

**The North Carolina Community College System  
Report on  
The NCCCS 2 + 2 E-Learning Initiative  
(Session Law 2006-66, Section 9.1)**

**Submitted at the Request of  
The North Carolina General Assembly**



**Dr. R. Scott Ralls, President**  
North Carolina Community College System

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### **Contact Person:**

Dr. Saundra Wall Williams, Senior Vice President and Chief Technology Officer  
Technology Solutions & Distance Learning  
North Carolina Community College System

## **North Carolina Community College System Session Law Summary**

### **NCCCS 2 + 2 E-Learning Initiative 2013-2014**

Pursuant to Section 9.3(d) of Session Law 2010-31, the University of North Carolina (UNC) and the North Carolina Community College System (NCCCS) shall report by April 15, 2010, and annually thereafter, to the Joint Legislative Education Oversight Committee, the State Board of Education, the Office of State Budget and Management, and the Fiscal Research Division of the General Assembly on the implementation of the UNC-NCCCS 2 + 2 E-Learning Initiative. The attached report is in fulfillment of this requirement.

*(The reporting dates were amended by the General Assembly of North Carolina in the 2010 Session.)*

The North Carolina Community College System (NCCCS) is dedicated to providing high-quality, easily accessible educational opportunities that encourage and support student success. In accordance with these objectives, funds provided by the 2 + 2 E-Learning Initiative have provided additional resources to create and expand online courses and programs, professional development services, and acquisition and implementation of the necessary infrastructure.

Student demand for easier access to courses and programs in the North Carolina Community College System has never been greater. In the 2012-2013 academic year, curriculum enrollments through distance learning reached 57.52% of all course enrollments according the NCCCS Data Warehouse DL100ANN Report, <http://vlc.nccommunitycolleges.edu/about/DL2013.pdf>. Online and hybrid course enrollments increase each year. NCCCS experienced a 4.63% increase in distance learning over the previous year. Distance learning enrollment represents 54.64% of the total FTE earned by North Carolina community colleges in the 2012-2013 academic year.

Student access to courses includes the traditional synchronous face to face classroom experience, online, and hybrid delivery which includes elements of both traditional and online. Attendance is on the rise in virtual classrooms which can be managed around job and family responsibilities. Many students enjoy a combination of both traditional and distance learning formats. Regardless of a student's learning preference, the 2 + 2 E-Learning Initiative provides the community college system with resources to better equip students to meet the demands of a technologically advanced environment.

## **Courses and Programs within the 2 + 2 E-Learning Initiative**

### **Background**

In 2005, the General Assembly of North Carolina created the 2 + 2 E-Learning Initiative to address the critical shortage of teachers in our state. The North Carolina Community College System (NCCCS) and the University of North Carolina General Administration (UNC-GA) were the recipients of the newly created 2 + 2 E-Learning Initiative. This collaborative project focused on the development of online course content as a means to educate additional teachers in North Carolina.

NCCCS creates online course content through the Virtual Learning Community (VLC), <http://vlc.ncccommunitycolleges.edu>, which provides quality online courses to the 58 community colleges. Online courses and degrees provide access to students who may not be able to attend college in a traditional face to face method. Access to college is difficult for many students as funds for education have decreased, gasoline prices have increased, and job and family responsibilities often prohibit students from attending college. Funds from the 2 + 2 E-Learning Initiative provide both higher educational systems with resources to meet the daily challenges facing students. In 2005, the first order of business for the two systems was to identify five pre-education programs under the North Carolina Comprehensive Articulation Agreement (CAA) which allows for students to begin their education at a community college with an associate degree and then transfer to a university to complete a bachelor's degree.

The five identified associate degree programs were completed by NCCCS in June 2009 through the efforts of VLC course development centers. All 58 community colleges may access the courses for the following online degrees: Associate in Arts/Elementary Education (*online June 2008*), Associate in Arts/Middle Grades Education and Special Education (*online June 2008*), Associate in Science/Chemistry and Chemistry Education (*online June 2009*), Associate in Science/Biology and Biology Education (*online June 2009*), and Associate in Science/Mathematics Education (*online June 2009*).

With the successful completion of the pre-education degrees in 2009, the North Carolina Community College System expanded the focus of course and program development to include majors in science, technology, engineering and mathematics (STEM) education, nursing and allied health programs, developmental math, and career and technical programs.

In 2008-2009, the State Board of Community Colleges approved the funds for a Virtual Learning Community course development center focused on STEM course development. The center developed seven (7) courses and the corresponding labs. In 2009-2010, nine (9) additional courses with labs were developed. The VLC STEM Center also developed three developmental math courses and one developmental chemistry course providing the necessary prerequisite knowledge to ensure the success of students as they entered programs of study in STEM related majors. The online Associate in Science/Engineering degree was completed in 2009-2010, with the successful completion of these courses.

In 2010-2011, the North Carolina Community College System combined state appropriated VLC funds and 2 + 2 E-Learning Initiative funds to fund one VLC course development center that

developed 11 math and science courses. Previously, two centers would have produced the same number of courses. By reducing the administrative costs of multiple centers, resources were used for additional course development. Development of these STEM courses completed six (6) additional online degrees bringing the total to 37 online degrees available in the VLC. (See Appendix B)

VLC courses must meet strict content reviews for curriculum goals and objectives, instructional design processes, and pass technical reviews for software applications and appropriate learning management system requirements. Subject matter experts, instructional designers, and technical editors from NCCCS institutions are hired by VLC development centers to work collaboratively on each course. A course can be developed by the VLC for \$5,000. All VLC courses are jointly owned by all 58 community colleges and available and accessible to all instructors in the system. The courses are housed on servers at the NCCC System Office where they may be downloaded by any college in the community college system. Each course may be customized by instructors with additional content to personalize the academic experience for students. These courses are available in both Blackboard and Moodle learning management systems.

It should also be noted that 2 + 2 funds support the development of online continuing education courses as well as curriculum courses. Continuing education courses support the State's teachers and the workforce as they seek to meet the requirements of state job certifications and to remain current in their fields.

On May 20, 2011, the State Board of Community Colleges approved the funding and establishment of three permanent Virtual Learning Community Centers that provide support in the areas of Professional Development, Technology, and Quality and Assessment. Permanent centers provide for consistency and continuity in development of strategic goals and objectives, and more efficient use of funds, personnel, and resources. Multi-year initiatives and projects are now possible. The Professional Development Center is housed at Wake Technical Community College in Raleigh, NC. The Technology Center is located at Fayetteville Technical Community College in Fayetteville, NC, and the Quality and Assessment Center is housed at Surry Community College in Dobson, NC. (For more information, <http://vlc.ncccommunitycolleges.edu/about/support.html>)

The Virtual Learning Community Centers support online learning in the community college system with a commitment to continuous improvement and quality development of courses, programs and resources for instructors and students. High quality courses and instruction go hand in hand. In 2011-2012, the VLC centers developed three exemplary courses; CIS 110 - Introduction to Computers, ENG 111 - Expository Writing, and PSY 150 - General Psychology. In the same year, the VLC developed the first in a series of four Certified Online Instructor courses to provide NCCCS instructors with pedagogically sound professional development for the online teaching and learning experience.

Many community college students require at least one developmental education course before enrolling in college level courses. According to data generated for the Federal Race to the Top Initiative, 67% of North Carolina public high school graduates entering the community college system in 2012 required at least one developmental course before entering their college program of study. For this reason, in collaboration with the Developmental Education Initiative (<http://www.successnc.org/initiatives/developmental-education-initiative>) the VLC redesigned and developed eight (8) one-credit hour developmental math course modules in 2011-2012. A

student may now complete each module in as little as four weeks. The new math modules accelerate the developmental education experience for students by focusing on only the specific skills and knowledge a student lacks rather than requiring each student to take a full semester course covering information a student has already mastered which wastes valuable time and money. The ability to individualize a student's educational experience allows a student to adequately prepare for a desired program of study in less time and with less tuition/financial aid disbursements. Modular redesign of online developmental reading and English courses were completed in fiscal year 2013-2014 and will be a future project for the VLC.

In addition to developmental education courses, some students require an educational experience that begins with the Basic Skills Adult High School Education Program. In 2012-2013, the VLC developed three online Adult High School courses to provide students in this program with access to a path for higher education. AHS Algebra I, AHS Biology, and AHS English I are now available to NCCCS instructors and students. For the first time, students in Basic Skills Adult High School can now access course materials online.

In the spring of 2014, the UNC System and the NC Community College System collaborated to adopt new transfer credit standards and courses. In order to support this new articulation agreement, the VLC is developing 7 new online curriculum courses and editing 11 previously developed courses. These courses are being enhanced with interactive learning objects, videos, and engaging academic support resources to provide the desired quality and excellence in education. In addition, the VLC is developing a College Student Success course to support student learning.

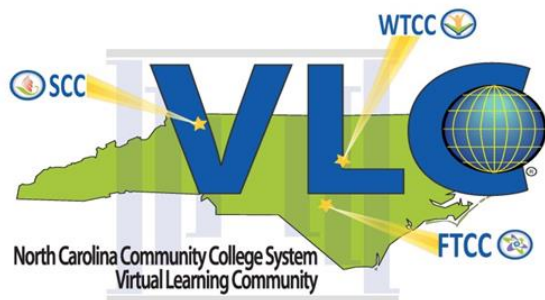
The library of VLC courses has now grown to 311 curriculum, 52 continuing education, three (3) basic skills adult high school courses and three (3) online seminars developed for the Small Business Center Network to provide information on how to start a new business, write a business plan, and then how to effectively market that business. In 2013-2014, the VLC developed three online industrial code certification courses in collaboration with the North Carolina Department of Insurance. These courses will be piloted with students in the fall semester 2014. The VLC developed and edited 20 additional courses to support the newly revised NCCCS-UNC Comprehensive Articulation Agreement approved in January 2014 (<http://www.successnc.org/initiatives/comprehensive-articulation-agreement-revision-reverse-transfer-credit-0>).

As with all courses developed by the VLC, the courses are the shared property of the NC Community College System and they are accessible to all faculty and staff within the 58 colleges. Each course may be customized by the college instructor to provide an educational experience that reflects the style of the instructor and the needs of the student population at each local college. In addition to the 311 individual curriculum courses, the VLC development plan has resulted in 37 associate degree programs completely online to provide educational flexibility for community colleges and students. (*See Appendix B*) The community college system efficiently provides resources to all colleges through the Virtual Learning Community.

## **2013-2014 2 + 2 E-Learning Initiative Projects: Collaborative Education Projects, Tools, and Resources**

The education tools and resources provided through 2 + 2 E-Learning Initiative funds support collaborative system-wide as well as state-wide academic courses and programs. It is a policy of the North Carolina Community College System Office that these funds will be used for the benefit of all community colleges without regard to size or enrollment. The emphasis on collaborative projects allows the System to provide expanded educational and technology resources that few individual colleges could afford. Collaboration also provides administrative service efficiencies and opportunities for cost savings for the System as well as the state.

In 2013-2014, 2 + 2 funds provided for the following collaborative projects: NC Learning Object Repository (NCLOR), Virtual Learning Community (VLC) development of 20 online courses and XX interactive learning activities; and completion of Phase I of the Integrated Teaching and Learning Gateway beta launch of NC3ATLAS.



### **Virtual Learning Community (VLC) Course Development/Editing Project** <http://vlc.communitycolleges.edu>

The Virtual Learning Community celebrates 15 years of collaborative course development in 2013-2014. A national model for online course development, the VLC develops, edits and produces content for curriculum and continuing education courses, provides professional development for NCCCS faculty and staff, and researches, vets, and trains college faculty on the latest technologies and applications.

