The North Carolina Community College System
and
The University of North Carolina
Joint Report on
The NCCCS – UNC 2 + 2 E-Learning Initiative
(Session Law 2006-66, Section 9.1)

Submitted At the Request of
The North Carolina General Assembly

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Part I
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NCCCS/UNC 2 + 2 E-Learning Initiative
2007-2008

Pursuant to Session Law 2006-66, An Act to modify the Current Operations and Capital Appropriation Act of 2005, section 9.1, and Session Law 2008-107, Section 9.7(c), the North Carolina Community College System Office and the University of North Carolina General Administration submit this report on the implementation of the North Carolina Community College System (NCCCS) – University of North Carolina (UNC) 2 + 2 E-Learning initiative (the Initiative).

Pursuant to Session Law 2008-107, Section 9.7(c), the University of North Carolina (UNC) and the North Carolina Community College System (NCCCS) shall report by September 1, 2008, and annually thereafter, to the Joint Legislative Education Oversight Commission, 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. This report includes:

1) The courses and programs within the 2+2 E-Learning Initiative;
2) The total number of prospective teachers that have taken or are taking part in this initiative to date broken down by the current academic period and each of the previous academic periods since the program's inception;
3) The total number of teachers currently in the State's classrooms, by local school administrative unit, who have taken part in this initiative;
4) The change in the number of teachers available to schools since the program's inception;
5) The qualitative data from students, teachers, local school administrative unit personnel, university personnel, and community college personnel as to the impact of this initiative on our State's teaching pool; and
6) An explanation of the expenditures and collaborative programs between the North Carolina Community College System and The University of North Carolina, including recommendations for improvement.

The North Carolina Community College System (NCCCS) is dedicated to providing high-quality, easily accessible educational opportunities that encourage and support student success. In keeping 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 needed infrastructure.

Courses and Programs

1) The courses and programs within the 2+2 E-Learning Initiative

Teacher Education

One of the focal points for this initiative is to address the critical shortage of teachers in North Carolina. One way to address this shortage is to make the courses more accessible to students by creating online content for the community colleges through the Virtual Learning Community (VLC), which provides a collection of online courses to the 58 community colleges. By developing online courses for the pre-major degrees, we can provide access to students who might not otherwise have time to attend college in the traditional method of face to face instruction. The two systems (NCCCS and UNC) initially identified five pre-education programs under the North Carolina Comprehensive Articulation Agreement (CAA), whereby students may begin their education at a community college with an associate degree then transfer to a university to complete a bachelor's degree. During the first three years of the 2+2 Initiative, VLC centers were funded to develop selected courses for the following degrees.

Associate in Arts/Elementary Education (*totally online*)
Associate in Arts/Middle Grades Education and Special Education (*totally online*)
Associate in Science/Chemistry and Chemistry Education *(will be totally online by June 2009)*
Associate in Science/Biology and Biology Education *(will be totally online by June 2009)*
Associate in Science/Mathematics Education *(will be totally online by June 2009)*

As the targeted online education degrees are completed, the focus of course and program development will expand to address critical needs in North Carolina, including allied health and nursing, engineering, and workforce development areas.

After reviewing the online courses required for transfer to the university system to complete an education degree, a target list of courses and programs was developed. This list has guided system-wide course development for the past three years. By combining 2 + 2 E-Learning Initiative funds and other state appropriations for distance learning into a focused course development plan, all five Associate degree programs highlighted in this report will be completed by June 2009. Students who receive these online associate degrees must transfer to a college or university to complete the last two years of their bachelor's degree in education.

Delivering courses online presents specific challenges in certain program areas such as science and mathematics. With the aim of addressing these particular challenges, research on content-specific pedagogy was commissioned in order to analyze programs or software to deal with specific barriers to offering online math or science courses and their respective labs. In order to foster student engagement, additional online educational tools were required. Resources from the

2+2 Initiative have been used to fund a variety of educational tools, including the Math Pedagogy Project, Science Pedagogy Project, Virtual Microscope, Late Nite Labs Online Chemistry Lab Simulations, Late Nite Labs Online Biology Lab Simulations, and SAS inSchool Curriculum Pathways.

LEARN NC led the development process for creating resources for content-specific pedagogy in the online environment. These resources provide insight into the specifics of teaching a particular discipline in an online course. The initial project was for mathematics pedagogy and the current project is concerned with the development of science pedagogy. The resources are designed for current and future online math and science instructors at the post-secondary level and the results of the studies will later be published to a website.

With the help of 2 + 2 Initiative funds, the NCCCS was able to invest in online chemistry simulations developed by Late Night Labs. These laboratory simulations were included in the science courses that were developed by 2+2 Initiative funds in 2007-2008. In 2008, responding to the need for more online laboratory experiences, the NCCCS agreed to participate in a biology simulation pilot program with Late Nite Labs. Five online science instructors from five different colleges in the system are piloting newly developed biology simulations in BIO 111 and BIO 112 courses. Student and faculty assessments will be completed at the end of the Fall 2008 and Spring 2009 semesters. If the assessments are positive, the biology simulations will be offered to all colleges in the system during the Fall 2009 semester.

The purchase of a system-wide license for the Virtual Microscope software further enhanced students' online science experiences. The Virtual Microscope provides a cost effective way for students to experience state-of-the-art microscopy by viewing images created with research quality microscopes and camera systems. The Virtual Microscope mimics physical functionality of a real microscope and requires students to follow traditional laboratory process and protocol. The high-resolution biological specimens imaged for the program lucidly illustrate fundamental biological principles. The program is web-deliverable and can also be downloaded to college computers in classrooms and PC labs. Online courses developed by funds from the 2+2 Initiative have included activities using Virtual Microscope, Late Nite Labs, and SAS inSchool Curriculum Pathways.

