The NC WiseOwl program ensures that all students have access to quality research tools, periodicals, and curriculum support materials regardless of the economic status of their local school districts. All of the reference sources on WiseOwl are available for student and parent use at home, as well as at school. Because the WiseOwl offerings are procured and managed at the state level for the benefit of LEAs and schools, economy of scale drives the price models lower, and saves both the state and CCS critical funds. Likewise, the University of North Carolina's LearnNC is a repository of learning resources and professional development opportunities.

Digital resources have a distinct advantage over print resources in that they have the capability to be continuously updated. Many textbooks are already outdated by the time they have been written, reviewed, published and distributed. Up-to-date information is particularly important in addressing the global literacy required in North Carolina's new essential standards. Additionally, the traditional textbook model is fixed with little or no room for differentiation to meet the individual needs of students. Appropriately selected and deployed digital resources make differentiation a reality. Simply stated, digital textbooks and resources allow both teachers and learners to "re-mix" content in ways that provide differentiation for all students and promote a cross-curricular approach to instruction and learning.

Hindering the adoption of digital resources in the past has been the cost of such resources. While there are myriad free resources available, the ones rich in content and grounded in educational research are usually available on a subscription basis. CCS purchases district-wide licenses for Discovery Education, Gaggle, ClassScape, and Destiny. Schools also pay for site licenses for school-specific programs. The NC Education Cloud may be able to use economies of scale to help reduce the costs of digital subscriptions. It will also include a Learning Object Repository (LOR) which will house a collection of content items, practice items and assessment items aggregated for a single learning objective. This LOR will allow CCS teachers to upload their

content and share it with teachers across the state, and will allow them to use content created by other educators.

CCS students have taken advantage of the opportunities offered by the North Carolina Virtual Public School (NCVPS). These online classes have expanded offerings for students, enabling them to enroll in courses not offered in their home schools. While these classes were initially offered at no cost to CCS, the district now participates in aggregate funding with other LEAs.

Catawba County instructional staff is actively involved in the move to digital resources. A committee comprised of math teachers has written a digital textbook for secondary students. Hosted on the CCS XServe, there are plans to expand this model into other grade and subject levels.

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**Alignment to Other Plans and Initiatives:**

**Strategic Priority 3: Statewide Access to Digital Teaching and Learning Resources, Including Digital Textbooks**  
**Catawba County Schools will utilize and align with the following key initiatives/plans to reach for the vision and complete the strategic priorities of its plan...**

**ACRE**

Update the analysis of the technology infrastructure needed to supports a 21<sup>st</sup> century curriculum and assessment system and to move additional testing to appropriate technology formats. This analysis will allow the transition from a paper-based assessment system to one that takes greater advantage of technology.

Develop a next generation assessment system that includes formative, benchmark and summative assessments based on the new standards.

**Career and College Ready, Set, Go!**

Increase virtual learning opportunities so every child – no matter where they live – can reach his or her potential.

Put more technology into the hands of students and teachers to increase individualized learning options.

**Race to the Top Local and State Scopes of Work**

**Objective (A)(2) 3.1:** Provide and support student, teacher, administrator access to Learner Management System, Learning Object Repository, and web collaboration tools.

**Objective (B)(3) 1.1:** Ensure teachers and staff understand the new Standard Course of Study, including the Common Core and Essential Standards and related assessments.

**Catawba County 2009-2014 Strategic Plan**

**Priority 2:** To incorporate 21<sup>st</sup> century skills into the curriculum.

**Priority 3:** To increase academic achievement.

**Priority 4:** To provide enriched learning environments conducive to meeting the needs of every student.

**Priority 7:** To prepare students for post-secondary success.

**Other LEA initiatives/plans**

**Other LEA initiatives/plans**

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**3: Statewide Access to Digital Teaching and Learning Resources, Including Digital Textbooks**

Suggested Goals/Targets	Year 1	Year 2	Yearly Evaluation	
	July 1, 2012 – June 30, 2013	July 1, 2013 – June 30, 2014	Evaluation	DPI Use