Funds from the 2 + 2 E-Learning Initiative are supporting the development and editing of 23 curriculum courses continuing education courses. (*See Attachment A, page 19, 20*). Along with the course development, subject matter experts, instructional designers and technical editors work collaboratively to develop interactive learning objects that enhance the modules of each course and provide additional teaching and learning support for students. Courses are built within a structured template that provides a consistent high quality product that is robust and adheres to the federal standards of Section 508 of the Americans with Disabilities Act (ADA) requiring that all online courses be accessible for disabled students. Each course is available in both Blackboard and Moodle learning management systems which are supported by the NCCCS.

All courses in the VLC library are available for download to college servers where they may be customized by instructors and colleges.

Due to permanent reductions in funding for the VLC over the past five years, editing centers have been eliminated. This has delayed the refresh cycle of courses and caused many of the 311 courses to be out of date due to changes through the Curriculum Review Committee, Transfer and Articulation Committee, Course Improvement Projects, and other content change processes. Many courses need to be updated by the VLC to keep pace with these changes, as well as content changes mandated by the state for licensed programs such as the Nurse Aid courses for Continuing Education (NUR 3240 and 3241). The Department of Health and Human Services (DHHS) is allowing NCCCS colleges to use the current online version of NUR 3240 until July 1, 2014. After July 1, all colleges delivering NUR 3240 online must use the new curriculum to remain in compliance. The BIO 168 and 169 courses are used in the nursing pre-major curriculum. Other courses chosen for editing in 2013-2014 include general education core courses and mathematics courses that are used across several different curriculum standards, including the Associate in Arts and Associate in Science, the two highest FTE enrollments of all degree programs.

In addition to the structured course development process, the VLC utilizes the collaboration of the community colleges' greatest resource; its people. Faculty and staff from 28 community colleges are combining their knowledge and talents to produce courses, resources, and tools through the VLC Quality and Assessment Center at Surry Community College. Additional college personnel collaborate with the two other VLC centers. The VLC Technology Center is housed at Fayetteville Technical Community College which collaborates with colleagues from around the community college system to test technologies, vet new products, and to create interactive and 3D learning objects. The VLC Professional Development Center at Wake Technical Community College provides training materials and workshops, tutorials and webinars to faculty and staff throughout the system. All three centers depend on the skills and abilities of faculty throughout the system who participate on VLC projects each year.

By June 30, 2014, the VLC will have completed the development/editing of 23 curriculum and continuation education online courses; created more than 125 interactive learning objects for these courses which will be contributed to the NCLOR; published a comprehensive report of the 2012-2013 e-Text Pilot Project analyzing the use of e-Text books and readers by eight community colleges in the System; launched the NC3ATLAS, a website which connects and organizes disparate teaching and learning environments into a central portal which is the culmination of two years of research and development; presented 90 professional development workshops delivered face to face as well as through webinars online; tested and vetted over 40 technologies and produced whitepapers and guides for faculty use; formed a system-wide committee to study, present, and publish information on State Authorization, a mandated compliance regulation by the U.S. Department of Education; formed a system-wide committee to study, present, and publish information on accessibility to ensure that NC community colleges meet the compliance regulations of Section 508 of the Americans with Disabilities Act; and created a Web Accessibility Committee to test and advise colleges of compliance issues involving college websites and other online educational portals and resources. The results of these projects by the VLC benefit all colleges in the System, provide centralized cost-saving project management and administrative services, time and financial efficiencies, and a trained and informed workforce within the community colleges who can advise, respond, and assist their



colleagues in the critical areas of teaching and learning as well as appropriately addressing state and federal compliance regulations.



**K-20 North Carolina Learning Object Repository (NCLOR), [www.explorethelor.org](http://www.explorethelor.org)**

Virtual Learning Community courses combine quality online course content with engaging interactive learning objects, videos and self-assessments housed in the North Carolina Learning Object Repository (NCLOR). The NCLOR contains over 47,000 learning objects, professional development tutorials, and 287 free e-textbooks. (*See Appendix D*) Open educational resources and licensed collections of content in the NCLOR assist faculty by providing tutorials, research materials, and exercises for students. Professional development support for educators is available through tutorials and webinars accessible in the NCLOR as well as resources mapped to community college courses for focused digital searching capabilities.

In 2012-2013, the Department of Public Instruction (DPI) and the NCCCS collaborated on an agreement to share the platform and resources of the NCLOR. NCCCS and the NC Education Cloud representing the Department of Public Instruction (DPI) and all North Carolina Local Educational Agencies (LEA) collaborated on a perpetual license agreement that expanded the NCLOR to a K-14 repository. This collaborative effort allowed both educational systems to experience cost savings in licensing and maintenance agreements, administrative and support costs and services, and to benefit from the shared digital content available to faculty, staff, and students throughout North Carolina.

With the inclusion of content from DPI, digital resources in the NCLOR tripled over the previous year. The majority of the digital content is accessible to both systems as well as to guests who visit the NCLOR. However, some NCCCS licensed collections are only accessible to the faculty and staff of the 58 community colleges where resources are mapped to age and course-specific programs. Likewise, DPI licensed collections will be restricted to permissions within that statewide system. The Center for Urban Affairs and Community Services (CUACS) at NC State University created the metadata and content for the DPI demo collection in the NCLOR. As a part of this collaboration, math and English language arts Common Core Standards have been added to the NCLOR.

Internet access to the NCLOR is possible through computers and mobile devices. NCCCS and DPI faculty and staff may request a login to the NCLOR. A login provides the ability to contribute learning objects to the repository and to search all open content as well as licensed system collections. NCCCS faculty can also search the NCLOR content by accessing it through their college's learning management system which provides a single sign-on authentication for the user. To login to the NCLOR as a guest or member, go to [www.explorethelor.org](http://www.explorethelor.org).

There are multiple ways to search for content in the NCLOR. Visitors may search by discipline, collections, learning resource types, and academic levels. Learning Objects (LO) are also searchable by the resource series and/or by selecting a specific VLC course. LOs are mapped to specific courses and listed on one page for easy access by instructors. NCCCS instructors may browse the Combined Course Library in the NCLOR as they search for course information.

In addition to learning objects that support courses, there are over 1400 professional development webinars and tutorials in the NCLOR. These resources are appropriate for personal viewing as well as group training sessions. Many of these resources were created by the VLC Professional Development Center. The number of professional development webinars and tutorials expands each month as teachers and instructors share new concepts and tools in teaching and learning.

The NCLOR administrative staff are in discussion to provide a platform to host a collection of open educational resources for the NC Department of Cultural Resources. In December 2013, the NCLOR served as the delivery platform for the open content created from the Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grant Program sponsored by the U.S. Department of Labor. Faculty and staff at Forsyth Technical Community College are the designated leads in the grant and will be developing additional resources to be contributed to the repository.

In 2013-2014, the community college system added many newly created learning objects and assets as well as full collections of resources. The following new collections were added and/or updated: NROC English Language Arts collection - 3 units and 20 lessons; Khan Academy Resource Series - 2,500 new video tutorials; NC DPI has added over 9,600 resources; Wisconsin-Online career and technical education set of resources – 46 new learning objects; Dallas Learning Solutions resources for Sociology, General Business, U.S. History, and English Composition – 126 new learning objects; The Art of Problem Solving Series – 186 resources; Intelcom Online Resources Network – 17 videos; Sumanas Inc. interactive Biological Sciences collection – 105 resources; Periodic Table of Videos Series Updated – 53 new videos of molecules; and the NC Virtual Public School Math and American History – 40+ resources.

Utilization of the NCLOR continues to increase. There were 11,862 unique users who visited the NCLOR from July 1 – December 31, 2013. This statistic is up by 16.31% over the same time in the previous year. The 11,862 users visited the site a total of 21,748 times viewing 249,950 pages of content in the NCLOR. The addition of NC DPI has greatly increased the resources and overall use of the NCLOR. The total number of resources in the NCLOR has increased from 31,354 to 47,140 from the previous year during this same time period.



## **NC3ATLAS Beta Website Launch – Implementation of Phase I**

<http://test-itlg.dcs.mcnc.org/>

The Integrated Teaching and Learning Gateway (ITLG) is a three-phased multi-year project with the goal of providing centralized access to online resources, expansion of the use of these resources, and the identification of duplicative services which will provide economic efficiencies to teaching and learning in our System. The Integrated Teaching and Learning Gateway was identified as one of the Implementation Priorities of the 2012 System Office Priorities Plan. When completed, the goal will be to unite all electronic resource systems and websites providing easy access to teaching, learning, and professional development resources for NCCCS faculty and students. Currently, these websites and resources reside in numerous unrelated environments. These systems are difficult to find and many require unique logins. Without a consistent content platform, marketing, and communication strategy, needed information is unavailable to faculty and students.

The original development plan spread the costs over multiple funding years. Phase I of the project which has now been completed, charged the leadership team with defining the resources and content to be linked; evaluating and securing a hosting vendor; analyzing and cataloging the current content; linking all content to a single hosting solution; evaluating and securing the software solution to develop the gateway; hiring a part-time project coordinator; selecting project team members for all three phases; evaluating the ability to link all of the current systems and resources; and developing a common branding proposal.

The ITLG Steering Committee includes a representative from the following areas: executive sponsor, learning technology systems, continuing education, eLearning, NCCCS project management office, library services, NCLOR, academic program services, computer information systems (CIS) training, documentation, basic skills, college tech. prep, college CIO, external project management, and the Virtual Learning Community. The committee hired an external project manager to coordinate all activities and design the NC3ATLAS website.

The beta website launch of NC3ATLAS is the product of two years of study, research, and development. To view the beta site of NC3ATLAS, see <http://test-itlg.dcs.mcnc.org/>. The initial benefits to be achieved by faculty are awareness of one central location to find teaching and learning resources; discovery of the abundance of existing tools and resources available to educators despite their location and/or campus assignment; and the ability for decision makers to gain understanding in which to make informed decisions regarding the development and strategy of leveraging existing systems to meet common goals within the System.

Going forward, the ITLG Steering Committee and NCCCS Executive Administrators will review the lessons learned in Phase I, evaluate the impact of NC3ATLAS on faculty and students, and develop a financial plan and business requirements in order to reach a decision point about advancing to Phase II of this project. Phases II and III will define the technology requirements,

metadata schema for all resources, implement the website to full production, and provide marketing and training strategies.

While funds from the 2 + 2 E-Learning Initiative were not utilized for NC3ATLAS in 2013-2014 to beta test the website, the work of the ITLG remains on the 2 + 2 project list as the decision point for moving into Phase II has not yet been determined. Reports of the 2013-2014 project team may be found on the SuccessNC website: <http://www.successnc.org/initiatives/integrated-teaching-learning-gateway>.

## **Collaborative Resources**

The North Carolina Learning Object Repository (NCLOR) fosters collaboration across the community college system and all levels of education in North Carolina as educators contribute and share digital content in the form of videos, learning objects, lectures, assignments, self-assessments, professional development webinars and tutorials, and other teaching and learning assets. The NCLOR is celebrating its first five years of service to North Carolina educators. Collaboration occurs on the single campus as well as multi-campus levels. With the infusion of federal Race to the Top funds, the Department of Public Instruction joined NCCCS as a full partner in the NCLOR which allowed all public schools to participate in this digital warehouse as well. Collaboration by North Carolina educators allows digital content to be created, shared, and contributed to one repository which benefits the faculty, staff and students of all North Carolina K-12 public schools and all 58 community colleges. Other contributors include the Duke University School of Nursing, the North Carolina School of Science and Math, the North Carolina Alliance of Surgical Technology Educators, the NCCCS Small Business Center Network, NC BioNetwork, and North Carolina State University. By sharing the financial and administrative tasks of the NCLOR, DPI and NCCCS educational systems have worked collaboratively to provide licensing, training, maintenance, and support for one large repository instead of many smaller repositories which could share digital resources within their one educational entity. The NCLOR has been structured so that one perpetual license covers the K-12 and community college partners. In addition, the partners benefit from the efficiencies of discounted annual maintenance and support fees, a shared Project Manager from ITS, over 40,000 learning objects, and combined training events. Without this collaboration, each entity would be responsible for all costs of the license, maintenance and support, and training.