Professional Development

NC-ACCESS (North Carolina Achieving Community College Excellence in Services to Students) is an online resource dedicated to developing and providing professional development resources to student development personnel throughout the community college system. The mission of NC-ACCESS is "to provide relevant practical training and enhance the unique skills of the professional staff that help facilitate the success of students in North Carolina's community colleges." Funds were used to expand the website by creating a Toolkit for New Student Development Administrators that includes information on the following topics: Legal Issues, Financial Aid, Basics of Counseling, Customer Service, Crisis Management, Records Management, and includes a detailed glossary of frequently used terms. Other resource topics added to the site included Registration and Advising, a new Best Practices section, Aspects of Counseling—Academic and Personal, Student Organizations, and Service Learning.

The original vision for NC-ACCESS was developed by drawing upon the experience and expertise of the Associate Director of Student Development Services, and the NC-ACCESS

Advisory Board composed of representatives from individual community colleges. This group worked both in meetings and by email and telephone conferences to meet the expressed needs of the student development services personnel across the state. Online surveys and focus groups at conferences were used to solicit input and recommendations from the targeted audience. This data was then used by contractors from CORD (Center for Occupational Research and Development) to modify the website.

Infrastructure

The third focal point for 2+2 Initiative funds is the infrastructure to support the teacher education and professional development initiatives. The NCCCS is committed to partnering with K-12 and university system in accordance with the NC e-Learning Commission recommendations. Moreover, the NCCCS is committed to support our 58 community colleges in providing a functional network providing access to cost-effective learning technology assets such that all community college students will have the same robust learning tools. To that end, the NCCCS offers the following set of objectives, structure, and alignment of funded services that collectively describe a strategy for integrating learning technology infrastructure across the System: Establish robust/uniform learning/teaching tools and resources state-wide; connect and integrate NCCCS with K-12 and UNC; realize economies-of-scale in all investments of new public allocations; reduce duplication of development costs, networking, and effort; establish a culture of collaboration; adopt an alignment strategy – process of migration to instructional technology solutions that are standards-based, scalable, and open source or licensed via aggregate FTE/enrollment basis; and provide a menu of learning/teaching/sharing resources via an integrated functionality concept.

Balanced and Integrated Services on a System Level

Broadband connectivity

- Expanding NCCCS data network
- Improved connectivity in local service areas
- Accommodating existing & emerging regional fiber networks
- Access to state backbone

Learning and teaching content

- Capacity to develop and deliver digital learning content (VLC courses & Learning objects)
- Use of commercial learning content (SAS Curriculum Pathways)
- Use of STEM supplements (Late Nite Labs)

Delivery vehicles

- Course management system (Blackboard and Moodle) to conduct online teaching & learning
- Learning object repository for cataloging, accessing, acquiring and sharing content
- Collaboration tools – webinar and communication resources (Elluminate)

Support services

- Online help desk (students)
- Professional development (VLC and NC-NET)

Collaboration

- Establish best possible planning, support & infrastructure
- Realize economies of scale
- Insure proper spending of public allocations

Quantitative Data Concerning Teachers

2) The total number of prospective teachers that have taken or are taking part in this initiative to date broken down by the current academic period and each of the previous academic periods since the program's inception;
3) The total number of teachers currently in the State's classrooms, by local school administrative unit, who have taken part in this initiative;
4) The change in the number of teachers available to schools since the program's inception;

NCCCS does not have access to some of the data concerning the impact 2+2 Initiatives on the pool of public teachers. The total number of teachers currently in the State's classrooms, by local school administrative unit, who have taken part in this initiative, will need to be provided by the Department of Public Instruction (DPI) at a later date. The change in the number of teachers available to schools since the program's inception will also need to be provided by DPI. This information can be compiled for future legislative reports.

Another limitation concerning data on education programs is the fact that NCCCS only offers the first two years of any education degree program. Degrees for public school teachers require a bachelor's degree and students are not tracked by NCCCS to the institution in which they complete the remaining two years of the degree. The initial courses developed by the 2+2 Initiative were first available in June 2008. Many students require more than two years to complete an associate degree and more than four years to complete a bachelor's degree. If the student is part-time it takes a great deal longer. Therefore, data concerning the impact of 2+2 on the teacher pool will not be available for several years.

The total number of students who have graduated from community colleges with an associate degree in an educational area in the past three academic years is 3,635. The annual figures are represented in Figure 1 below. The number of prospective teachers that have taken or are taking part in education degree programs at the community colleges to date, broken down by the current academic period and each of the previous academic periods since the 2+2 program's inception, is represented in Figure 2. The total number of students enrolled in the teacher education articulation programs has increased by 13% from 2005 to 2007. Data for the fiscal year ending Summer 2008 is not available at this time, but should be available by Spring 2009.