			<b>Methods(s)</b>
<b>Shift from traditional print and paper-based resources to affordable, current online resources</b>	Continue CCS-created digital textbooks hosted on XServe Assistant Superintendent C&I & Staff Technology Staff	Continue CCS-created digital textbooks hosted on XServe Assistant Superintendent C&I & Staff Technology Staff	Web indexing Usage reports
<b>Utilize procured resources such as NC WiseOwl, and other open education resources</b>	Provide links to these resources on all school web pages; use these resources as first research choices Media coordinators, technology facilitators, curriculum coaches	Provide links to these resources on all school web pages; use these resources as first research choices Media coordinators, technology facilitators, curriculum coaches	Works cited pages Lesson plans inclusion
<b>Use digital content aligned specifically to Common Core and NC Essential Standards</b>	Aggregate digital content into a CCS CC/ES portal Chief Technology Officer & staff; Assistant Superintendent C&I and staff	Aggregate digital content into a CCS CC/ES portal Chief Technology Officer & staff; Assistant Superintendent C&I and staff	Portal creation and usage reports
<b>Ensure equity to digital teaching and learning resources from school to school in your LEA.</b>	Maintain each classroom being outfitted with a projector/television, document camera and tablet/slate Chief Technology Officer	Maintain each classroom being outfitted with a projector/television, document camera and tablet/slate Chief Technology Officer	Purchase orders

## **Strategic Priority 4: A Statewide Model of Technology-Enabled Professional Development**

### *Current Status and Moving Forward*

Catawba County Schools has long taken pride in the quality of its workforce. And, there is compelling research that indicates that the quality of teachers has an impact on student learning and achievement. In a longitudinal analysis of student achievement in the Tennessee school system, Wright, Horn, and Sanders (1997) found that the more effective teachers had the most significant impact on student achievement as determined by standardized tests. Furthermore, the states that continue to have the highest student test scores in mathematics and reading are states that have made the most substantial investment in creating and retaining a highly qualified teacher workforce (Darling-Hammond, 1999). Clearly, a shift toward technology-enabled instruction using ubiquitous technology and digital resources requires retooling many CCS teachers with new approaches to instruction.

As more technology becomes part of the K12 environment, the need for knowledgeable teachers to use these tools appropriately and effectively becomes paramount. Technology professional development no longer means learning technology “skills” in isolation. A more integrated approach must be used in order for teachers to better understand the application of technology skills in the delivery of instruction.

CCS teachers have received multiple days of instruction in the North Carolina Teacher Evaluation Process, an entirely online evaluation system. An examination of the instrument reveals technology tie-ins to multiple elements:

- Teach existing core content that is revised to include skills such as critical thinking, problem solving, and information and communications technology (ICT) literacy.
- Use data to organize, plan, and set goals.
- Know appropriate use of technology.
- Help students use technology to learn content, think critically, solve problems, discern reliability, use information, communicate, innovate, and collaborate.
- Use assessment systems to inform instruction and demonstrate evidence of students’ 21st Century knowledge, skills, performance, and disposition.

As of the fall of 2011, media coordinators and technology facilitators are still evaluated on old instruments that are not reflective of 21<sup>st</sup> century professionals. DPI is piloting instruments for both licensure areas that reflect the refocusing of their job descriptions. Media coordinators in CCS schools should be considered first and foremost facilitators of information skills. While assuring the school has suitable and appropriately managed collections of resources is important, the major role of the media coordinator should be that of information and curriculum expert, to assist teachers with designing, co-teaching, and co-assessing lessons and units of study that promote literacy across multiple formats, the use of informational text, higher order and critical thinking, and research-based, problem-solving activities in classrooms across North Carolina. Similarly, instructional technology facilitators should be concerned, first and foremost, with assisting teachers in seamlessly integrating technology into curriculum-based lessons and

instructional units. Additionally, because collaboration inside and outside of the building, campus, LEA, region and state ultimately relies upon technology-enabled means, CCS media coordinators and instructional technology facilitators should be assisting with efforts to provide these critical 21st century learning experiences.

As experts in information and instructional technology, the media coordinators and instructional technology facilitators in schools must provide the first level of professional development in integrating these skills into all curricular areas. Because the individuals in these roles cannot be in every classroom on a campus at once, classroom teachers, through both planned and just-in-time professional development opportunities, must be trained to support the integration of information and technology standards into their own instruction. CCS media coordinators and instructional technology facilitators can provide this critical professional development role.

The Instructional Improvement System (IIS) provided through RttT funding, will house a comprehensive professional development program. CCS staff must help teachers select modules that best align with their individual growth plans and facilitate continued learning and growth.

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**Alignment to Other Plans and Initiatives:**

**Strategic Priority 4: A Statewide Model of Technology-Enabled Professional Development**

**Catawba County Schools will utilize and align with the following key initiatives/plans to reach for the vision and complete the strategic priorities of its plan...**

**ACRE**

Create a comprehensive, customized professional development system to provide teachers and administrators with the skills and understandings needed to use data to inform instructional practice and make formative assessments a daily practice in the classroom. Update the analysis of the technology infrastructure needed to support a 21<sup>st</sup> century curriculum and assessment system and to move additional testing to appropriate technology formats. This analysis will allow the transition from a paper-based assessment system to one that takes greater advantage of technology.