A further example of academic collaboration and efficiency is the Virtual Computing Environment (VCE) between NCCCS and NC State University which uses blade technology in a cloud computing environment to provide software to students and college PC labs. The cloud computing environment, maintenance and support, and administrator and instructor training is provided by NC State University. Hardware purchases and planning support are shared responsibilities of NCCCS and NC State University. Participating community colleges are responsible for college administration managers, instructors, and software licensing. Without this efficient sharing of hardware, software, and people, each system would be forced to maintain duplicative cloud computing platforms at a higher cost to the State or would not have the advantage of a private cloud at all.

Undoubtedly, the Virtual Learning Community (VLC) is an example of collaboration at its finest in the community college system. All content and resources developed and purchased are jointly

owned and shared by the 58 community colleges. Faculty and staff collaborate on course development and editing projects, creation of interactive learning objects and all other VLC generated programs. The efficiencies of the VLC are best explained by the concept that a VLC online course can be created for \$5,000 for the entire System of 58 colleges, as opposed to 58 colleges producing the same course for \$5,000 each which would cost the State's taxpayers \$290,000. This same concept also applies to the creation of interactive learning objects, videos, and professional development materials.

The three regional VLC Centers provide all NCCCS colleges with information and resources in the areas of quality and assessment, technology, and professional development. The VLC Quality and Assessment Center has coordinated the Integrated Teaching and Learning Gateway and the e-Text Pilot Project. The Integrated Teaching and Learning Gateway, NC3ATLAS, provides a collaborative forum to share resource platforms and tools used by colleges throughout the system. The project steering committee is made up of representatives from the System Office, colleges, and external members of the education community. With the implementation of NC3ATLAS, the NCCCS will have a central access point for all teaching and learning resources and tools which will provide easy access and better utilization of system assets.

The VLC Technology Center vets new technologies and tools, produces three-D learning objects, videos, and other interactive learning objects to share with instructors and students throughout the system. The learning objects are housed in the NCLOR for easy access by NCCCS faculty members. Technology training and white papers are also provided to the colleges. The third VLC center, the Professional Development Center provides webinars, tutorials and face to face training workshops for faculty, staff, and administrators. Adequate training is often left off the list when new technologies and learning systems are acquired. By having a center dedicated to training faculty and staff at the colleges, NCCCS has provided a cost effective way for schools to stay current and ahead in this ever-changing world of online teaching and learning. As the training tutorials and webinars are produced, they are housed in the NCLOR where they are accessible to all faculty and staff in the System.

A further collaboration has not been limited to colleges and universities. Since 2012, NCCCS has collaborated with the Career and College Promise program participants (<http://www.successnc.org/initiatives/career-college-promise-0>). Students enrolled in community college courses through the Career and College Promise program are using NCLOR interactive learning activities and assets embedded in their online courses. In 2013, the Department of Public Instruction joined NCCCS as a licensed partner in the NCLOR. NCCCS and DPI share and contribute assets to the NCLOR for the benefit of all of their faculty and students. Both systems share in the administrative costs and services as well as training events and other professional development workshops.

In 2014, the VLC is collaborating with the NC Department of Insurance to develop online courses to prepare students to take building inspection, fire prevention inspection, and mechanical inspection certification exams. The VLC is working collaboratively with the Code Qualifications Board of the NC Department of Insurance. When the courses are completed in June 2014, they will be piloted by community college faculty and students during the fall 2014 and spring 2015 semesters.

The School of Science and Math has contributed over 600 items to the NCLOR. These resource series includes items in the subjects of algebra, calculus, chemistry, history, physics, pre-

calculus, statistics, music theory and musical performance videos which instruct students how to play instruments. The School of Science and Math continues to contribute additional assets that benefit all K-20 users.

Representatives of the North Carolina Department of Cultural Resources are in discussions with the NCLOR partners to create and contribute a collection of open educational resources to the repository. This collection would be available for access by all educators in North Carolina. The NCLOR is the host of the open content created for the Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grant Program sponsored by the U.S. Department of Labor. Forsyth Technical Community College is the lead institution on this grant. In December 2013, the NCLOR served as the delivery platform for open information created for this grant. As additional resources are developed for this program, they will be contributed and shared through the NCLOR.

## **Quantitative Data**

The educational goals of students attending North Carolina community colleges include both associate and baccalaureate degree objectives. Many students in the community college system enroll in degree programs with the intent of transferring to a four-year institution. Funds from the 2 + 2 E-Learning Initiative have provided the courses, online degrees and resources to assist in educating these students. The NCCCS Data Warehouse tracks enrollment growth within the community college system. However, the Department of Public Instruction (DPI), NCCCS, UNC-GA, and the private colleges and universities do not share a uniform tracking platform that will follow a student throughout his/her educational career. For this reason, NCCCS can provide information limited to the number of students who graduate from the community college system with associate degrees in teaching, nursing, and other critically needed careers in our state, but cannot track the transfers to universities to show completion of bachelor's degrees. Many student career choices require four-year degrees from a college or university. Often students who come to the community college system to begin their higher education careers transfer before they attain an associate's degree. These students are not counted as completers even though they have completed necessary coursework to transfer to a four-year institution. A Data Initiative is presently underway between NCCCS and SAS which will provide more in depth data collection to provide this missing information (<http://www.successnc.org/initiatives/data-initiative>). Additionally, the P-20W statewide longitudinal data system for North Carolina will help to achieve this goal (<http://www.dpi.state.nc.us/data/ncp-20w/>).

## **Qualitative Data**

The primary role in training and retraining the workforce in our state is the North Carolina Community College System. This role has not been limited by the economic conditions of our state. In the recent recession, citizens in our state looked to the community college system for training and hope for equipping them with new job skills and careers. With the help of proactive programs like the 2 + 2 E-Learning Initiative, the System was able to deliver distance learning tools, resources, and courses into the hands and minds of the instructors and students who needed them. The economic recession brought a sea change in direction to higher education and the

workforce. Greater use of technology and the relocation of manufacturing and industry to other states and countries greatly impacted the job market in North Carolina and our nation. Many students are impacted by the economic barriers of increased fuel costs, and providing childcare and other accommodations in order to attend college. These barriers have contributed to a refocus in how teaching and learning is delivered to students. Higher Education can no longer be limited to a bricks and mortar campus with an instructor standing at the front of the classroom at a specific time each week. Online and hybrid course delivery takes the classroom to the student and provides flexibility to work with the student towards his/her educational goals while maintaining family and job responsibilities.

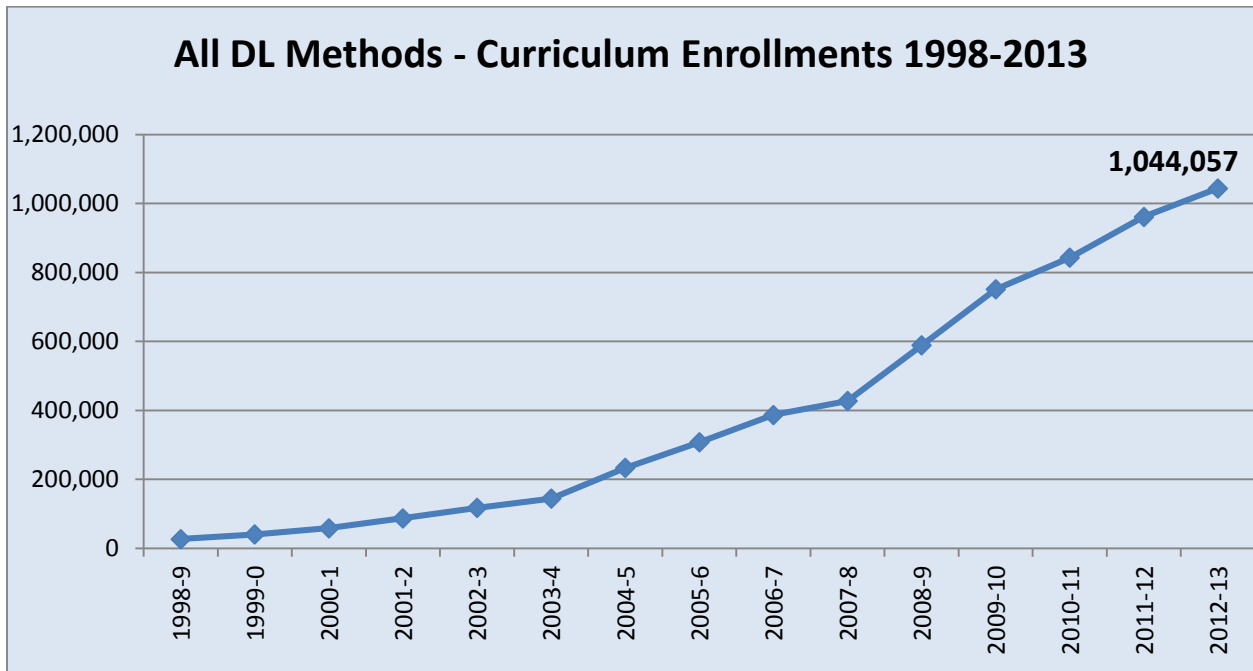
Our System has proven itself to be both flexible and innovative in the face of these challenges. Distance learning courses had already been developed when the recession hit and more courses are created each year through the Virtual Learning Community and on individual community college campuses. System-wide tools and resources are in place to respond to the growing demand for online course enhancements. The following resources and tools support NCCCS online learning: the NCLOR which houses over 47,000 learning objects, videos, tutorials, assessments, and free e-textbooks mapped to the courses; Late Nite Labs which provides online labs in biology, chemistry, physics, and microbiology; V-Scope Explorer: Basic Biology Edition and the Anatomy and Physiology Edition providing online microscopy slides and videos; Stat!Ref which includes a comprehensive database of e-text, journals and articles for nursing, dental, emergency medical services and other allied health programs, Animated Dissection of Anatomy for Medicine (A.D.A.M. Interactive Anatomy Online) which provides online medical textbooks, articles, videos and interactive assessments for allied health, nursing, and dental programs; online library resource information through CHOICE Reviews Online; and greater efficiencies for delivery such as the Virtual Computing Environment which utilizes cloud computing allowing our System to meet the needs of our instructors and students. (*See Appendix A*) The emphasis on technology for course delivery and in the job market is preparing our students to step into jobs and careers with the required knowledge and confidence to succeed in the workplace.

In 2014, businesses use technology to deliver the majority of their communications due to its cost and time efficiencies and the ability to reach the global marketplace with almost effortless ease. It is no wonder that distance learning enrollments continue to grow rapidly in the community college system. In 1998-1999, when NCCCS was just beginning to use online education, there were only 26,695 enrollments in courses. By 2011-2012, the enrollment numbers increased to 961,147, and for the first time out paced the traditional enrollments. Distance learning enrollments were 52.89% of the total student course enrollments of the System. In 2012-2013, distance learning enrollments rose to 57.52%, surpassing the one million (1,044,057) course enrollments milestone, which accounts for 54.64% of the total FTE of the System. (NCCCS Data Warehouse DL100ANN Report <http://vlc.nccommunitycolleges.edu/about/DL2013.pdf>) This trend shows no evidence of stopping as students blend their higher education goals with their job and family responsibilities.