Figure 1: Students Graduated with Education Associates Degrees

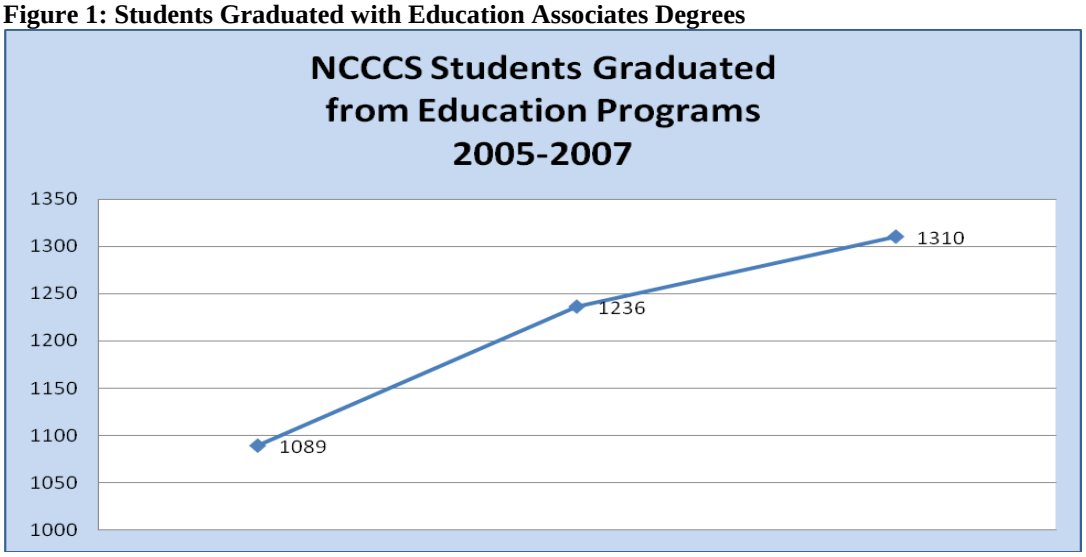
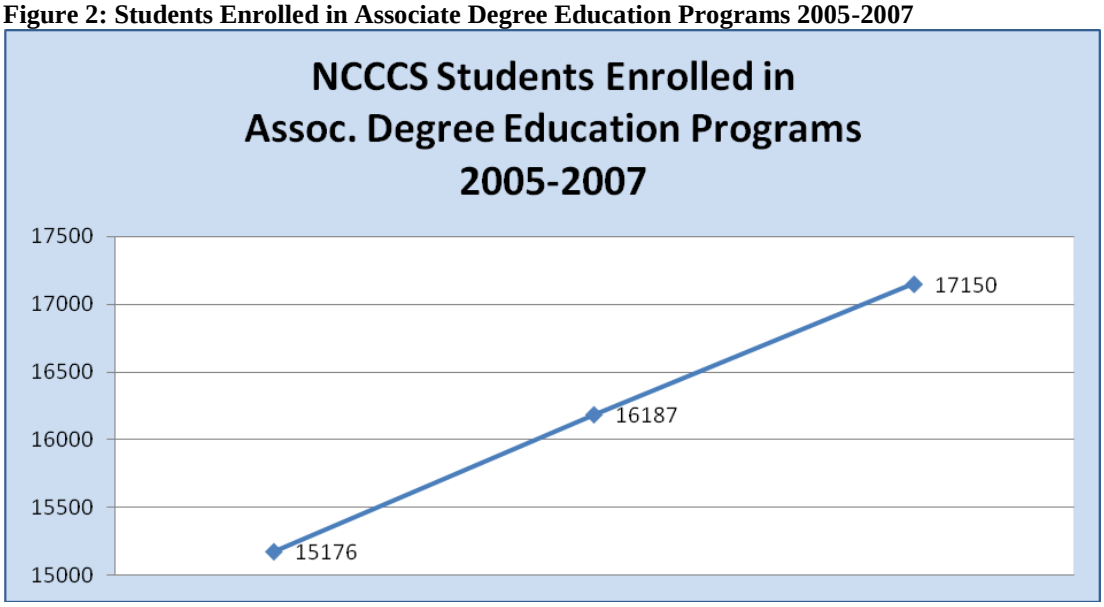


Figure 2: Students Enrolled in Associate Degree Education Programs 2005-2007



Qualitative Data Concerning Teachers

5) The qualitative data from students, teachers, local school administrative unit personnel, university personnel, and community college personnel as to the impact of this initiative on our State's teaching pool;

While qualitative data about the impact of 2+2 funds on the teacher education pool is not available, quantitative data is available with limitations. One limitation is the fact that the student information system for NCCCS does not track the delivery of required courses in a program and student transcripts do not indicate the delivery method of the credits received by the students. However, quantitative data on course enrollments for all distance education courses is contained in Figures 3 and 4, showing a significant increase in total online enrollments over several years.

