The North Carolina Community College System and The University of North Carolina Joint Report on The UNC – NCCCS 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
North Carolina Community College System
NCCCS/UNC 2+2 E-Learning Initiative
Executive Summary

Pursuant to Session Law 2006-66, An Act to Modify the Current Operations and Capital Appropriation Act of 2005, section 9.1, the North Carolina Community College System Office and the University of North Carolina General Administration submits 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).

The System Office (SO) and the UNC General Administration (UNC-GA) have collaboratively identified four (4) areas to implement the 2+2 E-Learning initiative. Those areas are:

a. Teacher education
b. Professional development
c. Student tracking, and
d. Infrastructure

1. Courses and programs within the 2+2 E-Learning Initiative:

The two systems have identified college transfer pre-education programs/courses within the Virtual Learning Community of NCCCS that are now available to students pursuing a teaching major at the university under the North Carolina Comprehensive Articulation Agreement (CAA). They include:

a. Business Education and Marketing (A1010C)
b. Social Science Education (A1010M)
c. Communications (A1010O)
d. English Education (A1010F)
e. Associate In Arts (A10100)

Courses available within these majors include English, Literature, Fine Arts, History, Psychology, Social & Behavioral Sciences, Mathematics, and Computer Information Systems. NCCCS is pursuing the development of Chemistry and Physics courses with laboratory experiences to complete the offering of Elementary Education, Middle Grades, Special Education, and Art Education pre-education transfer programs.

2. Explanation of the expenditures and collaborative programs between NCCCS and UNC-GA:

In Session Law 2005-276, the NCCCS was authorized to expend $1 million of recurring funds for the NCCCS-UNC 2+2 E-Learning Initiative. Subsequently, the State Board of Community Colleges approved a contract for year one of a multi-year initiative to expand the North Carolina Network for Excellence in Teaching (NC-NET) to address the professional development needs of student development services college personnel who provide support services to online learners in the Initiative. Through an agreement with the Center for Occupational Research and Development (CORD) of Waco Texas, NCCCS accomplished the tasks of conducting the survey and focus groups to identify professional development needs of Student Development personnel. NCCCS and CORD are currently developing a clearinghouse/web portal for all NCCCS student

development services information as relates to the successful use of Blackboard/computer learning models within the Initiative. In addition, CORD designed self-paced modules on topics including Legal Issues, Financial Aid, and Customer Service to insure student success in the online environment.

The State Board additionally approved the expenditure of funds for the technology infrastructure required to successfully implement the initiative. Funds have been allocated for the purchase of presentation equipment for the North Carolina Information Highway (NCIH) classroom to facilitate multi-media presentations in videoconferencing classrooms. The State Board also approved allocation of funds for the purchase of 100 permanent licenses from authorGen for authorPOINT learning object development software. AuthorPOINT software converts MicroSoft PowerPoint slide shows into web-resources. The development of sharable learning objects promises a cost effective Learning Objects Repository in NCCCS that can be catalogued, accessed, shared, and upgraded on a common platform for collaboration among PreK-20 education systems.

<center>**Infrastructure**</center>

Infrastructure Overview
Utilization of 2+2 funding for System-wide distance learning solutions represents a cost-effective means to address our current and future teacher shortage. Solutions identified in this report establish the initial infrastructure required to update online courses, improve student resources, improve accessibility, and enhance learning opportunities for our education majors - or any target student population.

Collaboration with Colleagues at UNC-GA
Collaboration between the University of North Carolina (UNC) and the North Carolina Community College System (NCCCS) personnel regarding distance learning infrastructure has been ongoing since April 2005. Since that time representatives from the two Systems have been meeting each month to discuss ways to promote collaboration and resource sharing.

For the past two years NCCCS staff have presented sessions at the Teaching Learning Technology Collaborative Conference and UNC staff have presented at the Distance Learning Alliance Conference. Both Conferences have included panel discussions featuring representatives from UNC, NCCCS, and Department of Public Instruction (DPI). These sessions have focused on collaboration and seeking common solutions to current and future challenges to education in NC. For example, in recent weeks, NCCCS and UNC staff have participated in multiple webinars related to Learning Object Repository (LOR) technology. Both Systems have established LOR Steering Committees composed of faculty, library resources, support services, and administration. The first joint meeting of these Steering Committees occurred on July 11, 2006.