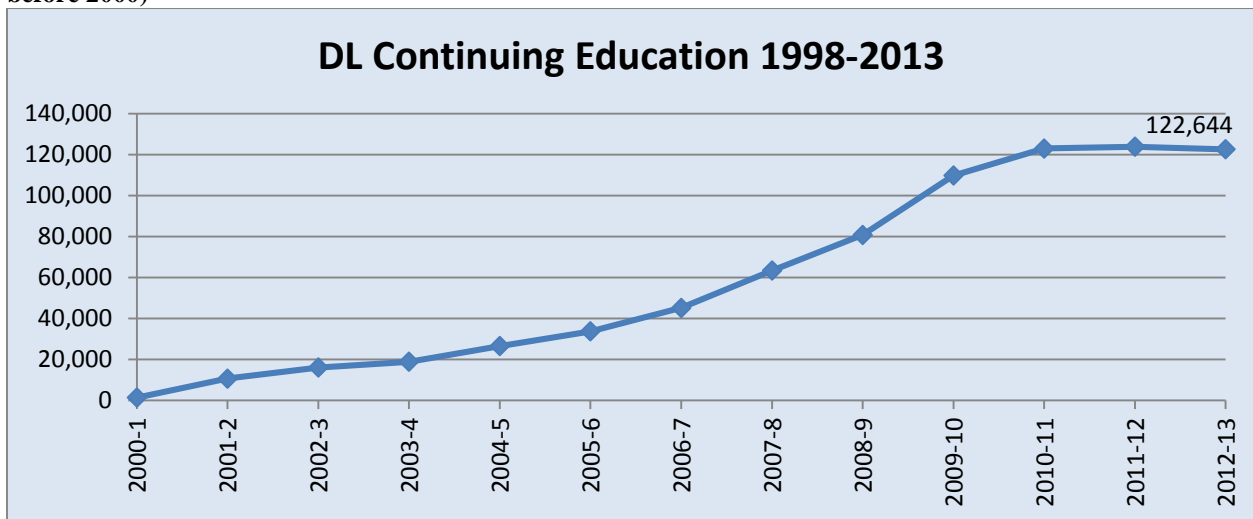
Many students are drawn to the North Carolina Community College System for technical and business credentials, diplomas, and degree programs for the quality program- specific degrees, affordable educational opportunities, and the wide range of programs and accessibility to colleges. The 2 + 2 E-Learning Initiative has provided the necessary funds to respond to changes in the workplace as the career shifts have moved from the need for more teachers to other areas

of STEM (Science, Technology, Engineering and Mathematics) careers, allied health, and nursing.

**Figure 1: DL Curriculum Duplicated Enrollment 1998-2013**



**Figure 2: DL Continuing Education Duplicated Enrollment 2000-2012 (no distance enrollments recorded before 2000)**



The expenditures from the 2 + 2 E-Learning Initiative have provided the necessary funds to support distance learning courses, resources and tools throughout the community college system. This support has provided for infrastructure, training, professional development, and system-wide cost savings as our System was able to provide tools and resources that individual colleges were unable to purchase/license. This initiative allows the same consistency and access to



distance learning programs by instructors and students regardless of their location or college enrollment in our state. (See Appendix A)

## Expenditures for Fiscal Year 2013-2014

**Figure 3: 2+2 Expenditures for Fiscal Year 2013-2014**

<b>2 + 2 E-Learning Initiative</b>	<b>2013-2014 Budget</b> <b>\$653,000.00</b>
<b>TEACHER EDUCATION RESOURCES</b>	
Late Nite Labs Biology, Chemistry, Physics, Microbiology	10,500.00
V-Scope Explorer: Basic Biology Edition	58,000.00
V-Scope Explorer: Anatomy & Physiology	12,500.00
Monterey Institute/NROC Learning Objects	25,000.00
Intelecom Repository Collections	30,600.00
STAT!Ref Allied Health, Nursing and Dental Database	25,325.30
A.D.A.M. Interactive Anatomy Online	17,600.00
NCLOR Maintenance Fees, Training	120,000.00
CHOICE – American Library Assn. Subscription	600.00
<b>Category Expenditures</b>	<b>\$300,125.30</b>
<b>INFRASTRUCTURE</b>	
NCLOR Hosting and Digital Certificate	42,540.00
NCLOR ITS/Project Manager	39,650.00
<b>Category Expenditures</b>	<b>\$82,190.00</b>
<b>VIRTUAL LEARNING COMMUNITY (VLC) PROJECTS</b>	
Teaching and Learning Gateway/NC3ATLAS	0.00
Course Development/Enhancement Project (20 Online Courses & Interactive Learning Objects)	224,830.00
<b>Category Expenditures</b>	<b>\$224,830.00</b>
<b>Total Expenditures</b>	<b>\$607,145.30</b>

## **Recommendation Review for 2013-2014 E-Learning Initiative**

### **1. Continue to look for efficiencies that will be used across all 58 colleges to support instructional and student services and provide additional cost savings for the System.**

Efficiency and cost savings are the name of the game in the community college system. We have been doing more with less since our system's inception. This practice has caused us to successfully face and conquer the challenges endured by other educational entities in our state. We know how to make a dollar stretch and how to reinvest it in our faculty and students. The System Office is dedicated to providing the teaching and learning tools and resources our staff, faculty, and students deserve. Projects planned, completed, and implemented for all colleges save on time, manpower, and funding.

The Virtual Learning Community (VLC) and the NC Learning Object Repository (NCLOR) rise to the top of the list when projects focused on instructional resources and delivery are involved. The VLC develops courses using subject matter experts from our colleges, instructional designers as well as technical editors to produce high quality content available to all colleges in our system. Technology tools and expertise, professional development, training, tutorials and webinars are just a few of the services provided by the VLC to community colleges free of charge.

In a like manner, the NCLOR contains over 47,000 items of digital content in the form of learning objects, videos, tutorials, lessons, and other learning resources. It serves as a repository for course materials, as a collection site for grant and collaborative groups, and as a storehouse for teaching and learning resources for educators throughout our state. The ability to search, access, and repurpose content removes the necessity to reinvent the wheel by instructors teaching similar courses who all need the same course supplemental materials and assignments.

The passage of the newly revised NCCCS-UNC comprehensive articulation agreement streamlines the articulation course lists and saves students time and money wasting financial aid dollars on courses they really do not need for a degree program. The VLC is already developing new courses and editing others to provide to the colleges by fall 2014. Interactive learning objects for these courses will be contributed to the NCLOR where they will be accessible to all faculty.

Resource and funding efficiencies serve as top priorities in all elements of strategic planning involving the 2 + 2 E-Learning Initiative. In the past year, NCCCS was able to streamline the STAT!Ref license to save over \$26,000 and select database resources that more closely align with the programs of study at the colleges. STAT!Ref usage has increased across the System with these additional database items.

### **2. Continuation and completion of Phase 1 of the Integrated Teaching and Learning Gateway.**

Funds from the 2 + 2 Initiative were not needed for the Integrated Teaching and Learning Gateway in 2013-2014, however, the project continues. At the conclusion of Phase I,

Year Two which ended June 30, 2013, the committee members moved forward with writing and editing content for the teaching and learning website. The Gateway is named NC3ATLAS, as it will serve as a guide to faculty and staff in their search for all elements of teaching and learning in the NCCC System. The beta launch of the website was in February 2014, after a review by the President's Leadership Team and the System Office Web Presence Committee. NC3ATLAS will be released to the colleges in May 2014.

A decision point will be set in 2014 to move the project forward to Phases II and III which will explore the addition of a search engine to integrate all of the teaching and learning resources in the system or a decision will be made to maintain NC3ATLAS at its current level which connects separate resources in one site. The NC3ATLAS beta site is <http://test-itlg.dcs.mcnc.org/>.

**3. Completion of the e-Text Pilot with the distribution of a white paper evaluating the four applications; submission of a request for proposal to select an e-text platform that is cost effective and meets the functional requirements of the system; and plan the implementation strategy for the system.**

In 2012-2013, 2 + 2 e-Learning Initiative funds provided resources for the second year of a pilot project involving eight (8) colleges which tested four (4) e-book software platforms that allow students across the state to purchase affordable online textbooks and support student learning. This project provides the opportunity for students to better utilize their educational dollars as well as to increase access to textbooks with built-in learning tools.

The e-Text Pilot Project provided detailed evaluation of e-Text software applications for faculty and students in our System. E-Text materials allow students to access textbooks in a digital form and provide enhanced features which include the ability to highlight, annotate, search, copy, paste, share, and print within the digital textbook environment. The participating community colleges were Robeson, Fayetteville Technical, Surry, Wilkes, Southwestern, South Piedmont, Catawba Valley, and Caldwell Community College & Technical Institute. Funding allocations for this pilot included travel expenses for participants and/or coordinators, training seminars on the individual software applications, research on best practices and other existing e-Text pilots, development of the criteria list for software evaluations, and the selection process of willing faculty members at each college to serve on evaluation committees.

On March 22, 2013, the e-Text Symposium was held at Surry Community College. Over 175 participants from 44 community colleges gathered to hear the results of the two-year comprehensive pilot of the four e-text software platforms. The platforms were reviewed for functionality, cost savings, portability, ease of use, and accessibility. Instructors and students piloted the platforms in a wide range of courses using laptops, tablets, and other mobile devices. One of the key factors under review was the change to the current business model of textbook sales through college bookstores. E-text usage on a college campus signals a paradigm shift of resources. Collaboration during this pilot was necessary among instructors, business offices, administrators, bookstore managers, and publishers in determining the appropriate implementation for this new technology at colleges. The average cost savings of the e-text application and book for students is 46% of the original textbook purchase price. While the most cost effective option is still the

rented used hardbound textbook, most students prefer the functionality of the e-text software and digital copy.

At the conclusion of the pilot in June 2013, a written report was submitted to the Executive Director of eLearning and Learning Technology Systems with the evaluation results and recommendations. (See Attachment F) The ultimate goal of the e-Text Pilot was to provide students with enhanced quality online reference materials at reduced prices which will support individual student learning and degree completions. Originally, the next step following the pilot summary report was to be the development of a request for proposal to identify the best and most cost-efficient e-text application and/or e-text publisher for the System and to achieve cost savings for students. However, the e-Text Pilot results determined that one size does not fit all in choosing an e-Text vendor. Different vendors support specific course publications and bookstore contracts. The community colleges will be better served to choose an e-Text provider based on the information from the pilot report taking into account the course materials their college requires. Discounted pricing can be achieved through consortium purchasing by multiple colleges.

**4. Continue to develop online courses and content for targeted programs that provide online access in the areas of STEM, career/technical education, and additional areas of critical need in the workplace.**

In order to meet the growing need for quality online courses, the NCCCS designated 2 + 2 E-Learning funds to the Virtual Learning Community to develop and/or edit 23 online curriculum and continuing education courses that are part of the newly revised transfer articulation agreement as well as other courses where curriculum revisions have been made. In addition to the standard courses, the VLC is developing three code enforcement courses in collaboration with the Code Qualifications Board of the NC Department of Insurance. These courses prepare students to take state qualifying certification tests. All 23 courses being developed and edited will be completed by June 30, 2014 and ready for fall course adoption or a pilot implementation in the case of the code courses.

Figure 4: VLC Course Development/Editing Project 2013-2014

Course ID	Course Name
ART 111	Art Appreciation
HIS 112	World Civilization II
PHY 151	College Physics I
PHY 152	College Physics II
HIS 111	World Civilization I
MAT 143	Quantitative Literacy
MAT 171	Precalculus Algebra
NUR 3240	Nurse Aide Level I
NUR 3241	Nurse Aide Level II
ART 115	Art History Survey II

BIO 168	Anatomy & Physiology I (BIO for Nursing)
BIO 169	Anatomy & Physiology II (BIO for Nursing)
SOC 210	Introduction to Sociology
MAT 263	Brief Calculus
ART 114	Art History Survey I
MAT 110	Math Measurement & Literacy
MAT 121	Algebra/ Trigonometry I
MAT 122	Algebra/ Trigonometry II
MAT 152	Statistical Methods I

ACA 111	College Student Success
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COD-3105	Building Inspection Level I
COD-3120	Fire Prevention Inspection Level I
COD-3130	Mechanical Inspection Level I

**5. Expand professional development opportunities for faculty and staff focused on online course certifications, tutorials, and new technology resources and tools.**

The Virtual Learning Community has developed a four-part course series to certify faculty as qualified online instructors. Faculty members must pass the course in order to be awarded their Certified Online Instructor certificate. The VLC Professional Development Center has taken the lead in offering this series to NCCCS colleges and faculty members. Several colleges are piloting the series with their faculty members. The initial offering of Course 1 was overwhelming and additional cohorts of students had to be added. It is hoped that all NCCCS colleges will adopt this online course series so that the quality and knowledge of instructors receiving this certification will be accepted system-wide.

