

**A Report on the  
University of North Carolina and the  
North Carolina Community College System  
2+2 E-Learning Initiative  
Senate Bill 622, Section 9.5**

**Submitted to the  
JOINT LEGISLATIVE EDUCATION OVERSIGHT COMMITTEE  
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H. Martin Lancaster, President  
North Carolina Community College System

Fred Williams, Executive Vice President  
North Carolina Community College System

Dr. Delores A. Parker, Vice President  
Division of Academic and Student Services

## **UNC/NCCCS 2+2 E-Learning Initiative**

### **Executive Summary**

The 2005 session of the North Carolina General Assembly enacted into law S.L. 2005-276 as follows:

**“SECTION 9.5.** Funds appropriated in this act to The University of North Carolina and the North Carolina Community College System for the UNC-NCCCS 2+2 E-Learning Initiative shall be used to fund further development of online courses for 2+2 programs. Based on a mutually agreed upon decision by the State Board of Education Chairman, the President of the North Carolina Community College System, and the President of The University of North Carolina as to the areas of greatest need, funds are available to support joint technology development, systems to track student progress and articulation between a North Carolina community college and a University of North Carolina campus, and to develop technology to support online courses and 2+2 programs.”

Funds in the amount of \$1 million (recurring) were allocated to the North Carolina Community College System to implement this e-learning initiative. A matching amount of \$1 million (non-recurring) funds was allocated to the University of North Carolina. A committee of staff from both systems has collaboratively developed the strategies and scope of work as identified in this document and attachments.

The North Carolina Community College System and the University of North Carolina recognize the need to strengthen articulation processes between the two higher education systems in order to provide highly qualified classroom teachers for North Carolina. This partnership is consistent with the recommendations of a joint taskforce established between the community college system and the university system. A major goal identified in their planning process is to create partnership efforts for academic programs (with emphasis on teaching and nursing). Within that process, one strategy is to “fully develop a comprehensive articulation agreement for distance learning.”

The information in this report reflects the tremendous progress to date in developing the e-learning system that is compatible between the two higher education systems, that is responsive to the needs of teacher preparation in North Carolina classrooms, and that lays the foundation to build articulation programs to meet the workforce demands for registered nurses, and other critical professional occupations. We believe that this investment by the legislature is a reason why North Carolina continues to be a national role model for higher education cooperation that produces quality graduates. The State Board of Community Colleges and the System Office staff are indeed grateful to provide this report of the ongoing work with the University of North Carolina Board of Governors and the General Administration staff to insure high quality classroom instruction for the children of our state.

Contact:

Dr. Delores A. Parker  
(919) 807-7096

## **Report on the UNC/NCCCS 2+2 E-Learning Initiative**

This historical piece of legislation grows out of the collaborative efforts between the North Carolina General Assembly, the North Carolina Community College System (NCCCS) and the University of North Carolina System (UNC-S). The provision mandates that the systems continue their partnership in addressing the critical teacher shortage facing the state and nation, both now and in the future. The areas to be addressed in this legislation include online teacher education programs, professional development, student tracking, and technology infrastructure.

In passing Senate Bill 622, the General Assembly approved \$1 million recurring funds for the NCCCS and \$1 million non-recurring funds for the UNC-S. Some funds will be used by both systems to support joint projects while other funds will be spent for individual system projects.

Over the past weeks, there have been several meetings, both separate and joint, with representatives of the UNC-S and NCCCS Divisions of Academic/Student Services and Administration. These meetings have been designed to review the legislation, develop strategies, and establish a plan for the scope of work to support the initiative. Additionally, the two groups have had several telephonic meetings. Work has been done by four sub-committees composed of persons from both systems and representing each of the areas identified in the legislation. The NC Community College System Division of Business and Finance has served in the role of consultant in conjunction with Ms. Kristine Leggett, Financial Analyst for the General Assembly.

Early in the dialogue both systems recognized the need to engage other partners who could add value to the scope of work. To date, the partners are the College Foundation of North Carolina (CFNC) and LearnNC. These organizations have a long history of working with higher education in North Carolina.