Joint NCCCS and UNC E-Learning Infrastructure Meetings
NCCCS and UNC representatives collaborated in several conference calls and two face-to-face meetings during 2005-06 to address issues specific to 2+2 teacher education goals and responsibilities. These meetings focused on e-learning infrastructure, database interoperability, and tracking issues. In the NCCCS and UNC planning sessions and subsequent meetings among NCCCS staff, infrastructure solutions were identified that would support any academic and program decisions reached in the future. These solutions were grouped in areas of: (1) communication and collaboration resources, (2) teaching and learning resources, and (3) support resources. Robust solutions were identified in each of these 3 areas that would support a wide array of academic and program needs. These solutions resulted in the following expenditures in the area of infrastructure during the 2005-2006 academic year.

<center>**Communication and Collaboration Resources**</center>

I.T.S. Elluminate collaboration service
- Description: Collaboration tools are very effective real time desktop sharing appliances. They can be used in tandem with conference calls or use voice and video capabilities to reduce long distance costs.
- Cost: $12,500 - 6 months of 25 seat licenses at $1,000 annual license per seat.
- Status: Available and funded by 2005-06 funds.

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NCIH Presentation Equipment
- Description: The first phase of the NCCCS NCIH room has been completed with upgraded videoconferencing equipment, monitors, and wiring. A second phase will include addition of a smart podium to enhance presentations.
- Cost: $4,168
- Status: $4,168 in outstanding encumbrances, 2005-06.

Teaching and Learning Resources

UNC Chapel Hill Course Management System Software Support (LEARN NC)
- Description: LEARN NC, a program of the UNC-Chapel Hill School of Education will host an installation of Blackboard for the NCCCS Virtual Learning Community. Service will include hardware, backups, upgrades, and maintenance. Blackboard license will be paid for by the NCCCS.
- Cost: $25,000
- Status: Service is available and funded by 2005-06 funds.

Learning Object Repository (LOR) resources for the NCCCS - HarvestRoad, MCNC Hosting Services, NCCCS LOR Hardware
- Description: LOR technology provides a "library" of digitized learning content termed learning objects in which these objects can be catalogued, searched, shared, and modified. LOR technology promotes sharing of resources and drastically reduces costs of duplication.
- Cost: $401,250 first year
- Status: The LOR initiative falls under Senate Bill 991 protocol and is in the process of gaining agency approval prior to submission to ITS and OSBM for their approvals. $401,250 unencumbered balance.

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.
- Cost: $60,000 first year license
- Status: A contract was signed between the NCCCS and SAS in July 2006. $60,000 unencumbered balance.

LateNiteLabs - online chemistry lab simulations
- Description: LateNiteLabs provides (1) instructors the capability of developing and customizing high quality online chemistry laboratory simulations and (2) students the capability of completing these labs anywhere, anytime. Emphasis is on providing the most realistic and best learning experience available.
- Cost: $55,000
- Status: Available and funded by 2005-06 funds.

Remote-learner.net - open source course management system
- Description: Moodle open source course management system is a highly respected alternative to expensive proprietary Course Management System (CMS) products such as Blackboard, used across the NCCCS. Remote-learner, Inc. will provide training, tech support, hosting services, and administration for an organized "trial" of Moodle. Resources and online courses developed in the trials will be made available at no costs to all NCCCS and UNC institutions. Five community college and one university "sites" have been awarded participation in the trials via a competitive Request for Proposal (RFP) process.
- Cost: $39,375
- Status: $39,375 in outstanding encumbrances, 2005-06.

Support Resources

Hardware to Update Community College Library in North Carolina/SirsiDynix (CCLINC/SIRSI) Consortium
- Description: The CCLINC/SIRSI Consortium provides e-catalogue and library services for 45 NCCCS institutions. In addition, SIRSI provides cataloguing resources for all community college libraries. This online service is a valuable resource for distance learners. The two live and test servers supporting the Consortium were 6 years old and needed to be replaced.
- Cost: $44,289
- Status: Available and funded by 2005-06 funds.

Learning Object Development Tool - AuthorPOINT software
- Description: AuthorPOINT is a learning object development software that adds video and/or audio to slide presentations. AuthorPOINT generates a highly compressed rich media presentation that takes up less file space and more easily accessed by students online.
- Cost: $12,500 for 100 licenses.
- Status: Available and funded by 2005-06 funds.

Professional Development

One of the greatest challenges for the North Carolina Community College System is the lack of sufficient funding for the professional development of faculty and student services staff to support online teaching, advising, financial aid, and counseling services. In order for the online teaching and learning process to be successful, it is essential that student services staff have competencies in the online process.

