

APPENDIX J

Part II **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	<u>1,000,000</u>

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.

UNCP

Birth-Kindergarten program - fall 2006 cohort of 24.

NCA&T

Elementary Education - summer 2007 with a cohort of 15 students.

ECU

Elementary Education - initial cohort is scheduled to start in summer 2007.

ECU

Special Education - fall 2007.

NCA&T

Elementary Education - summer 2007 with a cohort of 15 students.

JOINT

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.

Secondary Education Mathematics Course Sequence

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.