Figure 3: DL Curriculum Enrollment 1998-2007

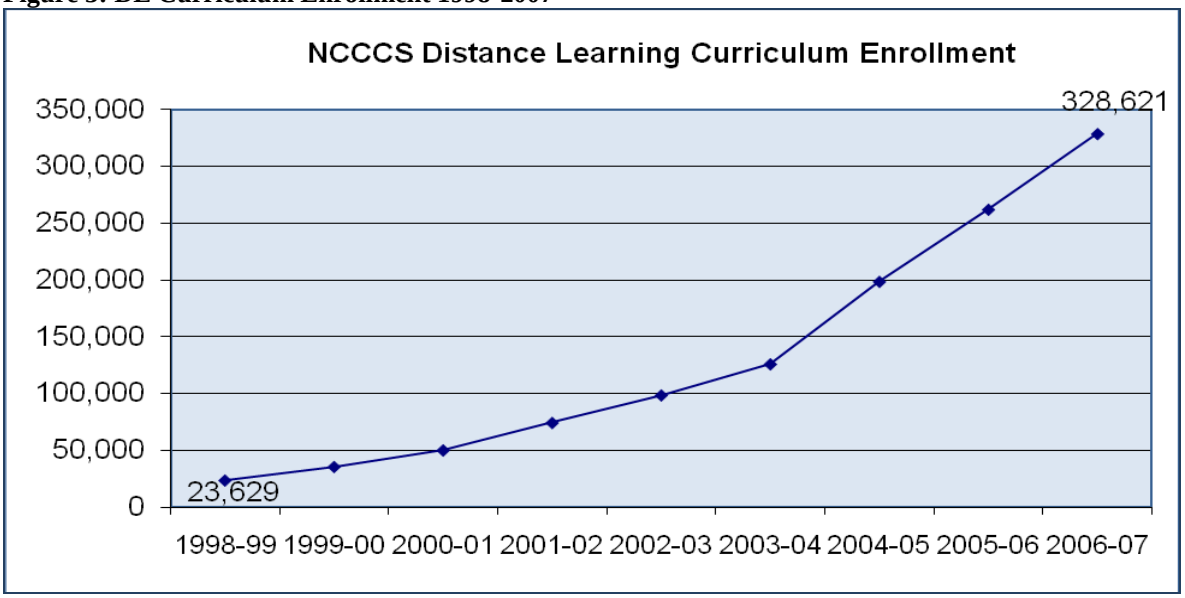
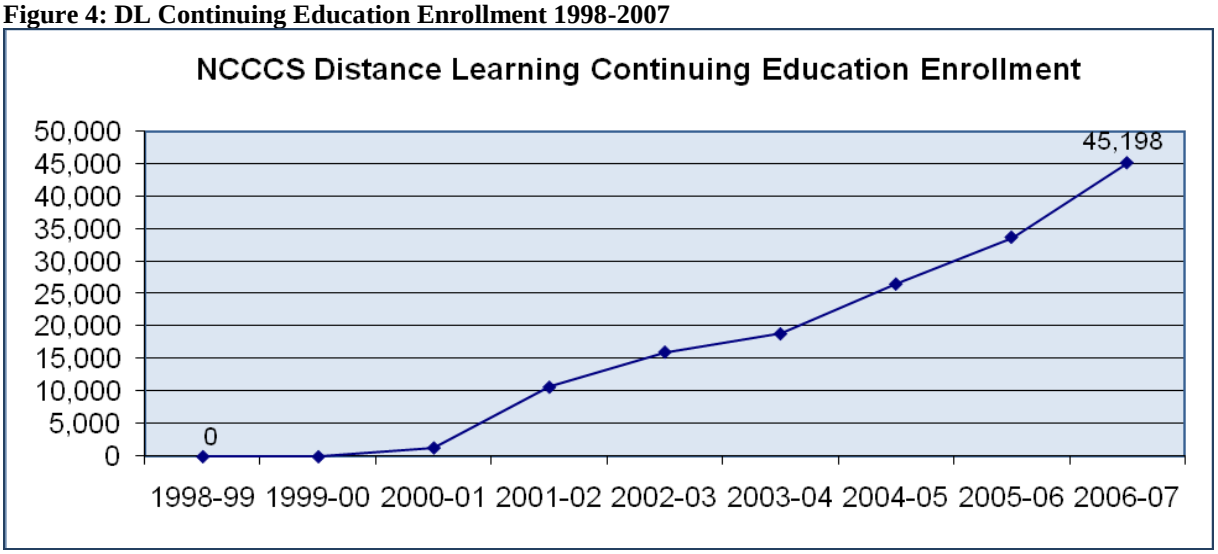


Figure 4: DL Continuing Education Enrollment 1998-2007



Expenditures and Collaborative Programs

6) An explanation of the expenditures and collaborative programs between the North Carolina Community College System and The University of North Carolina, including recommendations for improvement.

The delivery methods of the courses, the course content, supplemental learning activities, and support for faculty were the focus of the 2+2 Initiative funds for 2007-2008. Initiatives were chosen that would have the greatest impact on distance education for the community college system. Expenditures from 2+2 Initiative funds include the projects listed in Figure 5. The explanations of the various projects are provided in Appendix B.

Figure 5: 2+2 Expenditures for Fiscal Year 2007-2008

Educational Resource	**2007-2008**
Course Development Centers	147,521.46
Science Pedagogy	40,000.00
Late Nite Labs Chemistry	58,909.00
Late Nite Labs Biology	15,000.00
Virtual Microscope	50,000.00
SAS inSchool Curriculum Pathways	67,000.00
CORD/NC-NET	120,000.00
NCLOR (includes ITS hosting, software licenses, training, travel, project mgmt. services, etc.)	306,297.42
SREB SCORE	20,000.00
ITS Elluminate	25,000.00
Remote Learner	41,000.00
OSC Moodle Pilot	170,000.00
LearnNC CMS hosting	25,700.00

Teacher Education

The course development center for 2007-2008 focused on science and mathematics courses. The center developed six courses and their respective labs, which are required in several of the education associates degree programs. These courses were made available to the community colleges in June 2008. Course developers from the community colleges, state universities, and private universities were used in the development of the science and mathematics courses.

The math and science pedagogy projects brought together math and science specialists with previous experience in online teaching and learning. Both of these projects included university and community college faculty, as well as instructional designers from LEARN NC and NCCCS. During the initial math pilot, a work group identified barriers to online math pedagogy, established a timeline for the development of resources, and reviewed the final product before presenting the resources. The science pedagogy group is following the same process for science resources. The science resource format will take both the form of a web-based series of articles as well as printable .pdf files to facilitate off-line reading. The science project will conclude by the end of November 2008.

The success of the Late Nite Labs simulation software is substantiated by the increase in use by college faculty in online, hybrid, and even traditional courses. Figure 6 shows the comparison of

the laboratory simulations used in traditional face to face courses, hybrid courses, and completely online courses. The demand for Late Nite Labs online simulations has more than doubled in one year. Figure 7 shows that in 2007, 594 students used Late Nite Labs in CHM 090, CHM 094, CHM 131 and 131A, CHM 151 and CHM 152. In 2008, a total of 1308 students have used Late Nite Labs, representing an increase of 120% from the previous year. From 2007 through the Fall Semester 2008, 1,902 students have used Late Nite Labs in community college courses (See Appendix A).