Collaboration with Colleagues at UNC-GA

Cooperation between the University of North Carolina (UNC) and the North Carolina Community College System (NCCCS) is the foundation for the joint electronic learning initiative. A team appointed to address professional development issues is composed of individuals from both institutions. This team met on December 12, 2005, at UNC-GA to share ideas on enhancing current professional development opportunities available to faculty and staff

of both systems. UNC-GA staff discussed MERLOT (Multimedia Educational Resources for Learning and Online Teaching) and LEARN-NC while Community College System staff discussed North Carolina Network for Excellence in Teaching (NC-NET).

NC-NET Expansion

Expansion of NC-NET to include student development services is a multi-year initiative to develop and provide professional development programs to student development personnel throughout the community college system. Partnering with CORD (Center for Occupational Research and Development) of Waco, Texas, NC-NET began to extend professional development support to this key constituency. During Year One (November 2005 through June 2006) the amount of $110,000 was spent to conduct a needs assessments; create an infrastructure; and begin content development.

The Needs Assessment

From March 10 – April 13, 2006, CORD conducted a survey to identify professional development needs and interests of Student Development personnel. Issues addressed included:
- Interest in professional development/willingness and/or time to participate
- Topics of interest
- Delivery formats desired
- High-priority issues
- Past professional development experience
- Barriers to participation
- Existence of locally-developed resources for sharing statewide

Survey Participants

Over 1,000 student services personnel including Student Services Officers, Counselors, Registrars, Financial Aid Officers, and Admissions Officers were notified via email of their opportunity to participate in the survey.

Four-hundred-and-fifty Student Development personnel completed the survey—129 Director/Coordinators, 110 Counselors, 97 Clerical staff, 34 Registrars, 27 Technicians & Specialists, 25 Chief Student Development Administrators (including Deans, VPs and Associate VPs), and 28 Other staff (Associates, Evaluators, Officers, and Assistant Officers). When asked to identify the region in which their college is located, 49.3% selected the Central region, 25.1% the Western region, and 24.4% the Eastern region of the state.

Summary of Findings

- The professional development topics eliciting the most interest—as indicated by overall percentage of responses—are *Retention, Academic Advising, Evaluation/Assessment, Admissions, Registration, Transition from High School to College*, and *Orientation*. In other words, student services personnel are most interested in activities related to student academic services and student entry and exit.

- Within each of the seven broad professional development categories, Student Development personnel indicated that:

- o *Admissions* topics are most important within the student entry and exit category
- o *Career Counseling* topics are most important within the student career services category
- o *Retention* topics are most important within the student academic services category
- o Topics related to the *Transition from High School to College* are the most important within the student personal services category
- o *Diversity and Inclusivity* are the most important topics related to services targeted at reaching specific student groups
- o Topics related to *Learning Disabilities* are the most important within the student disability category

- The professional development topics deemed most important by each segment of Student Development personnel, as indicated by the number of responses, are as follows:
  - o Counselors ranked *Academic Advising* highest
  - o Registrars ranked *Registration* and *Student Records* equally high
  - o Clerical staff ranked *Admissions* highest
  - o Chief Student Development Administrators ranked *Retention* and *Student Disciplinary Issues* equally high
  - o Directors/Coordinators ranked *Retention* highest
  - o Technicians ranked *Admissions* and *Registration* equally high.
  - o Other Student Development Staff (Associates, Evaluators, Officers, and Assistant Officers) ranked *Admissions*, *Registration*, and *Student Records* equally high.

- Approximately 87% of respondents have received on-the-job training for their current position; 64% completed related college coursework; 44% have participated in staff development workshops.

- The top three barriers to participation in staff development are "lack of awareness about activities," "lack of funds," and "location of activities."

- The majority of Student Development personnel (88 %) prefer receiving information about upcoming staff development activities via email.

Creating an Infrastructure

Other work during Year 1 included developing plans for a clearinghouse/web portal for all NCCCS student development services information with input from a statewide advisory panel. Composed of student services deans from different colleges, the Advisory Board was formed and held its first meeting on June 8, 2006. The group named the initiative NC-ACCESS – North Carolina Achieving Community College Excellence in Services to Students.

Among the subject areas they addressed were:
- Legal Issues
- Aspects of Counseling—Academic and Personal
- Financial Aid
- Disability Services
- Evaluation/Assessment of Student Services at College Level
- What Administrators Need to Know

- Role of Faculty—in advising and classroom accommodations
- Student Organizations
- Service Learning
- Best Practices
- Customer Service

Realizing the success of the 2+2 E-Learning Initiative is dependent on students receiving strong support and guidance, the advisory group chose to focus on student retention and orientation during Year Two.