**Career and College Ready, Set, Go!**

Put more technology into the hands of students and teachers to increase individualized learning options.  
Increase the use of technology for providing professional development opportunities for teachers.  
Develop a P-20 longitudinal data system in order to provide comprehensive data and information on all students.

**Race to the Top Local and State Scopes of Work**

**Objective (A)(2) 3.1:** Provide and support student, teacher, administrator access to Learner Management System, Learning Object Repository and web collaboration tools.  
**Objective (A)(2) EVAL 1.1:** Participate in the evaluation of the RttT initiatives and use the resulting evaluation data and conclusions to improve effectiveness.  
**Objective (B)(3) 1.1:** Ensure teachers and staff understand the new Standard Course of Study, including the Common Core and Essential Standards, and related assessments.  
**Objective (D) (5) 1.1:** Provide access to effective, high-quality, job-embedded, data-informed professional development and support for educators with objectives aligned to the Race to the Top Initiatives.

**Catawba County Schools 2009-2014 Strategic Plan**

**Priority 2:** To incorporate 21<sup>st</sup> century skills into the curriculum.

**Other LEA initiatives/plans**

**Other LEA initiatives/plans**

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#### 4: A Statewide Model of Technology-Enabled Professional Development

Suggested Goals/Targets	Year 1	Year 2	Yearly Evaluation	
	July 1, 2012 – June 30, 2013	July 1, 2013 – June 30, 2014	Evaluation Method(s)	DPI Use
<b>Implement a plan for embedded technology-enabled professional development for teachers and administrators.</b>	Survey teachers to determine needs; Include as part of CCS Strategic Plan CCS Strategic Plan Team	Survey teachers to determine needs; Include as part of CCS Strategic Plan CCS Strategic Plan Team	STNA Strategic Plan	
<b>Support models that promote and further the ideals of technology-enabled and integrated professional development</b>	Train faculties in use of Big6 Research Model Director of Media Services Chief Technology Officer Media Coordinators	Train faculties in use of Big6 Research Model Director of Media Services Chief Technology Officer Media Coordinators	Workshop registrations & evaluations	
<b>Prepare media specialists and instructional technology facilitators to support digital reform.</b>	Hold ongoing professional development activities with digital resources focus; fund attendance at NCSLMA & NCTIES Director of Media Services Chief Technology Officer School Principals	Hold ongoing professional development activities with digital resources focus; fund attendance at NCSLMA & NCTIES Director of Media Services Chief Technology Officer School Principals	Workshop registrations & evaluations; Conference attendance records	
<b>Deliver Common Core and Essential Standards training to teachers using integrated technology as a model for further classroom integration.</b>	Use DPI- and CCS-created web resources as part of systemized CC/ES training Assistant Superintendent C&I and staff Chief Technology Officer & staff	Use DPI- and CCS-created web resources as part of systemized CC/ES training Assistant Superintendent C&I and staff Chief Technology Officer & staff	Workshop registrations & evaluations	
<b>Prepare staff for online assessment delivery.</b>	Conduct in-school training Director of Accountability Services & C&I staff Chief Technology Officer & staff	Conduct in-school training Director of Accountability Services & C&I staff Chief Technology Officer & staff	Staff development registrations & evaluations	

<p><b>Prepare students for online assessment delivery.</b></p>	<p>Expose students to online testing environment by administering practice tests; ensure adequate number of computers is available for testing.          Director of Accountability Services &amp; C&amp;I staff          Chief Technology Officer &amp; staff</p>	<p>Expose students to online testing environment by administering practice tests; ensure adequate number of computers is available for testing.          Director of Accountability Services &amp; C&amp;I staff          Chief Technology Officer &amp; staff</p>	<p>Student surveys to assess feelings of readiness</p>
<p><b>Provide ongoing support and professional development necessary for use of data to inform instruction.</b></p>	<p>Hold school-based sessions in how to interpret and use data to improve student learning.          Director of Accountability Services &amp; Staff</p>	<p>Hold school-based sessions in how to interpret and use data to improve student learning.          Director of Accountability Services &amp; Staff</p>	<p>RttT Evaluation Data</p>
<p><b>Provide support for teacher and administrator progress and evaluation according to MCREL standards.</b></p>	<p>Hold regular sessions in use of teacher and administrator instruments.          Director of Teacher Support          Assistant Superintendent Human Resources</p>	<p>Hold regular sessions in use of teacher and administrator instruments.          Director of Teacher Support          Assistant Superintendent Human Resources</p>	<p>PD Evaluations</p>