### **I. Online Teacher Education Degrees**

The scope of work on teacher education will include those disciplines where the greatest teacher shortages are anticipated now. Based on previous studies conducted by the Department of Public Instruction and/or the UNC System, the following teacher education disciplines have been agreed upon as critical by both systems:

- Special Education
- Elementary Education
- Math Education
- Science Education
- Birth-Kindergarten Education
- Biology Education
- Middle School Education

## Use of Funds

Attachment I outlines a three year plan for math and science course development. The total projected budget is \$293,000, not including costs of simulation or whiteboard products. These courses will be developed through either the Virtual Learning Community (VLC) Course Development Centers or a Request for Proposal (RFP) process that will allow individual colleges to develop courses to share with the VLC to complete degrees for online delivery. Additional costs will be incurred during Phase II and Phase III and are included in the infrastructure project proposal.

## II. Professional Development

One of the greatest challenges for the NCCCS is the lack of funds for 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 both faculty and student services staff have competencies in the online process.

The NCCCS has had success in contracting with the Center for Occupational Research and Development (CORD) in providing professional development for faculty interested in online teaching. Over sixteen hundred faculty participated in a 2001 online survey, identifying *skills in teaching online* as their number one priority. Our goal is to expand the partnership with CORD to develop online student support services. Since CORD maintains the 2001 professional development website for the community college system, additional funds will not need to be spent duplicating what has already been created.

### A. NC-NET Success

The North Carolina Network for Excellence in Teaching (NC-NET) was developed by CORD for the NCCCS. NC-NET is being used by North Carolina community college faculty and administrators as evidenced by the following statistics on the website located at [www.nc-net.info](http://www.nc-net.info):

- During 2004-2005, the NC-NET website received 153,729 hits resulting from 6,505 visits.
- Total hits since July 1, 2005, as of October 17, 2005, were 52,948 resulting from 3,612 visits.
- Materials being accessed on the website include the Teaching and Learning Database which contains over 1,500 items.
- Especially popular have been recent acquisitions including *The Early Childhood Survival Guide* (downloaded over 850 times) and the *Including Latinos Manual* (downloaded over 475 times).
- NC-NET Academy online courses

In the spring of 2005, fifty participants representing 18 community colleges completed two NC-NET Academy online courses: *Active Learning in the College Classroom* and *From Good Teaching to Student Learning*.

Both courses drew rave reviews from participants. The first fall course, *Incorporating Active Learning in the College Classroom*, has successfully concluded. There is currently a waiting list for the second course, *From Good Teaching to Student Learning*, now being offered.

- Highlighting best practices from NC community colleges: Products from professional development projects like Durham Tech's *Workplace Ready Classrooms* and Davidson Community College's *Training in the Workforce of the 21st Century* have been referenced hundreds of times.
- Cam Morrison's presentation at the 2004 NCCCS conference on generational differences in the workplace has been accessed over 350 times – thus allowing those unable to attend the conference to share in the presentations online.

#### **B. Use of Funds**

Attachment II outlines a three year plan of work for the professional development that will be provided for student services personnel. The total projected budget is \$380,000. Additional funds will be spent to address ongoing faculty and student services needs as they arise over the next three years and could total an additional \$300,000.

### **III. Technology Infrastructure**

In order to support online learning, the NCCCS has several major challenges in terms of infrastructure changes and enhancements. In December 2005, the use of Blackboard Version 5.5 will become obsolete. The system will convert to version 6.3 in order to support the courses that have been and will be developed through the VLC Course Development Centers. The upgrade to version 6.3 will allow compatibility with the UNC-S universities. The NCCCS will contract with LearnNC to serve as the host for the Enterprise Learning System, e-Community, and Content Learning System.

#### **A. Blackboard Upgrade**

To include: Enterprise Learning System, e-Community, and Content Learning System to be hosted by and shared with LearnNC, K-20 Licensing by Blackboard Inc., and training for ten users on the new platform. The cost for this service is not to exceed \$85,000 for year one.