University of North Carolina
UNC-NCCCS 2+2 E-Learning Initiative
Report on UNC Activities

Introduction
The University received an appropriation of one million dollars (non-recurring) to continue work with the North Carolina Community College System to place more articulated degree programs online so students anywhere in the State could access them by taking the first two years online through the community colleges and then the upper-division major through a constituent institution of the University of North Carolina. 2005-06 has been a year for analysis, planning, and development, with some degree programs just beginning to come online. Throughout the year there has been extensive collaboration between NCCCS and UNC-GA to refine the project and begin the development process. This involved general meetings and conference calls between the two staffs and small working groups, which continue to meet.

UNC has focused its attention primarily on degree-program development to respond to the need for more teachers and infrastructure necessary for a seamless transition for students from one online program to another. Fortunately most of UNC's campuses have adequate infrastructures and online course management systems to accommodate these new degree programs. Since UNC would be responsible for the upper-division major, course development for online programs is an extensive task.

Programmatic Developments
NCCCS and UNC had previously collaborated to articulate online degree programs in communication, criminal justice, liberal arts, and business, with continuing discussion of other potential areas for online articulation. Based on these previous articulations the two systems focused on building online degree programs primarily in teacher education, especially high-need areas. This strategy would result in full four-year articulated online degree programs accessible from anywhere in the State that could be used to increase the number of teachers being produced, especially in high-need areas.

The areas identified for development are the following:

- Mathematics Secondary Education

- Science Secondary Education (specific fields and comprehensive)

- Middle Grades Education
    Concentration in Mathematics
    Concentration in Science

- Special Education

- Elementary Education

- Birth through Kindergarten

- Biology Education

The goal is to have a Pre-Major Agreement between the Community Colleges and the University for each area so students in community colleges will know the sequence of courses that will prepare them to enter the upper-division major.

Development Strategy
In some areas there were almost no online courses available at the UNC campuses, for example, in Mathematics and some sciences. On the other hand, in some areas, such as Birth to Kindergarten, Special Education, and Elementary Education, there had been a significant number of courses developed online at UNC campuses. UNC developed two strategies. For those areas and campuses that had a program close to being available online, funds were provided to make those programs available fully online. These programs would be ready to enroll students sooner since a smaller development effort was needed.

For subject areas that had few courses online, the strategy adopted was joint development of a full set of courses for a degree which would be available for use by any campus. As part of this arrangement one or more campuses would commit to offer the degree fully online and in articulation with the community colleges. The Middle Grades concentration in Mathematics, for example, fits this strategy.

While these courses will be developed as part of unitary degree programs, many of the courses will serve lateral entry teachers and others who hold a bachelor's degree in a subject area but who need additional course work in order to be certified.

Middle Grades concentration in Mathematics was the initial teacher education degree program chosen for joint development. First, faculty from Mathematics Education and from Mathematics came together to determine what constituted a good sequence of courses for a Middle Grades major who wanted to concentrate in Mathematics. From a longer list of possible courses, ten courses were chosen for development. Following that, teams of faculty members were identified to develop the courses. Each course will have mathematicians doing the content, but each course will have someone responsible for educational pedagogy working with the content developer. In addition, our contracted development support group, Learn NC, provides instructional design and project management for each course development team.

Middle Grades Math Concentration Course Sequence

The courses selected for the concentration in Middle Grades are:

- Calculus I (4sch)

- Calculus II (4sch)

- Numbers (only) (3sch)

- Algebra (only) (3sch)

- Numbers/Algebra (3sch)

- Geometry (only) (3sch)

- Measurement (only) (3sch)

- Geometry/Measurement (3sch)

- Data/Statistics (3sch)

- Discrete Math (3sch)

Initial Programmatic Developments
ECU was funded to develop Elementary Education and Special Education; ECU was also funded to develop Birth through Kindergarten; NC A&T was funded to develop Elementary Education; UNC Pembroke was funded to develop Birth through Kindergarten. The Middle Grades Mathematics Concentration will be a joint development of the faculty from several campuses—NC Learn has been contracted to manage and pay faculty for their participation as developers.

Supporting Initiatives
A potential source of new teachers is retired military, but there have been difficulties connecting military and their spouses to teacher education opportunities around the State. A portal or electronic entrance to a set of materials will acquaint military and their spouses with the rich educational opportunities available across the State, but especially make them aware of online programs that will allow them to start working on teacher certification before they retire.