## **Strategic Priority 5: 21st Century Leadership for All Schools and Districts**

### ***Current Status/Moving Forward***

Over a decade into the 21st century, many educators still wonder, "What is a 21st century education?" Or, "What are 21<sup>st</sup> century skills?" Although it is clear from reports and resources published by educational groups like the CEO Forum on Education & Technology and the Partnership for 21st Century Skills, that 21st century classrooms staffed with 21st century teachers are required to produce 21st century students, much work is yet to be done to define and realize these classrooms. It is the responsibility of leadership at all levels in Catawba County Schools to define, implement, and evaluate 21st century learning.

Creating 21st century learning environments is not about investing only in technology but also investing in people and creating a culture appropriate for 21st century learning. As Michael Fullan (2001) points out, leading in a culture of change does not mean placing new individuals into unchanged environments. Fullan states, "change is a process, not an event."

Although Catawba County Schools has laid the foundation for 21st century learning by establishing and maintaining technology programs in its schools, there is still more to accomplish. Twenty-first century skills encompass much more than technology tools; they also include collaboration, communication, creativity and critical thinking. Twenty-first century learning environments require a complete shift in the way teachers approach the art of teaching and in the way students experience learning

Focused professional development is required to ensure that teachers understand what is required of 21<sup>st</sup> century educators. CCS leadership should:

- Continue to promote the ISTE NETS (International Society for Technology in Education National Educational Technology Standards) for all educators.
- Create avenues for developing the skills of administrators to facilitate teaching, learning, and working in a 21st century education environment.
- Understand and establish policies and procedures that support 21st century work and learning environments.
- Develop appropriate accountability tools and assessment measures for 21st century learning environments.
- Develop performance management processes and tools from hiring to retirement that reward and maximize the productivity and continuous improvement appropriate for 21st century work environments.
- Establish processes and management techniques (i.e., scheduling, meeting facilitation, and shared decision-making) that allow educators to collaborate and work as a team in a technology-enabled environment.
- Learn the tools for planning and implementing change in a manner that minimizes resistance and increases participation of the education workforce in the move to a 21st century learning environment.

- Determine and promote techniques and practices for transforming the interpersonal skills necessary to nurture and grow productive and balanced workplace relationships in virtual, high-technology environments.

Through process such as those listed above, CCS classrooms will reflect the 4Cs identified by the Partnership for 21<sup>st</sup> Century Skills as being essential in today's learning environment. CCS students will collaborate, communicate, think creatively and think critically.

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**Alignment to Other Plans and Initiatives:****Strategic Priority 5: 21st Century Leadership for All Schools and Districts**

**Catawba County Schools will utilize and align with the following key initiatives/plans to reach for the vision and complete the strategic priorities of its plan...**

**ACRE**

Create a comprehensive, customized professional development system to provide teachers and administrators with the skills and understandings needed to use data to inform instructional practice and make formative assessments a daily practice in the classroom.

**Career and College Ready, Set, Go!**

Increase the use of technology for providing professional development opportunities for teachers.

Develop a P-20 longitudinal data system in order to provide comprehensive data and information on all students.

Implement a Leadership Academy because schools need good leaders who know how to motivate teachers and students and how to use data to make good decisions.

**Race to the Top Local and State Scopes of Work**

**Objective (A)(2) 3.1:** Provide and support student, teacher, administrator access to Learner Management System, Learning Object Repository, and web collaboration tools.

**Objective (A)(2) EVAL 1.1:** Participate in the evaluation of the RtT initiatives and use the resulting evaluation data and conclusions to improve effectiveness.

**Objective (D)(2) 1.1:** Utilize the evaluation tool and process as a primary factor in teacher and principal development plans and decisions related to promotion, retention and removal.

**Objective (D)(2) 1.2:** Provide evaluation results to the State by submitting summary ratings.

**Objective (D)(2) 2.1:** Integrate student growth data into teacher and principal evaluations.

**Objective (D)(5) 1.1:** Provide access to effective, high-quality, job-embedded, data-informed professional development and support for educators with objectives aligned to the Race to the Top Initiatives. **Objective D(5) 1.2:** Measure, evaluate and improve professional development and support.

**Catawba County Schools 2009-2014 Strategic Plan**

**Priority 1:** To promote positive relationships between school staffs, students, parents and community members.

**Priority 2:** To incorporate 21<sup>st</sup> century skills into the curriculum.

**Priority 5:** To ensure a safe and open environment that encourages respect, acceptance and involvement both inside and outside the classroom.