#### **B. Illuminate Collaboration Software**

To include a 50 seat license to identify up to 50 simultaneous users at any given time, a service offered by ITS. The cost for this service is not to exceed \$50,000 for year one.

### **C. Open Source Development Center**

To provide hardware, training, and administrative support for development centers using open source learning technology, including Moodle (course management system), email, and student portfolio open source solutions. The cost for this service is not to exceed \$40,000 for year one.

### **D. Late Night Labs**

To include faculty training and assistance in developing interactive, online, chemistry labs for Virtual Learning Community courses. Perpetual license covers the initial installation, training, and assistance with lab development, and ownership of up to 800 accounts for students. The cost for this service is not to exceed \$55,000 for year one. An annual maintenance fee beyond the first year cost will be 10% of the perpetual license fee.

### **E. Use of Funds**

Attachment III outlines a three year plan of work for the technology infrastructure that will be provided to support the UNC/NCCCS 2+2 Distance Learning Initiative. The total projected budget is \$837,200, including the cost of simulation for Chemistry courses (\$45,000). The total figure does not include the cost of simulation for Physics and Biology on-line courses or the cost of white-board capability for all math/science courses. These tasks will not be implemented until Year Two/Three of the proposed project therefore any cost estimate at this time will be invalid at the time of implementation.

Attachment IV outlines the proposed development of a teacher education preparation module using the technology of the College Foundation of North Carolina (CFNC) website. The module will provide the career information needed for e-learning students to assess the rewards of teaching in North Carolina.