Figure 6: Late Nite Labs Delivery Methods 2007 to 2008

Delivery Method Used for Late Nite Labs	
Online	989
Hybrid	301
Face to Face	509

Figure 7: Student Use of Late Nite Labs 2007-2008

Student Use of Late Nite Labs	
Spring 07	50
Summer 07	53
Fall 07	491
Spring 08	585
Summer 08	61
Fall 08	662

The addition of the science courses with the accompanying labs has provided a missing link enabling students to complete online courses that require a lab component. Because of the success of the online chemistry labs, the NCCCS has already begun to receive requests for the online biology lab simulations. Late Nite Labs Online Biology Lab Simulations will be available for system-wide use by Fall 2009.

The Virtual Microscope software was distributed on compact disc to the 58 community colleges in Spring 2008. This resource is being used in science courses and other related fields of study. Data about the use of this product is not available at this time.

NCCCS is now in the third year of a three-year contract for SAS inSchool Curriculum Pathways. Curriculum Pathways are high-end commercially prepared and copyrighted learning objects available to a wide array of community college students in areas of science, math, history, English/literature, and Spanish. These resources are available with a minimum of faculty training. These learning objects allow faculty to enhance either online learning or face to face courses. Use of Curriculum Pathways is steadily increasing.

Professional Development

Registration and Advising Procedures were the focus for this year's activities. A survey conducted by CORD received responses from 31 of the 58 community colleges (response rate of 53.4 percent). The results of the survey were shared at a joint deans meeting in April 2008. Best practices and challenges in both areas were identified and published.

Feedback from college personnel has been positive. One college has begun using the website to conduct training for new employees. The site has been described as a great resource with all needed information being located on one site and easy to navigate. During fiscal year 2007-08,

the site received a total of 143,738 hits during 5,217 unique visits, as shown in Figure 8. Retention techniques focusing on at-risk students, mentoring, teaching, and advising were especially popular. Considerable interest in best practices developed by Central Piedmont Community College, Edgecombe Community College, Southeastern Community College, and Cape Fear Community College was also demonstrated. The newsletters and information on appreciative inquiry received frequent hits as well.

Figure 8: NC ACCESS Data

NC-ACCESS.info Summary by Month										
Month	Daily Avg				Monthly Totals					
	Hits	Files	Pages	Visits	Sites	KBytes	Visits	Pages	Files	Hits
Jul 2008	396	312	62	24	714	999666	765	1928	9691	12287
Jun 2008	304	246	41	21	735	414424	640	1247	7391	9121
May 2008	965	894	691	22	893	571983	705	21443	27739	29924
Apr 2008	946	838	607	28	999	558607	858	18221	25141	28404
Mar 2008	653	599	404	24	876	461972	755	12546	18577	20264
Feb 2008	294	242	50	14	582	301983	414	1454	7022	8547
Jan 2008	244	211	50	10	477	279752	338	1566	6558	7580
Dec 2007	251	228	104	9	264	189166	279	3242	7079	7801
Nov 2007	223	164	16	6	254	116328	208	506	4926	6694
Oct 2007	307	236	23	12	340	218612	376	725	7329	9538
Sep 2007	222	171	15	7	227	159477	215	467	5137	6683
Aug 2007	150	124	9	5	226	119639	179	282	3861	4652
July 2007	146	120	15	8	279	70030	250	469	3727	4530

Infrastructure

NCLOR. The North Carolina Learning Object Repository (NCLOR) was initially designed as a System-wide repository providing the capacity to catalogue and store, search, access, and utilize digitized learning/teaching content. Learning objects are generally defined as (1) digital content assets in the form of files or collections of files that typically have a wide-range of learning/teaching applications and (2) self-contained comprehensive learning modules that address selected learning competencies in a specific course or program. Learning objects are sharable, reusable, standards based, and accessible by the vast majority of learning applications. Learning modules are generally larger, more complete learning objects. The definitions are becoming interchangeable. The NCLOR complies with SCORM standards; is scalable to serve the entire PreK-20 educational community; and has a contract provision to include all NC public educational entities in an aggregate enrollment license formula.

Creation of the state-wide NCLOR is recommendation #9 of the NC e-Learning Commission approved by the NC Education Cabinet and the State Board of Education in January 2005. The NCLOR currently under development is supported by NCCCS 2+2 funding. Development of the NCLOR has taken place over the last 2.5 years, an intensive collaboration of a Steering Committee composed of administrators, faculty, and support specialists from NCCCS and UNC

central offices and institutions. Volunteers from the NC Department of Public Instruction, NC Virtual Public School, and the NC Association of Independent Colleges and Universities have also participated.

Southern Regional Education Board (SREB) Sharable Content Object Repositories for Education (SCORE) Initiative. This Board is responsible for setting quality standards and establishing resources for reducing costs and duplication of efforts for learning object repositories in the southeast. Membership in the SREB SCORE Initiative will enable the NCCCS to have a voice in the future work undertaken by this Board.

Elluminate collaboration software. Elluminate is a webinar/collaboration tool effective for real time desktop sharing applications supporting help desk services and working groups. It can be used in tandem with conference calls or for voice and video capabilities to provide effective communications with reduced long distance costs.

Remote Learner. NCCCS has contracted with Remote Learner for hosting the NCCCS/UNC Moodle Users Group Open Source Collaborative project for developing a viable alternative to Blackboard course management system. Moodle is an open source course management system and has been widely adopted by individual colleges throughout the NCCCS.

Open Source Collaborative Moodle Assessment. Blackboard and Moodle are both highly regarded online (enterprise) course management systems (e-CMS). Blackboard is a commercial, proprietary e-CMS used in the majority of both NCCCS and UNC institutions. Moodle is an open source e-CMS meaning that the "code" is freely available thus potentially saving public institutions the expense of license fees. The joint NCCCS/UNC Open Source Collaborative is coordinating investigations of Moodle to determine the viability of Moodle as an alternative to Blackboard.

LEARN NC. A partnership between NCCCS and LEARN NC was established two years ago to provide hosting services for the Virtual Learning Community's Blackboard instance.