The VLC Professional Development Center provides many workshops, tutorials, and webinars each month online and face to face at college campuses. This Center supports tools and resources funded by the 2 + 2 Initiative in training events. Multiple webinars were produced on V-Scope Explorer, Late Nite Labs, A.D.A.M. Interactive Anatomy Online, the NCLOR, and STAT!Ref. When NC3ATLAS goes live to all of the colleges, training webinars and presentations will be scheduled to introduce the website and its functionality.

Figure 5: VLC Professional Development Center Training Overview Chart 2010-2014

# PD Center Overview 2010-2014

as of 4/4/2014

	2010-2011	2011-2012	2012-2013	2013-2014
<i>Project partners</i>		6	18	7
<i>Conference sessions provided</i>		5	4	8
<i>Online courses offered</i>		4	4	16
<i>Webinars offered</i>	6	15	10	18
<i>Learning objects developed</i>	26	20	13	15
<i>Onsite training sessions at colleges</i>		15	40	72
<i>Total participants</i>	360	440	727	838
<i>Colleges participating</i>	34	30	40	40



## 6. Expand the participation of NCCCS colleges using the Virtual Computing Environment with a goal of 31 colleges.

Participation in the Virtual Computing Environment (VCE) has remained strong with 24 colleges actively using this cloud computing resource. The VCE business model provides community colleges a cost-effective alternative to expensive, traditional computer labs. The VCE is a remote access service that allows students and faculty to request or reserve a computer with a desired set of applications, and to remotely access it over the Internet. NCCCS and NC State University collaborate on this project with NC State providing the technical support and administrative services for the project.

There are many reasons for participating in the VCE. Colleges save money on software licenses since access to the software is 24/7 through the cloud as compared to loading software in computer labs that requires a student to be physically present during specified hours. There is a reduced need for new computer labs which includes hardware savings as well as classroom utilization. The life of computers in the existing labs is extended because less computing power is needed for access. There is a reduced cost of IT support for computer labs. And, colleges benefit through the ability to offer more asynchronous classes resulting in more FTE. Students save money by not having to purchase the software themselves. They can use older computers, and make fewer trips to campus to use the computer labs.

Revisions to the cloud-based Adobe and Microsoft licenses for higher education have reduced the numbers of new colleges participating in the VCE. Because most colleges use large quantities of Adobe and Microsoft licenses in their courses, the large increase in license costs have resulted in many colleges choosing to delay participation in this project. However, other colleges have seized this opportunity to load other software applications in the VCE that were not previously being used. Expensive allied health and engineering software packages as well as those with large file sizes are prime examples of applications that will save students and colleges' time and money.

The VCE Steering Committee held two information workshops at Nash and Pitt Community Colleges. Both events were well attended and new colleges were encouraged to participate. Additional workshops will be scheduled for the fall and spring of 2014-2015.

### **Recommendations for 2014-2015 2 + 2 E-Learning Initiative**

- 1. Continue to create efficiencies that will be used across all 58 colleges to support instructional and student services and provide additional cost savings for the System.** The VLC and NCLOR will continue to expand its offerings of courses, content, and resources to support teaching and learning for community colleges. The most critical needs of our system, the state, and our workforce will be considered priorities for both of these NCCCS resources.
- 2. NC3ATLAS launch.** The marketing and communication plans will be implemented, and the decision point for future expansion of a fully searchable system of teaching and learning resources will be considered.
- 3. E-Text implementation plans and pursuit of exceptional pricing of e-texts for students.** The e-Text Report will be distributed to college presidents as a guide for implementation of e-Texts at the local campuses. The system office will pursue pricing efficiencies through available contract and procurement practices for state agencies in order to save money for our colleges and our students.
- 4. Continue to develop online courses and content for targeted programs that provide online access in the areas of STEM, career/technical education, and additional areas of critical need in the workplace.** To continue with these efforts, in 2014-15 the VLC plans to develop three remaining courses designated by the Code Qualifications Board for online delivery. The VLC will also develop additional core education courses that have changed due to the comprehensive articulation agreement with UNC. These courses are needed for multiple curriculum programs and create further efficiencies in the community college system.
- 5. Expand professional development opportunities for faculty and staff focused on online course certifications, tutorials, and new technology resources and tools.** The VLC will continue to research and produce resources for the 58 colleges, as well as provide training on the technology tools that are critical to online teaching and learning.

6. **Expand the participation of NCCCS colleges using the Virtual Computing Environment.** NCCCS and NC State will continue to collaborate on this private cloud project to achieve efficiencies in software application delivery.



## Appendices

### Appendix A

#### 2013-2014 Expenditures for 2+2 E-Learning Initiative Student, Teaching and Learning Resources Implemented by the NCCCS

##### Educational Resource: Virtual Learning Community (VLC) Quality & Assessment Center Project: Integrated Teaching and Learning Gateway Beta Launches NC3ATLAS

**Description:** The Integrated Teaching and Learning Gateway connects all electronic resource systems and websites through the NC3ATLAS site. NC3ATLAS provides easy access to teaching, learning, and professional development resources for NCCCS faculty and students. Previously, these separate educational systems were difficult to find and many required unique logins. Without a consistent content platform and a comprehensive marketing and communication strategy, needed information is unavailable to faculty and students or they are unaware that it exists. The NC3ATLAS website provides access and efficiency to the academic and pedagogical needs of the NCCCS community.

The Integrated Teaching and Learning Gateway will be implemented in a three-phase development plan which will spread the costs over multiple funding years. Phase I of the project, now completed, defined the resources and content to be linked; evaluated and secured a hosting vendor; analyzed and cataloged the current content; linked all content to a single hosting solution; evaluated and secured the software solution to develop the gateway; hired a part-time project coordinator; selected project team members for all three phases; evaluated the ability to link all of the current systems and resources; and developed a common branding proposal. Phases two and three will define technology requirements, metadata schema for all resources, full implementation including marketing and training, and an overall evaluation of the results.

**Audience:** NCCCS faculty and students

**Cost:** \$0.00 (Funding will continue in Phases II and III pending Decision Point outcome)

**Status:** Phase I Beta Launch of NC3ATLAS in April 2014.

##### Educational Resource: Virtual Learning Community (VLC) Quality & Assessment Center Project: Course Development/Enhancement Project

**Description:** The VLC Quality & Assessment Center is leading the course development/editing project of 23 curriculum and continuing education courses. More than 125 new interactive learning objects, videos, self-assessments and additional supplemental materials are being developed for these courses. The courses will be meet accessibility compliance for Section 508

of the American with Disabilities Act (ADA). \* All courses will be available in Blackboard and Moodle learning management systems.

Three of the 23 courses are being developed in collaboration with the Code Qualifications Board of the NC Department of Insurance. The three code enforcement courses will be piloted in the fall 2014 and spring 2015 semesters.

Figure 4: VLC Course Development/Editing Project 2013-2014

Course ID	Course Name	Edit/Develop
ART 111	Art Appreciation	Edit
HIS 112	World Civilization II	Edit
PHY 151	College Physics I	Edit
PHY 152	College Physics II	Edit
HIS 111	World Civilization I	Edit
MAT 143	Quantitative Literacy	Develop
MAT 171	Precalculus Algebra	Develop
NUR 3240	Nurse Aide Level I	
NUR 3241	Nurse Aide Level II	
ART 115	Art History Survey II	Edit
BIO 168	Anatomy & Physiology I (BIO for Nursing)	Edit
BIO 169	Anatomy & Physiology II (BIO for Nursing)	Edit
SOC 210	Introduction to Sociology	Edit
MAT 263	Brief Calculus	Develop
ART 114	Art History Survey I	Edit
MAT 110	Math Measurement & Literacy	Develop
MAT 121	Algebra/ Trigonometry I	Develop
MAT 122	Algebra/ Trigonometry II	Develop
MAT 152	Statistical Methods I	Develop

ACA 111	College Student Success
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COD-3105	Building Inspection Level I
COD-3120	Fire Prevention Inspection Level I
COD-3130	Mechanical Inspection Level I

**Audience:** NCCCS faculty and students; Code Qualifications Board, NC Department of Insurance (code enforcement courses)

**Cost:** \$224,830.00

**Status:** Courses and interactive learning objects will be completed by June 30, 2014

**Educational Resource: Late Nite Labs - Online Chemistry, Biology, Physics, and Microbiology Lab Simulations**

**Description:** Late Nite Labs offers chemistry, biology, physics, and microbiology simulations that provide instructors with the capability to develop and customize high quality online laboratory simulations. This software allows students to complete labs anytime, anywhere.

**Audience:** NCCCS faculty and students

**Cost:** \$10,500.00

**Status:** Online biology, chemistry, physics, and microbiology courses are developed using Late Nite Labs. These simulations are used for fully online laboratory courses, as well as pre-lab and pre-test scenarios in hybrid and traditional courses. Since July 1, 2013, 898 NCCCS students from 13 community colleges have used Late Nite Labs in their courses.

**Savings:** Instructor PINS are free and do not expire for NCCCS instructors. Labs may be created and/or customized. Student PINS are provided at the reduced cost to NCCCS students of \$15.00 per course compared to \$49.99 for students in all other academic institutions. This is a savings of \$34.99 per student per course.

In 2013-2014, 898 student PINS were purchased by NCCCS students for the reduced rate of \$15.00. The total expenditure from all students was \$13,470 (excluding additional bookstore mark-ups).

Late Nite Labs regular student price:	\$49.95 x 898 students =	\$44,855.00
NCCCS discounted student price:	15.00 x 898 students =	<u>13,370.00</u>
	<b>Savings</b>	\$31,385.10

Annual site license fees of \$500 per college have been waived for NCCCS schools. Considering the 13 NCCCS colleges using Late Nite Labs this academic year, the System was able to save \$6,500 in site fees.

Additional savings are realized by the colleges as smaller quantities of laboratory materials and equipment are needed.

## Educational Resource: Science Learning Resources, Inc.

**Description:** The V-Scope Explorer: Biology and Anatomy & Physiology series provides a cost effective way for students to experience state-of-the-art microscopy focused on content to support courses in biology, nursing, allied health, and higher level science programs. The programs can be accessed through the NCLOR and can be downloaded to college computers in classrooms and computer labs.

V-Scope Explorer: Biology imitates the physical functionality of a real microscope and requires students to follow traditional laboratory process and protocol. The high resolution prepared biological specimens imaged for the program illustrate fundamental biological principles.

The V-Scope Explorer: Anatomy & Physiology uses images produced from high quality specimens including selected specimens from medical school histology teaching faculty. State-of-the-art photo microscopy was used to create images for the program so students experience microscopy in a way that is typically available to scientists in well-equipped research laboratories. In addition to standard histology slides, the program contains micro videos of living organisms, including living bacteria, protozoans, plants, and algae, and invertebrate

The V-Scope Explorer series come with a collection of lesson plans (Activity Guides) to direct students in virtual microscopy labs for both Anatomy/Physiology and Biology. Foundational content and support assignments and exercises are provided in the Activity Guides.

In addition to being a valuable component for online classes, the V-Scope Explorer allows students in traditional lab-based courses to have extended time for microscopic investigations which reinforces their traditional laboratory experience.

The programs can be accessed through the NCLOR and can be downloaded to college computers in classrooms and computer labs.