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## 5: 21st Century Leadership for All Schools and Districts

Suggested Goals/Targets	Year 1		Yearly Evaluation	
	July 1, 2012 – June 30, 2013	Year 2	Evaluation Method(s)	DPI Use
<b>Create and lead a vision for 21<sup>st</sup> century education</b>	Incorporate vision into CCS Strategic Plan CCS Strategic Plan Committee	Incorporate vision into CCS Strategic Plan CCS Strategic Plan Committee	Monitoring of Plan	
<b>Create 21<sup>st</sup> century learning cultures</b>	Organize PLCs around 21 <sup>st</sup> century teaching and learning Director of Teacher Support Principals	Organize PLCs around 21 <sup>st</sup> century teaching and learning Director of Teacher Support Principals	PLC Plans and Reports	
<b>Prepare teachers and administrators to lead 21<sup>st</sup> century learning environments</b>	Conduct regular in-school workshops in how to interpret and use various type of data. Director of Accountability Services and Staff	Conduct regular in-school workshops in how to interpret and use various type of data. Director of Accountability Services and Staff	RttT Evaluation Data Workshop registrations and evaluations	
<b>Develop strategic partnerships with community and business to promote 21<sup>st</sup> Century learning.</b>	Establish a Comprehensive Business Advisory Council to advise and make recommendations. Director of Career & Technical Education	Establish a Comprehensive Business Advisory Council to advise and make recommendations. Director of Career & Technical Education	Yearly Reports	

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**Appendix A: Policies and Procedures  
Catawba County Schools Technology Plan  
Policy, Procedure, & Guidelines Implementation Chart**

<b>Policies, Procedures, &amp; Guidelines</b>	<b>LEA Policy Code or Procedure</b>	<b>LEA Adoption, Implementation or Revision Date</b>
All Policies, procedures and guidelines should be updated to include the fundamentals of 21st Century Education and Information & Technology Skills. Policies should be translated into predominant languages of students and parents. Policies, procedures and guidelines should be displayed along with the STP and other referenced LEA/Charter plans. Make sure links have navigations that are user friendly.		
<b>Policies Required</b>		
A. Materials Selection Policy including internet resources ( <a href="#">GS §115c-98(b)</a> )	3.6110	09/2010
B. Disposal of Equipment / Replacement of Obsolete Equipment ( <a href="#">GS §115c-518</a> )	9.4000	03/2010
C. Hardware and Software Procurement ( <a href="#">GS § 115c-522</a> , <a href="#">115c-522.1</a> )	3.3240	06/2010
D. Copyright and Plagiarism Policy ( <a href="#">PL §94-553</a> , <a href="#">90 Stat. 2541</a> ),	3.7330	06/2010
E. Acceptable Use Policy ( <a href="#">PL §106-554</a> ) (including existing 1:1, bring your own device)	3.6140/4.2040 /7.1310	05/2010
F. Equipment/Materials Donation Policy ( <a href="#">GS §115C-518</a> )	3.3230	06/2010
G. Data Privacy Policy ( <a href="#">20 U.S.C. § 1232g</a> ; <a href="#">34 CFR Part 99 (FERPA)</a> )	4.8000/4.8010 /7.2100	06/2010
H. Inventory Control Policy ( <a href="#">GS §115c-539</a> , <a href="#">115c-102.6A-C(5)</a> )	6.5100	01/2010
I. Access to Services Policy ( <a href="#">GS §115c-106.2</a> )	3.6140	05/2010
J. Online Assessment and Instruction Policy		
K. Advertising and Commercialism Policy ( <a href="#">GS §115c-98</a> ) (Procurement and gifts ethics)	5.2000/5.2150	09/2004
L. Internet Safety and Ethical Use including Cyberbullying and Harassment ( <a href="#">Protecting Children in the 21<sup>st</sup> Century Act</a> , <a href="#">CIPA</a> , <a href="#">FERPA</a> , <a href="#">GS 115C-407</a> )	3.6140/4.2040 /7.1310	05/2010
(Locally identified policies)		
<b>Procedures</b>		
A. Hardware and Software Deployment		
B. Equipment maintenance and repairs		
C. Outdated Resources and Equipment Replacement		
D. Disaster Recovery of Data and Hardware		
E. Administration of Online Courses		
F. Administration of Online Assessment		
(Locally identified procedures)		
<b>Guidelines</b>		
A. Policy Translation		
B. Use of Digital Media and Resources		
C. Instructional Use of Videos		
D. Development of Online Resources		
(Locally identified guidelines)		