Note: Descriptions, audience to be served, costs, and status reports of all 2+2 e-learning infrastructure components are found in Appendix B.

Recommendations

While the NCCCS has made progress in achieving the goals and objectives of the 2+2 Initiative, the system has recommendations for future achievements necessary to meet critical needs for distance education.

It is recommended:

- That the math and science pedagogy projects be published as resources to the NC-NET website as well as the VLC/NCLOR to provide guidance to online instructors in these specific program areas.
- That a site be developed to make the math and science pedagogy resources available to teachers K-20.
- That course management systems be assessed as to the most feasible and cost effective delivery of online courses. The analysis of data collected from this assessment will guide the system for future contracts.

- That additional PIN numbers be purchased for Late Nite Labs software, due to the increased usage of the software.
- That the NCCCS participate in a pilot development project for microbiology labs using Late Nite Labs.
- That the NCCCS participate in a pilot project using College Anywhere learning objects as well as other vendor generated repositories via harvesting or federation with NCLOR.
- That the NCCCS continue to research online software for system-wide use and pedagogically sound teaching principles for online courses.
- That as education programs are completed as fully online degree programs, other areas of critical needs should be addressed such as nursing, engineering, and technology.
- That a STEM center be established for 2008-2009 to develop the courses in Figure 9, which will complete six additional online education degree programs.
- The NC-ACCESS website should be maintained and updated for the use of student development personnel so that they can aid students at their colleges in achieving success.

In October 2008, the NCCCS will propose to the State Board of Community Colleges the awarding of a STEM Course Development Center in the amount of $150,000 per year. The STEM Center will be tasked with developing the following courses and their respective lab components in 2008-2009 and 2009-2010:

Figure 9: STEM Course Development Center

Course Number	**Course Name**	**Class-Lab-Credit**
Year 1 Courses		
CHM 251	Organic Chemistry I	3-3-4
CHM 252	Organic Chemistry II	3-3-4
PHY 152	College Physics II	3-2-4
PHY 252	General Physics II	3-3-4
MAT 280	Linear Algebra	3-0-3
BIO 175	General Microbiology	2-2-3
BIO 275	Microbiology	3-3-4
Year 2 Courses		
CSC 120	Computing Fundamentals I	3-2-4
DFT 170	Engineering Graphics	2-2-3
EGR 220	Engineering Statics	3-0-3
BIO 168	Anatomy & Physiology I	3-3-4
BIO 169	Anatomy & Physiology II	3-3-4

***Note:** Chemistry and biology labs will be developed using Late Nite Labs software.

The development of these courses will provide the Associate in Science/Chemistry and Chemistry Education, Associate in Science/Biology and Biology Education, and the Associate in Science/Mathematics and Mathematics Education degrees to be offered totally online by the end of June 2009.

NCCCS has made great strides in meeting the goals of the 2+2 Initiative, as they address the critical need for teachers in our state. Our future objectives are to continue to bolster this goal as well as expand the scope to include allied health, nursing, and engineering as the next focal points for these funds.

Appendices

Appendix A

LATE NITE LABS SOFTWARE USAGE
FALL 2007 – FALL 2008

COLLEGE	SEMESTER	DELIVERY METHOD	STUDENT PINS
Carteret Community College	Fall 2007	CHM 131 Face to Face CHM 151 Face to Face	61
Central Carolina Community College	Fall 2007	CHM 131 Online CHM 151 Face to Face CHM 152 Face to Face CHM 152 Online	115
Craven Community College	Fall 2007	CHM 151 Hybrid	70
Durham Technical Community College	Fall 2007	CHM 151 Hybrid	40
Isothermal Community College	Fall 2007	CHM 131 Face-to-Face CHM 151 Face-to-Face	65
Johnston Community College	Fall 2007	CHM 131 Online CHM 151 Online	70
Roanoke-Chowan Community College	Fall 2007	CHM 131 Online	40
Roanoke-Chowan Community College	Fall 2007	CHM 090 Online	13
Roanoke-Chowan Community College	Fall 2007	CHM 094 Online	17
Gaston College	Spring 2008	CHM 131, CHM 131A Hybrid	24
Durham Technical College Community College	Spring 2008	CHM 152 Hybrid	22
Carteret Community College	Spring 2008	CHM 131 & 151 Face to Face	70
Roanoke-Chowan Community College	Spring 2008	CHM 090 Online	50
Central Carolina Community College	Spring 2008	CHM 131 & 152 Online	100
Asheville-Buncombe Community College	Spring 2008	Honors CHM 152 Face to Face	8
Johnston Community College	Spring 2008	CHM 131 & 152 Online	160
Isothermal Community College	Spring 2008	CHM 152 Face to Face	24
Isothermal Community College	Spring 2008	CHM 131 & 131A Face to Face	35
Western Piedmont Community College	Spring 2008	CHM 131 & 131A Hybrid	30
Craven Community College	Spring 2008	CHM 151 Face to Face	35
Rockingham Community College	Spring 2008	CHM 131 Face to Face	12
Davidson County Community College	Spring 2008	CHM 131 Hybrid	15