### V-Scope Explorer: Basic Biology Edition

**Audience:** NCCCS faculty and students

**Cost:** \$58,000.00 (New license with options to renew for system-wide use 7/1/13-6/30/14)

**Status:** This resource is being used in science courses and other related fields of study. NCCCS licenses the Basic Biology Edition which includes videos, study guides and frequent upgrades. Slides from this resource are in the top 25 most viewed resources in the NCLOR.

**Savings:** Free professional development faculty workshops and webinars are provided by Science Learning Resources. Activity guides were recently added at no additional cost to the System.

### V-Scope Explorer: Anatomy and Physiology

**Audience:** NCCCS faculty and students

**Cost:** \$12,500 for maintenance and annual license renewal for unlimited system-wide use (6/1/13-5/31/14)

**Status:** This resource is being used in upper level science, nursing, and allied health courses.

**Savings:** Free professional development workshops and webinars for NCCCS faculty are provided by Science Learning Resources. Study guides and supplemental materials have been added to the series for no additional cost to the System.

**Educational Resource: Monterey Institute for Technology and Education/  
National Repository of Online Content (NROC) Learning Objects)**

**Description:** The NROC collection of over 4100 multi-curriculum topics and 1,286 additional lessons is available to all NCCCS faculty, staff, and students to enhance online, hybrid, and face to face course content. Faculty may access the NROC resources through the NCLOR. This collection includes the subject areas of Algebra, American Government, Biology, Calculus, Developmental Math, Environmental Science, Physics, Psychology, Religion, Statistics, and US History.

**Audience:** NCCCS faculty and students

**Cost:** \$25,000.00 (Annual Membership)

**Status:** The NROC Collection is widely used by NCCCS faculty and students throughout our system.

**Savings:** System membership for the NCLOR allows for consortium use by colleges. Individual memberships for NCCCS institutions would total \$1,450,000.00.

**Educational Resource: Intelcom Repository Collections**

**Description:** Health, Philosophy and Adult Basic Education Collections add 748 resources to the NCLOR to support courses and programs in multiple curriculum environments where additional resources were needed. Face to face, hybrid, and online course content in allied health fields, nursing, psychology, sociology, humanities, and basic skills courses are enhanced with these collections. This content may be embedded into NCCCS courses.

**Audience:** NCCCS faculty and students

**Cost:** \$30,600.00 (Annual License 4/14/ - 4/15)

**Status:** Collections to be added to the NCLOR in April 2014.

**Savings:** NCCCS price was discounted by 10% for a multiple discipline license.

## **Educational Resource: STAT!Ref®**

**Description:** The North Carolina Community College System Office annually licenses STAT!Ref® for unlimited use by all 58 colleges. This online resource is a database that includes over 35 electronic medical textbooks, in addition to journals and current articles for programs in allied health, nursing, dental, and emergency medical fields. Campus access to STAT!Ref® is through IP authentication. Each college is also provided a unique login for remote use by faculty, staff, and students. Remote login information is provided to the Library Resource Director at each college. Students and faculty may also access this resource through a mobile app on electronic devices.

**Audience:** NCCCS faculty and students in nursing, allied health, emergency medical services, and related programs of study

**Cost:** \$25,325.30

**Status:** In 2013, NCCCS students and faculty had over 292,149 minutes of usage in the STAT!Ref database. Usage minutes included all delivery devices (mobile, tablet, PC, MAC, desktop, laptop computers, etc.). Statistics for the spring semester will be released in May 2014.

**Savings:** \$26,802.70

NCCCS evaluated the individual offerings on the database in May 2013, and eliminated and added selections based on the value of each resource to specific programs of study. In addition, the database was licensed directly from Teton Data, the parent company, and not a third party vendor as was previously done. The result of adjusting the line items and the license holder resulted in a savings of \$26,802.70.

## **Educational Resource: National Library Alliance / Animated Dissection of Anatomy for Medicine (A.D.A.M. Interactive Anatomy Online)**

**Description:** The North Carolina Community College System Office has licensed Animated Dissection of Anatomy for Medicine (A.D.A.M. Interactive Anatomy Online) through the National Library Alliance for use by all 58 colleges.

A.D.A.M. Interactive Anatomy Online is an online comprehensive interactive anatomy teaching tool. It includes detailed graphics and advanced functionality combined with a multimedia encyclopedia, a complete library of 3D images, and over 3,000 illustrations for learning clinical concepts. This resource is designed to enhance allied health, nursing, continuing medical education (CME) or other medical related courses requiring the study of clinical applications and concepts. Access to A.D.A.M. Interactive Anatomy Online is through IP authentication on campus or by using a campus-wide username and password for remote access.

**Audience:** NCCCS Instructors and students

**Cost:** \$17,600.00 (1/1/14-12/31/14)

**Status:** Data collected from 3/31/13 – 3/31/14 revealed a total of 12,375 sessions by students and faculty from all 58 community colleges.

**Educational Resource: North Carolina Learning Object Repository (NCLOR) – Pearson/Equella (vendor), Hosted by ITS, NCCCS LOR Hardware**

**Description:** The North Carolina Learning Object Repository (NCLOR) is a system-wide resource which provides the capacity to catalog and store, search, access, and utilize digitized learning/teaching content. Learning object repository technology promotes sharing of high quality resources and drastically reduces costs of duplication. The 2+2 funds were used to establish and maintain the North Carolina Learning Object Repository. The project includes 2+2 funds to be directed for appropriate project management services required to satisfy Senate Bill 991 documentation and protocol; and contract services to assure that all testing components of the vendor Request for Proposal and contract development are properly completed and documented. In 2013, the Department of Public Instruction joined the NCCCS contract with funds from the federal Race to the Top grant which covered the purchase of a perpetual license resulting in lower maintenance costs and fees for all state partners.

**Audience:** Faculty and students of NCCCS, DPI, UNC System, and several North Carolina private colleges and universities.

<b>Cost:</b> \$100,000.00	(Software License/Maintenance)
42,540.00	(ITS Hosting and Digital Certificate)
20,000.00	(LOR Admin Training/Travel)
<u>39,650.00</u>	(ITS Project Manager: budgeted amount per Senate Bill 991)
\$202,190.00	

**Status:** In May 2014, the State Board of Community Colleges is scheduled to renew the annual contract agreements with (1) Pearson/Equella for software and professional services and (2) the State Information Technology Service (ITS) to provide hosting and project management services.

**Savings:** With the purchase by DPI of the perpetual license for Equella software, the license, maintenance, and training fees for NCCCS dropped from \$189,000.00 in 2012-2013 to \$120,000 in 2013-2014. The net savings was \$60,000.00.

**Educational Resource: CHOICE Reviews Online**

**Description:** *Choice: Current Reviews for Academic Libraries* is the premier source for reviews of academic books, electronic media, and Internet resources of interest to schools of higher education. Choice publishes more than 7,000 reviews each year that librarians, faculty, and key decision makers use when compiling purchasing lists for collection development and scholarly research. Choice reaches almost every undergraduate college and university library in the United States.

**Audience:** NCCCS library resource community and system-wide faculty

**Cost:** \$600.00

**Status:** Subscription is in place through 6/30/2014. NCCCS has decided not to renew this resource due to changes in the subscription policy.

\*Section 508 requires that all individuals with disabilities (whether they are federal government employees or members of the general public) have access to, and use of information and data, comparable to that provided to individuals without disabilities, unless an undue burden would be imposed on the Department.



## Appendix B



Learn. Virtually Anywhere.

### Degrees Available from the NCCCS Virtual Learning Community® (VLC)

There are currently 311 curriculum courses in the VLC Library with which colleges in the NCCCS could build programs of study to offer 37 online degrees. Those degrees include:

1. AA/Associate in Arts (A1010A)
2. AA/Business Administration, Accounting, Economics, Finance, & Marketing (A1010B)
3. AA/Business Education and Marketing Education (A1010C)
4. AA/Criminal Justice (A1010D)
5. AA/English (A1010E)
6. AA/Health Education (A1010G)
7. AA/History (A1010H)
8. AA/Nursing (A1010I)
9. AA/Physical Education (A1010J)
10. AA/Political Science (A1010K)
11. AA/Psychology (A1010L)
12. AA/Social Science Secondary Education (A1010M)
13. AA/Sociology (A1010N)
14. AA/Communication (A1010O)
15. AA/Social Work (A1010Q)
16. AA/Elementary Education (A1010R)
17. AA/Special Education (A1010S)
18. AA/Computer Science (A1010T)
19. AA/Liberal Arts (A1010U)
20. AA/Information Systems (1010V)
21. AA/Middle Grades Education (A1011A)
22. AA/General Education (A1030O)
23. AS/Biology/Biology Education (A1040A)
24. AS/ Chemistry/Chemistry Education (A1040B)
25. AS/Mathematics (A1040E)
26. AS/Associate in Science (A1040O)
27. AS/Engineering (A1040D)
28. AAS/Accounting (A25100)
29. AAS/Business Administration (A25120)
30. AAS/ Business Administration/Human Resources Management (A2512C)
31. AAS/Business Administration/International Business (A2512D)
32. AAS/Business Administration/Marketing and Retailing (A2512F)
33. AAS/ Business Administration/E-Commerce (A2512I)
34. AAS/Computer Programming (A25130)
35. AAS/ Office Systems Technology (A25360)
36. AAS/Paralegal Technology (A25380)
37. AAS/Criminal Justice Technology (A55180)

## Appendix C



311 Curriculum Courses  
52 Continuing Education Courses

<i>Course #</i>	<i>Course Name</i>
<b>Curriculum Courses</b>	<b><i>Curriculum Courses</i></b>
ACA 090	Study Skills
ACA 111	College Student Success (2012-2013) e-text; (2013-2014) edited
ACA 112	Intro. To Distance Learning
ACC 115	College Accounting
ACC 118	College Study Skills
ACC 120	Principles of Financial Accounting
ACC 121	Principles of Managerial Accounting
ACC 122	College Transfer Success
ACC 129	Individual Income Taxes
ACC 130	Business Income Taxes
ACC 140	Payroll Accounting
ACC 150	Accounting Software Applications
ACC 220	Intermediate Accounting I
ACC 225	Cost Accounting
ACC 270	International Accounting
ACM 110	Intro to Animal Care
AGR 170	Soil Science
AHR 120	HVACR Maintenance
AHR 160	Refrigerant Certification
ANS 110	Animal Science
ANS 150	Animal Health Management
ARC 131	Building Codes
ANT 210	General Anthropology
ART 111	Art Appreciation (2013-2014) edited
ART 114	Art History Survey I (2013-2014) edited
ART 115	Art History Survey II (2013-2014) edited
BIO 111	General Biology I
BIO 112	General Biology II
BIO 120	Introductory Botany
BIO 130	Introductory Zoology
BIO 140	Environmental Biology

BIO 145	Ecology
BIO 165	Anatomy & Physiology I
BIO 166	Anatomy & Physiology II
BIO 168	Anatomy & Physiology I (2013-2014) <i>edited</i>
BIO 169	Anatomy & Physiology II (2013-2014) <i>edited</i>
BIO 175	General Microbiology
BIO 275	Microbiology
BPM 110	Bioprocess Practices
BPR 111	Blueprint Reading
BUS 110	Introduction to Business
BUS 115	Business Law I
BUS 116	Business Law II
BUS 121	Business Math
BUS 135	Principles of Supervision
BUS 137	Principles of Management
BUS 153	Human Resource Management
BUS 217	Employment Law and Regulations
BUS 225	Business Finance
BUS 230	Small Business Management
BUS 234	Training and Development
BUS 238	Integrated Management
BUS 239	Business Applications Seminar
BUS 252	Labor Relations
BUS 256	Recruitment Selection & Personnel Planning
BUS 258	Compensation and Benefits
BUS 259	HRM Applications
BUS 260	Business Communications
CHM 090	Chemistry Concepts
CHM 131	Introduction to Chemistry
CHM 131A	Introduction to Chemistry Lab
CHM 132	Organic & Biochemistry
CHM 135	Survey of Chemistry I and Lab
CHM 151	General Chemistry I
CHM 152	General Chemistry II
CHM 251	Organic Chemistry I
CHM 252	Organic Chemistry II
CIS 070	Fundamentals of Computing
CIS 110	Introduction to Computers
CIS 111	Basic PC Literacy
CIS 113	Computer Basics
CIS 115	Introduction to Programming & Logic
CIS 165	Desktop Publishing I
CJC 111	Introduction to Criminal Justice
CJC 112	Criminology
CJC 113	Juvenile Justice
CJC 121	Law Enforcement Operations
CJC 131	Criminal Law
CJC 132	Court Procedure & Evidence
CJC 141	Corrections
CJC 212	Ethics & Community Relations
CJC 221	Investigative Principles
CJC 231	Constitutional Law
COE 111	Co-op Work Experience I
COM 110	Introduction to Communication
COM 120	Interpersonal Communication
COM 130	Nonverbal Communication