It will also be necessary to make the transition of community college students to upper-division online programs as easy and seamless as possible. An electronic portal devoted specifically to the needs of such students will make the transfer process much easier for online students. UNC in collaboration with NCCCS is committed to developing a very usable portal for this group of students.

Funding for Initial Programmatic and Supporting Developments

ECU Elementary and Special Education	184,666
ECU Birth through Kindergarten	100,000
NC A&T - Elementary Education	120,000
UNC-CH - Learn NC (2+2/Military Ed. Portal)	100,000
UNC-CH - Learn NC (Middle Grade Math)	395,334
UNCP - Birth through Kindergarten	100,000
Total	1,000,000

With the exception of the portals, all of the funds provided to UNC went directly to course and program development in teacher education.

Timetable for Implementation of Teachers Education Degree Programs
The first year has been almost entirely a development year for planning and building the online courses that constitute the degree programs. Depending on the number of online courses that were available at the beginning of the process, the length of the development process for each degree will vary widely.

For those that were developed or started in the first year UNC has developed the following time table for beginning the programs:

ECU
Birth-Kindergarten program - summer (May 2006) cohort of 16. For May 2007 they have cohort

of 20-25 prospective students currently being processed.

<u>UNCP</u>
Birth-Kindergarten program - fall 2006 cohort of 24.

<u>NCA&T</u>
Elementary Education - summer 2007 with a cohort of 15 students.

<u>ECU</u>
Elementary Education - initial cohort is scheduled to start in summer 2007.

<u>ECU</u>
Special Education - fall 2007.

<u>NCA&T</u>
Elementary Education - summer 2007 with a cohort of 15 students.

<u>JOINT</u>
Middle Grades Concentration should be completed by summer 2007 and, if Middle Grades Pedagogy is completed by then, the first courses can be offered fall 2007.

Next Steps in Programmatic Development
The next major project is to develop the secondary major in Mathematics Education. This degree will require about double the number of courses needed for the Middle Grades Concentration but there will be some overlap. This project is already underway, with Mathematics faculty and Mathematics Education faculty having already identified the courses for development. Faculty teams should be chosen by the end of October, with development starting soon after. This project will require half or more of UNC's funding (one million non-recurring) for this project for 2006-07.

The next project will be Middle Schools Pedagogy. Following that, UNC will turn to the sciences, to develop Chemistry, Biology, Earth Sciences, and Physics at the secondary level, as well as a Science Concentration at the Middle Grades level. The funding for 2006-07 will likely be exhausted by Mathematics Secondary, Middle School Pedagogy, and a minimal start on the science secondary majors. UNC will initiate planning for the science secondary majors but will need continuation of funding if the degree programs are to be fully developed.

<div align="center"><u>**Secondary Education Mathematics Course Sequence**</u></div>

The course sequence that UNC faculty have established for the online mathematics secondary teacher education degree:

- Calculus I (4sch)

- Calculus II (4sch)

- Calculus III (4sch)

- Linear Algebra (3sch)

- Modern Algebra (3sch)

- Geometry – primarily Euclidian, axiomatic, and proof oriented (3sch)

- History of Math (3sch)

- Differential Equations (3sch)

- Proof and Number Theory (3sch)

- Statistics II – calculus/probability based (3sch)

- Computer Science – programming emphasis (3sch)

- Mathematical Modeling (3sch)

- Discrete Math I (3sch)

- Discrete Math II (3sch)

- Teaching Methods I (3sch)

- Teaching Methods II (3sch)

Alternative List for Course Development

- Geometry - primarily non-Euclidean (3sch)

- Real Analysis (3sch)

Other Needed Steps

The joint team from NCCCS and UNC-GA identified other issues that will need to be addressed. It will be necessary to develop a student identifier, other than social security number, for tracking students from the community colleges to the universities. The two systems are discussing alternatives for doing this.

It was agreed that after teacher education was addressed, attention would turn to exploring placing nursing programs on the same online footing, along with other high-need disciplines.

Professional development for faculty to be prepared to develop high-quality courses is an important concern, and each system has addressed it for their faculty and will need to continue to do so.

Conclusion for UNC

While we have cohorts beginning in an online upper-division degree program in the summer and fall of 2006, it is very early in the process for such a major project. The first year was a development year. We now have cohorts that can be tracked, and will have many more students entering the online programs as they come available. In the coming year we also expect students who enter the NCCCS pipeline to begin to complete their community college programs and move to upper-division teacher education programs.