COLLEGE	SEMESTER	DELIVERY METHOD	STUDENT PINS
Central Carolina Community College	Summer 2008	CHM 151 Online	51
Coastal Carolina Community College	Summer 2008	CHM 090 Online	10
Central Carolina Community College	Fall 2008	CHM 151 Online	49
South Piedmont Community College	Fall 2008	CHM 151 Online	25
Carteret Community College	Fall 2008	CHM 131 Hybrid	50
Carteret Community College	Fall 2008	CHM 151 Hybrid	25
Mitchell Community College	Fall 2008	CHM 131A Online	22
Mitchell Community College	Fall 2008	CHM 131A Face to Face	22
Mitchell Community College	Fall 2008	CHM 151 Face to Face	22
Coastal Carolina College	Fall 2008	CHM 090 Online	75
Durham Technical Community College	Fall 2008	CHM 151 Online	30
Wake Technical Community College	Fall 2008	CHM 131 & 151 Online	100
Craven Community College	Fall 2008	CHM151 Face to Face	70
Johnston Community College	Fall 2008	CHM 131A & 151 Online	70
Central Carolina Community College	Fall 2008	CHM 152 Online	24
Johnston Community College	Fall 2008	CHM 131 & 151 Online	10
South Piedmont Community College	Fall 2008	CHM 151 Online	15
Wayne Community College	Fall 2008	CHM 151 Hybrid	25
Craven Community College	Fall 2008	CHM 131 Face to Face	28
		(2007-2008) TOTAL	**1799**
		(2006-2007) TOTAL	**594**

Appendix B

2007-2008 Expenditures for 2+2 Initiative

Student, Teaching, and Learning Resources Implemented by the NCCCS

Educational Resource: North Carolina Learning Object Repository Resources for NCCCS - The Learning Edge (vendor), Hosted by ITS, NCCCS LOR Hardware

Description: Learning Object Repository technology provides a "library" of digitized learning content termed learning objects in which these objects can be catalogued, searched, shared, and modified. Learning Object Repository technology promotes sharing of high quality resources and drastically reduces costs of duplication. The 2+2 funds will be used to establish the North Carolina Learning Object Repository. Therefore, university and community college faculty, administrators, and support staff will collaborate in all phases of planning, Request for Proposal development, evaluation of vendor proposals, implementation, and expansion of 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.

Audience: Faculty and students of NCCCS and UNC

Cost: $267,688.28	software license, travel and training
35,765.20	hosting and servers
2,843.94	ITS project management
$306,297.42	

Status: The North Carolina Learning Object Repository (NCLOR) is currently in pilot implementation phase which includes (1) completion of metadata, workflows, and user interface modifications specified by the NCLOR Steering Committee and (2) phased-in roll-out of LOR services to community colleges and universities. A full-time NCLOR Director was hired in July 2008 and a second support position is expected to be filled late September.

In July 2008 the State Board of Community Colleges approved second year contracts with (1) The Learning Edge (vendor) to provide Equella software and professional services and (2) the State Information Technology Service (ITS) to provide hosting services.

Educational Resource: Southern Regional Education Board **(**SREB) Sharable Content Object Repositories for Education (SCORE) Initiative Charter Membership

Description: The Southern Regional Education Board Sharable Content Object Repositories for Education Initiative is the best organized and longest running regional effort to address adaptation of a Learning Object Repository to meet educational needs in the U.S. in a cost-wise fashion that enables all Southern Regional Education Board affiliates to reduce overall costs and duplication of effort. To this end, the Sharable Content Object Repositories for Education Initiative addresses the following:

- Quality assurance of e-learning resources based on standards and learning methodology
- Instructor qualifications, roles, responsibilities, and accountability
- Intelligent development of sharable learning resources based on areas of greatest need and utilization
- Federated standards-based Learning Object Repository protocol
    - Standard regional metadata development and deployment
    - Standard regional workflows development and deployment
    - Sharable Content Object Reference Model (SCORM) compliant Sharable Learning Object (SLO) development and deployment

Membership on the Sharable Content Object Repositories for Education Initiative Board will enable the NCCCS to have a voice in the future work undertaken by this Board.

SCORE Training was provided by an SREB representative at the NCCCS Office for NCCCS faculty, administrators and UNC faculty and administrators.

Audience: NCCCS faculty and students

Cost: $20,000

Status: Active member

Educational Resource*:* Information Technology Services (ITS) Elluminate Collaboration Service

Description: Elluminate is a web-based collaboration tool that is effective for real time desktop sharing applications. It can be used in tandem with conference calls or for voice and video capabilities to provide effective communications with reduced long distance costs. Collaboration is important to meet the needs of students and faculty from diverse communities and programs. Elluminate is used for professional development by faculty of NCCCS.

Audience: Used for professional development for faculty and staff of NCCCS and to support Virtual Learning Community development centers

Cost: $25,000

Status: The NCCCS currently contracts with Information Technology Services (ITS) for 50 Elluminate "seats." (*Costs for 2008-2009 will decrease to $10,000 in a collaborative agreement with ITS which will license 65 seats)*

Educational Resource: Center for Occupational Research & Development (CORD)

Description: The tasks for year three included significant expansion of the web portal to include, but not be limited to, a best practices section on registration and advising, service learning, student organizations, and aspects of counseling; development of a toolkit for new student development administrators; development of a monthly e-newsletter promoting new resources;

development of promotional packets for colleges promoting new resources and events planned for 2007-2008 for distribution to all student development personnel; support of the NC-ACCESS Advisory Board; continual maintenance and updating of the website content; identification of best methods for long-term professional development support for student development personnel, etc.

Audience: Faculty and Students of NCCCS

Cost: $120,000

Status: Completed

Educational Resource*:* Science Pedagogy Project – Collaboration between NCCCS and LEARN NC

Description: LEARN NC led the development process for creating resources for content-specific pedagogy in the online environment. The project focus is science pedagogy. This project provides a model for the development of future content-specific resource development. Resources are being designed for current and future online science instructors at the post – secondary level.

Audience: Faculty of NCCCS and UNC

Cost: $40,000

Status: Project to be completed in November 2008.

Educational Resource: Math and Science Course Development Center

Description: The State Board of Community Colleges awarded Southeastern Community College $150,000 to develop the following online math and science courses: BIO 145 – Ecology, CHM 151 – General Chemistry I, CHM 152 – General Chemistry II, MAT 285 - Differential Equations, PHY 151 – College Physics I, and PHY 251 – General Physics I. In addition, laboratory simulations were developed for all of these courses.