COM 231	Public Speaking
CSC 120	Computing Fundamentals I
CSC 130	Computing Fundamentals II
CSC 134 &134B	C++ Programming
CSC 139	Visual Basic Programming
CSC 151	JAVA Programming
CSC 220	Machine Implementation of Algorithms
CSC 234	Advanced C++ Programming
CSC 239	Advanced Visual Basic Programming
CSC 289	Programming Capstone Project
CTS 125	Presentation Graphics
CTS 130	Spreadsheet
CTS 220	Advanced Hardware/Software Support
CTS 230	Advanced Spreadsheet
CTS 285	Systems Analysis and Design
DBA 110	Database Concepts
DBA 115	Database Applications
DFT 170	Engineering Graphics
ECM 168	Electronic Business
ECM 210	Introduction to Electronic Commerce
ECM 220	E-Commerce Planning & Implementation
ECO 151	Survey of Economics
ECO 251	Principles of Microeconomics
ECO 252	Principles of Macroeconomics
EDU 118	Teacher Assoc. Principles and Practice
EDU 119	Introduction Early Child Education
EDU 131	Child, Family, and Community
EDU 144	Child Development I
EDU 145	Child Development II
EDU 146	Child Guidance
EDU 151	Creative Activities
EDU 153	Health, Safety, & Nutrition
EDU 186	Reading & Writing Methods
EDU 216	Foundations of Education
EDU 221	Children with Exceptionalities
EDU 222	Learners with Behavior Disorders (formerly EDU 147)
EDU 223	Specific Learning Disabilities (formerly EDU 148)
EDU 235	School Age Development & Program
EDU 247	Sensory and Physical Disabilities
EDU 248	Developmental Delays
EDU 261	Early Childhood Administration I
EDU 262	Early Childhood Administration II
EDU 271	Education Technology
EDU 275	Effective Teacher Training
EDU 280	Language & Literacy Experiences
EDU 285	Internship Experience – School Age
EGR 110	Introduction to Engineering Technology
EGR 220	Engineering Statics
ELC 112	Industrial Safety
ELC 113	Basic Wiring I
ELC 115	Industrial Wiring
ELC 117	Motors and Controls
ELC 128	Introduction to PLC
ELC 131	Circuit Analysis I
ELC 133	Circuit Analysis II
ELC 228	PLC Applications

ELN 131	Analog Electronics I
ELN 132	Analog Electronics II
ELN 133	Digital Electronics
ELN 152	Fabrication Techniques
ELN 232	Intro to Microprocessors
ELN 246	Cert Elect Tech Prep
EMS 235	EMS Management
ENG 070	Basic Language Skills
ENG 080	Writing Foundations
ENG 090	Composition Strategies
ENG 111	Expository Writing
ENG 112	Argument Based Research
ENG 113	Literature Based Research
ENG 114	Professional Research & Reporting
ENG 131	Introduction to Literature
ENG 231	American Literature I
ENG 232	American Literature II
ENG 233	Major American Writers
ENG 241	British Literature I
ENG 242	British Literature II
ENG 251	Western World Literature I
ENG 261	World Literature I
ENG 262	World Literature II
ENG 273	African-American Literature
ENV 110	Environmental Science
ENV 218	Environmental Health
FIP 120	Intro to Fire Protection
FIP 124	Fire Prevention & Public Education
FIP 128	Detection & Investigation
FIP 132	Building Construction
FIP 152	Fire Protection Law
FIP 220	Fire Fighting Strategies
GEO 111	World Regional Geography
HEA 110	Personal Health & Wellness
HEA 112	First Aid and CPR
HEA 120	Community Health
HIS 111	World Civilizations I (2013-2014) <i>edited</i>
HIS 112	World Civilizations II (2013-2014) <i>edited</i>
HIS 121	Western Civilization I
HIS 122	Western Civilization II
HIS 131	American History I
HIS 132	American History II
HIS 222	African-American History I
HIS 223	African-American History II
HIT 112	Health Law & Ethics
HOR 112	Landscape Design I
HOR 160	Plant Materials I
HOR 166	Soils & Fertilizers
HSE 110	Introduction to Human Services
HSE 210	Human Services Issues
HUM 110	Technology & Society
HUM 115	Critical Thinking
HUM 122	Southern Culture
HUM 150	American Women's Studies
HUM 160	Introduction to Film
HYD 110	Hydraulic Pneumatics I

INT 110	International Business
INT 210	International Trade
INT 220	International Economics
INT 230	International Law
ISC 110	Workplace Safety
ISC 112	Industrial Safety
ITN 150	Internet Protocols
ITN 250	Implementing Internet Services
LEX 110	Introduction to Paralegal Study
LEX 120	Legal Research/Writing I
LEX 130	Civil Injuries
LEX 140	Civil Litigation I
LEX 150	Commercial Law I
LEX 210	Real Property I
LEX 240	Family Law
LEX 250	Wills, Estates, & Trusts
LOG 110	Introduction to Logistics
MAT 050	Basic Math Skills
MAT 060	Essential Mathematics
MAT 070	Introductory Algebra
MAT 080	Intermediate Algebra
MAT 090	Accelerated Algebra
MAT 110	Math Measurement & Literacy (2013-2014)
MAT 115	Mathematical Models
MAT 121	Algebra/Trigonometry I (2013-2014)
MAT 122	Algebra/Trigonometry II (2013-2014)
MAT 143	Quantitative Literacy (2013-2014)
MAT 140	Survey of Mathematics
MAT 151	Statistics I
MAT 152	Statistical Methods I (2013-2014)
MAT 161	College Algebra
MAT 167	Discrete Mathematics
MAT 167A	Discrete Mathematics
MAT 171	Precalculus Algebra (2013-2014)
MAT 175	Precalculus
MAT 175A	Precalculus Lab
MAT 263	Brief Calculus (2013-2014)
MAT 271	Calculus I
MAT 272	Calculus II
MAT 273	Calculus III
MAT 280	Linear Algebra
MAT 285	Differential Equations
MEC 111	Machine Processes I
MEC 180	Engineering Materials
MED 118	Medical Law & Ethics
MED 121	Medical Terminology I
MED 122	Medical Terminology II
MKT 120	Principles of Marketing
MKT 122	Visual Merchandising
MKT 123	Fundamentals of Selling
MKT 220	Advertising & Sales Promotion
MKT 221	Consumer Behavior
MKT 223	Customer Satisfaction (OMT154)
MKT 225	Marketing Research
MKT 226	Retail Applications
MKT 230	Public Relations

MNT 110	Intro to Maintenance Procedures
MNT 111	Maintenance Practices
MUS 110	Music Appreciation
NET 110	Networking Concepts
NOS 110	Operating System Concepts
NOS 130	Windows Single User
NOS 230	Windows Administrator I
NUT 110	Nutrition
OMT 154	Customer Satisfaction
OST 122	Office Computations
OST 134	Text Entry & Formatting
OST 136	Word Processing
OST 137	Office Software Applications
OST 138	Advanced Software Applications
OST 148	Medical Coding, Billing and Insurance
OST 149	Medical Legal Issues
OST 164	Text Editing Applications
OST 184	Records Management
OST 236	Advanced Word/Information Processing
OST 289	Office Systems Management
PED 110	Fit and Well for Life
PHI 210	History of Philosophy
PHI 240	Introduction to Ethics
PHY 110	Conceptual Physics
PHY 151	College Physics I <i>(2013-2014) edited</i>
PHY 152	College Physics II <i>(2013-2014) edited</i>
PHY 251	General Physics I
PHY 252	General Physics II
POL 120	American Government
PSY 150	General Psychology
PSY 241	Developmental Psychology
PSY 281	Abnormal Psychology
PTC 110	Industrial Environment
RED 070	Essential Reading Skills
RED 080	Introduction to College Reading
RED 090	Improved College Reading
REL 110	World Religions
REL 212	Intro to New Testament
SEC 110	Security Concepts
SEC 150	Secure Communications
SEC 160	Secure Administration I
SOC 210	Introduction to Sociology <i>(2013-2014) edited</i>
SOC 213	Sociology of the Family
SOC 220	Social Problems
SOC 225	Social Diversity
SPA 111	Elementary Spanish I
SST 140	Green Bldg & Design Concepts
VEN 133	Intro to Winemaking
WEB 110	Internet/Web Fundamentals
WEB 115	Web Markup and Scripting
WEB 120	Intro to Internet Multimedia
WEB 140	Web Development Tools
WEB 210	Web Design
WEB 230	Implementing Web Service
WEB 250	Database Driven Websites
WLD 110	Cutting Processes

WLD 112	Basic Welding Processes
<b>Continuing Education Courses</b>	<b><i>Continuing Education Courses</i></b>
ANS 3011	Veterinary Assisting
CAT 3100	Computed Tomography
CJC 3100	Law Enforcement: Explosives, Dirty Bombs, & Radiation Response
CJC 3100	Law Enforcement: Weapons of Mass Destruction
CJC 3100	Legal Aspects of Bioterrorism for Law Enforcement
COD 3105	Building Inspection Level I (2013-2014)
COD 3120	Fire Prevention Inspection Level I (2013-2014)
COD 3130	Mechanical Inspection Level I (2013-2014)
COM 3729	Business Writing Skills
EDU 3000	Lateral Entry – Orientation
EDU 3002	Effective Teacher Training
EGY 2004	Green Purchasing
EGY 3000	Renewable Energy
EMS 3000	Anatomy & Physiology
EMS 3044	Emergency Medical Technician Basic Initial
EMS 3200	Biological Agents of Bioterrorism
EMS 3200	Bioterrorism Awareness for EMS
EMS 3200	Chemical Agents of Bioterrorism
EMS 3200	Decontamination & Transport of Exposed Patients
EMS 3200	Radiological Emergencies for EMS
EPT 3600	Emergency Preparedness – NC Perspective
FIP 3402	Firefighter I (Select Topics)
FIP 3610	Introduction to Fire Pumps
FIP 4728	Introduction to Bioterrorism for Firefighters
FIP 5512	R.T. Hazmat Awareness & Terrorism
FLI 3717	Conversational Spanish for Healthcare Workers
HAZ 3061	Hazardous Materials: Awareness
HEA 3002	Anatomy and Physiology
HEA 3014	Fund. Skills for Substance Abuse Counselors–Core Functions
HEA 3014	Fund. Skills for Substance Abuse Counselors – Ethics
HOS 3060	Meetings and Convention Planning Introduction
HRD 3001	Employability Skills
HSE 3264	Activity Director – Basic
ISC 3036	Principles of Industrial Safety
ISC 3400	Composite Manufacturing
ISC 3500	Tools for Technology
MED 3023	Medical Coding
MED 3025	Medical Billing
MED 3030	Healthcare Billing & Coding
MHT 3100	Mental Health/ Developmental Disabilities Worker
MKT 3438	Customer Service
MNT 3000	NC Manufacturing Certification Level I
MLA 3022	Phlebotomy Education and Clinical Experience
MLS 3808	Leadership
NUR 3235	Medical Terminology



NUR 3236	Medical Transcription
NUR 3240	Nurse Aide Level I (2013-2014) <i>edited</i>
NUR 3241	Nurse Aide Level II (2013-2014) <i>edited</i>
NUR 3279	Gerontology
OSC 3609	Unit Secretary (for hospital or nursing home)
OSH 3300	Bloodborne Pathogens Training
PHM 3250	Pharmacy Technician Training
	<b><i>Small Business Center Seminars</i></b>
SBCN-1	How to Start a Business
SBCN-2	How to Write a Business Plan
SBCN-3	Market Research and Marketing
	<b><i>Adult High School Development Courses</i></b>
AHS	Algebra I
AHS	Biology
AHS	English I
	<b><i>Professional Development Courses</i></b>
COI	Certified Online Instructor – Level I
OCT	Online Course Template (for development of 'VLC Certified Courses')
OCT 2	Online Course Template (for the development of online courses by an individual instructor for their personal use-not 'VLC Certified Courses')
PTOI	Principles and Techniques of Online Instruction

VLC courses are available for download and use, free of charge to NC Community Colleges. Visit our VLC website at <http://vlc.nccommunitycolleges.edu>. Contact Kathy Davis, eLearning Specialist, at [davisk@nccommunitycolleges.edu](mailto:davisk@nccommunitycolleges.edu), to obtain a login and password to download a VLC Course.