Audience: Faculty and students of NCCCS

Cost: $147,521.46

Status: Completed

Educational Resource: UNC Chapel Hill Course Management System Software Support (LEARN NC)

Description: LEARN NC, a program of the UNC-Chapel Hill School of Education will continue hosting Blackboard course management system software for the NCCCS Virtual Learning

Community. Service includes hardware, backups, upgrades, and maintenance. The Blackboard license will be paid for by NCCCS.

Audience: Faculty and students of NCCCS

Cost: $25,700 annual renewal

Status: LEARN NC continues to host Blackboard, the course management system for the community colleges.

Educational Resource: SAS inSchool Curriculum Pathways - Higher Education Learning Objects

Description: Curriculum Pathways are high-end commercially prepared and copyrighted learning objects available to a wide array of community college students in areas of science, math, history, English/literature, and Spanish. These resources are available with a minimum of faculty training. These learning objects allow faculty to enhance either online learning or face to face courses.

Audience: Students and faculty of NCCCS

Cost: $67,000 renewal of contract

Status: NCCCS is now in the third year of a three-year contract. Use of Curriculum Pathways is steadily increasing.

Educational Resource: Late Nite Labs - Online Chemistry Lab Simulations

Description: Late Nite Labs are online chemistry simulations that provide instructors with the capability to develop and customize high quality online chemistry laboratory simulations. This software provides students with the capability of completing these labs anytime, anywhere.

Audience: Students and faculty of NCCCS

Cost: $55,000 (first year perpetual license) to increase student licenses from 600 to 1200
3,909 partial year renewal license for 600 student licenses

Status: Demand for student licenses has more than doubled in one year. Five hundred ninety-four (594) of the licensed 600 student seats were used by community colleges in 2007. From the Fall Semester 2007 through the Fall Semester 2008, student seats increased from 594 to 1,799. Annual renewals of the student licenses are $6700/600 student licenses.

Educational Resource: Remote Learner

Description: Remote-Learner provides the North Carolina Community College System with system administration services, training for administrators and faculty, and hosting of Moodle

online courses. Moodle is an open source alternative to expensive proprietary online course management systems such as Blackboard and WebCT currently in use by the vast majority of community colleges and universities in North Carolina. Open source solutions require no license fee for operation of online learning software. Remote-Learner provides cost-effective high level administration and expertise in open source course management system technology. These resources collectively are termed the North Carolina Moodle Users Group (NCMUG): effectively coordinating research efforts of both community colleges and universities into a cohesive, collaborative group.

Audience: Community college distance learning faculty and administrators

Cost: $41,000

Status: The 14 community colleges participating in the North Carolina Open Source Collaborative Moodle Assessment were originally participants in the North Carolina Moodle Users Group (NCMUG). The NCMUG project, administrated and hosted by Remote Learner, included all hosting costs and faculty training required to launch Moodle courses. Two former North Carolina Moodle Users Group community colleges have established their own contracts with Remote Learner to expand online courses and services beyond the scope of the users group. NCMUG community colleges are now participating in the Open Source Collaborative Moodle Assessment.

Educational Resource: Open Source Collaborative: Moodle Assessment

Description: Moodle open source course management system has been adopted by three NCCCS institutions. An open source system allows for the use of the most effective course designs without the limits of a proprietary system. Success of the North Carolina Moodle Users Group and the interest of several UNC institutions prompted creation of the joint NCCCS/UNC Open Source Collaborative: Moodle Pilot. This pilot project will consolidate the efforts of NCCCS and UNC institutions as they explore options of less expensive and troublesome proprietary course management system solutions. The NCCCS staff has contracted with UNC General Administration to establish a central facility at which collaboration and experimentation can take place to enhance Moodle as an online learning platform, establish high quality faculty training and migration tools, and explore centralized, turn-key solutions for the higher education community in North Carolina.

Audience: Faculty and students of NCCCS and UNC

Cost: $170,000

Status: The State Board of Community Colleges has approved the Open Source Collaborative. NCCCS has contracted with UNC to provide system administration, training, migration tools, hosting services, and Datatel/Moodle dynamic compatibility.

Educational Resource: Science Learning Resources, Inc. - Virtual Microscope

Description: The Virtual Microscope provides a cost effective way for students to experience state-of-the-art microscopy by viewing images created with research quality microscopes and

camera systems. The Virtual Microscope mimics 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 lucidly illustrate fundamental biological principles. The program is both web-deliverable and can be downloaded to college computers in classrooms and PC labs.

Audience: NCCCS faculty and students

Cost: $50,000 for a perpetual license during year one; $12,500 for maintenance fees for an additional three years.

Status: Software was distributed to all 58 colleges for installation on their servers. This resource is being used in science courses and other related fields of study.

Educational Resource: Late Nite Labs Biology Simulation Pilot

Description: Late Nite Labs developed biology simulation software for Biology 111 and Biology 112 in collaboration with five instructors from five colleges in the North Carolina Community College System. The software enables students to complete laboratory simulations for courses delivered online, in hybrid, and traditional classroom settings. This software enables students to complete required biology courses necessary for completion of online teacher education degrees.

Audience: NCCCS faculty and students

Cost: $15,000 for the pilot program, from April 2008, through April 2009, 300 student licenses will be provided by Late Nite Labs at a rate of $50 per student license, for a total cost of $15,000. The software will be licensed for use by the community colleges in the same way that the Late Nite Labs chemistry simulation software is licensed.

Status: Five instructors teaching BIO 111 are using the new lab simulations in their courses Fall Semester 2008. These same instructors will use the newly developed simulations in their BIO 112 courses during the Spring Semester 2009.