# Appendix D NCLOR

The screenshot displays the NCLOR website interface. At the top right, there is a "GUEST | LOG OUT" link. The main header features the "NC ExpLORe" logo and the text "North Carolina Learning Object Repository" over a blue background with a map of North Carolina and network lines. Below the header, a "Help" button is visible in the top right corner.

The interface is organized into several sections:

- Left Sidebar:** A vertical menu with icons and text for "Dashboard", "Search", "Browse by Subject/Discipline", "Browse by Grade Level", "Browse by Resource Series", "Browse by Learning Resource Type", "Report a Problem", and "NCLOR Portal".
- Quick search:** A search bar with a magnifying glass icon and a "Q" button.
- Browse:** A section with four expandable categories:
  - Browse by Subject/Discipline:** Resources organized by subject.
  - Browse by Grade Level:** Resources cataloged by intended educational audience.
  - Browse by Resource Series:** Resources cataloged by resource available from a specific series, including NCVPS Collection New! (12/13/13) Intelcom Resources Series New! (11/18/13) Sumanas Inc Resource Series New! (11/15/13).
  - Browse by Learning Resource Type:** Resources cataloged by the type of resource.
- NCLOR Tutorials:** A section titled "NCLOR Tutorials" containing a list of links:
  - NCLOR Orientation:
  - NCLOR 6.1 New Features
  - NCLOR Orientation Tutorial
  - Using the NCLOR with a Learning Management System (LMS):
    - Blackboard 9.1x
    - Moodle 2.3 & Higher
  - Using the NCLOR with the Main Interface
  - How to Search and Download Resources
  - How to Contribute
  - Resource Management
- Recent contributions:** A list of recent uploads with titles and timestamps:
  - Exploration: Establishing Colonies in the New World (about 5 hours ago)
  - The Columbian Exchange (about 5 hours ago)
  - Imperialism identification (about 5 hours ago)
  - Cold War Matching (about 5 hours ago)
  - Chaucer's Characters from the Canterbury Tales (about 5 hours ago)A "Show More" button is located at the bottom of this section.

At the bottom of the page, there is a copyright notice: "© North Carolina Learning Object Repository 2014 All Rights Reserved." and a "W3C WAI-AA MCAG 2.0" logo. The "NC ExpLORe" logo is also present in the bottom right corner.

## Appendix E



### OER Content in the NCLOR

The mission of the North Carolina Learning Object Repository (NCLOR) is to provide a centralized location for the acquisition, collection, sharing, and management of quality learning resources for all teachers in North Carolina.

To access any of the resources listed below or find more information about the NCLOR, visit [www.explorethelor.org](http://www.explorethelor.org).

#### Open Educational Resources

The following is a list of K-14 grade level resources that are completely free and open materials available to anyone logged in as guest to the NCLOR.

- **CK-12 Flexbooks** - This resource series is a collection of free Flexbooks (eBooks) offered by the CK-12 Foundation. This series includes resources on **Algebra, Biology, Physics, Calculus, Chemistry, Engineering,** and **Statistics**.
- **Flat World Knowledge** - This resource is an open e-textbook series that includes resources on **Algebra and Chemistry**.
- **Harvard Open Learning Initiative** - The series from Harvard University is comprised of complete video courses in disciplines such as: **Computer Science** and **Mathematics**.
- **Khan Academy** - This series includes thousands of **Math, Biology, Chemistry,** and **Physics** videos tutorials.
- **Math Open Reference** - This **Geometry** resource series includes interactive animations explaining a variety of geometry topics.
- **MIT Open Courseware** - This series is a collection of the Massachusetts Institute of Technology OpenCourseWare materials that include **Biology, Physics, Computer Science,** and **Chemistry**.
- **National Science Foundation** - This video resource series includes topics such as: **Physics** and **Chemistry**.
- **NC School of Science and Mathematics** - This is a series of resources including graphics, interactive animations, videos, lesson plans, and professional development made available by the North Carolina School of Science and Mathematics. The STEM subjects included in this series are: **Biology, Physics, Calculus,** and **Chemistry**.
- **NC BioNetwork** – This is the collection of the official items used by NC BioNetwork. This series includes topics such as: **Laboratory Technology, Career and Technical Education,** and **Engineering**.
- **Open Course Library** - The Washington State Board for Community and Technical Colleges (SBCTC) has created this collection of expertly developed educational materials for 42 of the state’s highest-enrolled college courses. The STEM subjects included in this resource series are: **Calculus, Chemistry, Geology, Oceanography, Physics,** and **Statistics**.
- **Periodic Table of Videos** - This **Chemistry** resource series, from the University of Nottingham, is a collection of short video clips that explain all 118 elements.
- **PhET Simulations** - This resource series is made available by the PhET Interactive Simulations Project at the University of Colorado. The subject areas included in this series are **Biology, Chemistry, Earth Science, Math,** and **Physics**.
- **Wisc-Online** - This series is a science, technology, engineering and math (STEM) related resource series. Over 1000 learning objects that includes **Engineering, Nanotechnology, Electronics, Biology, Chemistry,** and **Physics**.

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## Appendix F Executive Summary of the E-Text Pilot Report



Sponsored by  
Virtual Learning Community  
Quality and Assessment Center  
Surry Community College

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### EXECUTIVE SUMMARY

The North Carolina Community College System (NCCCS) Virtual Learning Community (VLC) conducted a yearlong e-Text pilot to assess the benefits and challenges of a system-wide e-Text implementation. The e-Text pilot was led by the Quality and Assessment Center hosted by Surry Community College. Dr. David Shockley, Surry Community College President, served as Executive Sponsor and Dr. Candace Holder, Vice President of Technology Services and VLC Quality and Assessment Center Director, directed the pilot. The goal of the pilot was to provide students with enhanced quality online reference materials at reduced prices in a way that would support individual student learning and degree completion. The main purpose of the pilot was to examine the cost reductions associated with e-Text versus print textbooks. Other outcomes included an evaluation of e-Text software readers for faculty and students in our System and documentation on the use of the enhanced features which include the ability to highlight, annotate, search, copy, paste, share, and print. The results of the pilot are intended to guide the colleges in a successful and sustainable solution and considerations for widespread implementation of e-Texts.

The project involved eight of the 58 NCCCS colleges. The pilot colleges could choose one or more e-Text providers that were selected to be a part of the pilot, CourseLoad, CourseSmart®, CafeScribe® or VitalSource®. The colleges could also choose which courses and e-textbooks they wished to use for the pilot, according to their local textbook selections. Colleges were encouraged to create a local e-Text committee to include participants from various areas of campus, such as faculty, registrars, bookstore managers, course schedulers, distance learning administrators, IT staff, and college administrators. Participation in the pilot from various stakeholders was a critical component of the study. At the conclusion of the pilot, the colleges each submitted a written report of their findings, which were compiled into the final report for the North Carolina Community College System.

There were many lessons learned by doing a pilot of eight colleges with different implementation approaches and different vendors. Not all vendors support content from all major publishers. Colleges must carefully select vendors that support the textbooks chosen for their courses, or they have to choose different textbooks in order to use e-Texts. Not all vendors have rights to digital content. Many textbook authors have not released digital rights, only printed rights. Colleges considering e-Text implementation should form e-Text teams across functional areas at their college. It is important to include business officers, registrars, financial aid advisors, faculty, bookstore directors, learning management system administrators, network administrators, etc. in order to reach all of the stakeholders in an e-Text implementation. Input from all functional areas will enable a more successful implementation. The costs of materials for some vendors are predetermined while for others, costs may be negotiated. Consistent pricing models for e-Texts would be helpful. Inconsistency of pricing based on size of the college was also noted, with larger colleges getting bigger discounts. (See chart of savings by platform and by institution in Research Findings.) e-Texts purchased by the students directly from the publishers diminishes the bookstore revenues. Colleges need to review existing contracts with bookstore vendors and publishers or negotiate terms that are favorable for e-Texts and different platforms. Since many students prefer a printed text, colleges need to consider print copy options. Printing costs could greatly increase at colleges if students print chapters on campus printers.

The primary findings of the study also included some major benefits and challenges, highlighted in the table below.

<b>Benefits</b>	<b>Challenges</b>
Cost savings	Students want cost savings of more than 50%. Used textbook rental is still cheaper than e-Texts. Bundling options are not usually available for e-Texts that are available for printed texts.
Portability of content	Not all content is supported on all devices or operating systems
Anytime access	Access is not forever, usually for a limited time
Highlighting text and sharing notes	Limited offline access and ability to sync when back online
Subscribing to instructor notes	Sporadic or inconsistent Internet access
Search features	Access to power sources to charge devices
Course statistics	Classroom delays due to trying to access e-Texts online
User-friendly interface	Difficulty in reading, zooming, and navigating digital format. Many students simply prefer a printed textbook.
Adjustable fonts	Level of technology skills for faculty and students
Ability to launch other applications	Time required to explain e-Text functions
Audio functionality	Cost of devices to support e-Text usage

	Possibility that financial aid will not cover device costs (when it covers printed books)
	Support for e-Text usage
	Accessibility of platforms and adherence to Americans With Disabilities Act (ADA) standards
	Some instructor materials are not available in e-Text form
	Publisher companion websites are not integrated within the platform

Recommendations from the study as we pursue a solution at the system level include: implement the e-Texts in stages allowing time between adoption and implementation, ensure sustainable cost savings for e-Texts, make e-Texts optional for students, ensure adequate training on functionality and usage for faculty and students, provide proper technology resources/support, create an easy identifier of e-Text courses in the student information system and college catalogs, meet the business needs of various bookstore models, assist with streamlining of college processes, integrate with existing learning management systems, ensure that e-Text platforms are compatible with multiple devices and operating systems, and ensure Americans With Disabilities Act (ADA) accessibility of platforms and content.

While the e-Text option did provide a cost reduction over new printed texts, more significant cost savings could be achieved through system-wide pricing through a competitive bid process (Request for Proposals (RFP) by the System Office) or consortia agreements. The recommendations from the e-Text pilot should be considered in an RFP. Key cost considerations in a system-wide RFP should include:

1. Publisher contracts need to be in place with guaranteed, equal pricing for all community colleges in order to sustain any cost savings
2. Cost model that considers the value of e-software application features ( i.e., value of features versus print material)
3. Flat fee based model with flexible cost model to meet individual college business needs
4. Print copy options.

Preferences for vendors or products in this pilot are not official recommendations by the North Carolina Community College System, but are simply indications from the experiences of the end-users during the pilot.