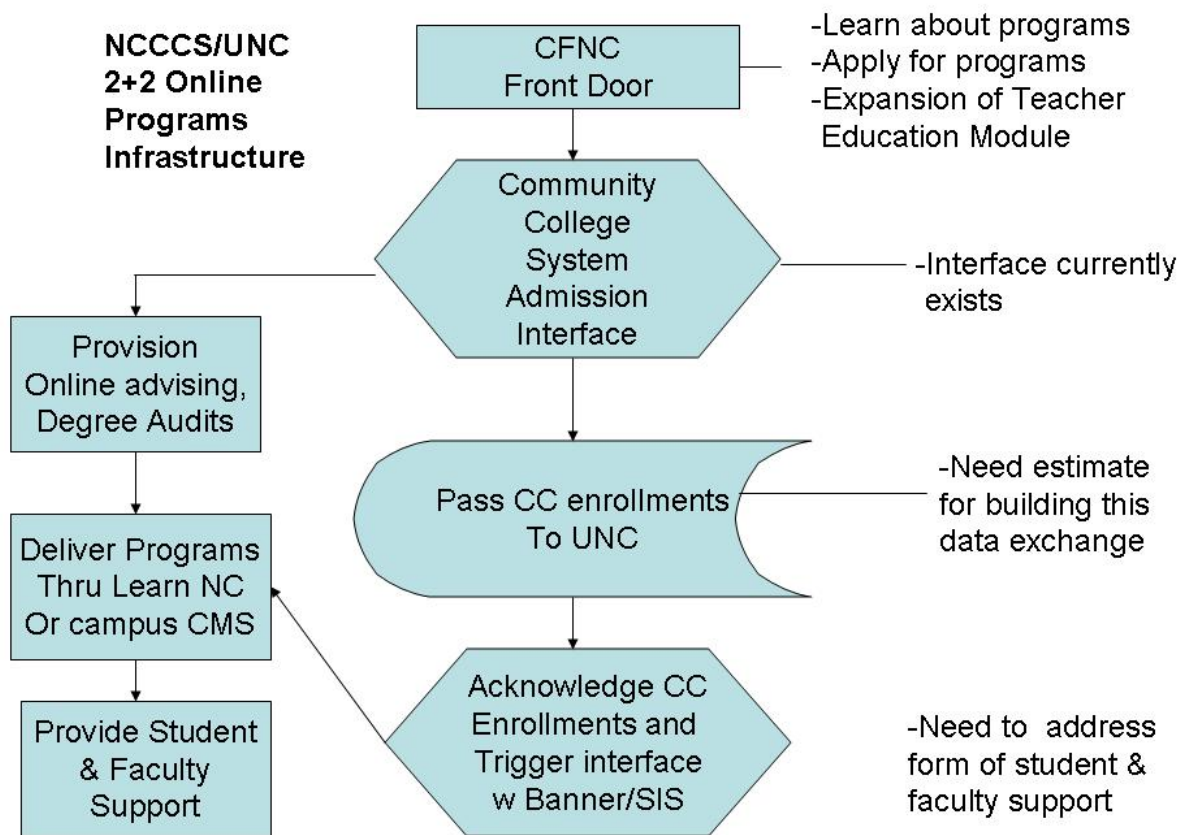
## **IV. Student Tracking**

Tracking across K-20 is a major challenge in North Carolina higher education. Tracking student data will give decision-makers the necessary tools to make informed assessments for students and schools in the state. In collaboration with the State Occupational Information Coordinating Committee (SOICC) and the Common Follow-up System, UNC and NCCCS will identify additional data that should be tracked from K-12 through community colleges and UNC campuses and potentially combined with employment information. Since this is specialized work to identify, design and implement changes to the existing data exchange, the primary cost cannot be estimated at this time.

The ability to transfer transcripts from NC Wise to UNC-S has been previously demonstrated and is part of the NC Wise project plan. The community colleges will have the ability to receive and send transcripts (via the SPEEDE standard) when they implement the College Information System (CIS) student module. This will give NCCCS the ability to request and receive high school transcripts as the UNC campuses do through NC Wise, and to respond to requests for transcripts from UNC campuses. Based on the work that the Department of Public

Instruction (DPI) has done (through their contractor), NCCCS should be able to estimate the cost of the first phase of this initiative, to be completed in FY 2005-06, and to identify requirements and define the project plan and resources required to test and implement exchanging transcripts, which would be accomplished in FY 2006-07.

This project will be developed in partnership with the Department of Public Instruction, the UNC-Office of the President, and the NCCCS. Initial work has begun by these groups; however, the cost to implement the entire student tracking system cannot be estimated at this time, although it will require recurring funding.



## 2+2 Phase One Course Development Project Proposal

**Project Title:** NCCCS/UNC 2+2 E-Learning Initiative

**Cost Estimate:**

Year 1:	\$ 93,000
Year 2:	\$100,000
Year 3:	\$100,000

This project is a multi-year initiative to develop the NCCCS Virtual Learning Community (VLC) math and science courses. The identified courses are needed to complete VLC provision of pre-major degrees in the following areas of greatest need:

Associate in Arts/Elementary Education (A1010R)  
 Associate in Arts/Middle Grades Ed. and Special Ed. (A1010S)  
 Associate in Arts/Chemistry and Chemistry Ed. (A1040B)  
 Associate in Science/Biology and Biology Ed. (A1040A)  
 Associate in Science/Mathematics Ed. (A1040F)

### Year 1 Project

Development of the following six VLC chemistry courses with accompanying labs:

CHM 131A Intro to Chemistry Lab	CHM 152 General Chemistry II
CHM 135 Survey of Chemistry I	CHM 251 Organic Chemistry I
CHM 151 General Chemistry I	CHM 252 Organic Chemistry II

### Year 1 Project Tasks:

- Conversion of existing VLC college transfer courses into new Blackboard 6x template/file structure
- Distribution of RFP for chemistry course development center
- Distribution of chemistry course developer nomination forms to colleges
- Selection of developers by selected committee
- Create course templates on the System Office Blackboard Server
- Create user IDs and passwords for developers
- Convene chemistry course developer group
- Provide training to course developer group in VLC course development
- Conduct survey among chemistry faculty to provide suggested simulation products
- Analysis of whiteboard capability provided through Blackboard
- Mid-development meeting of chemistry course developers
- Secure quotes and contract with selected vendor to provide simulation
- Final development meeting to incorporate simulation and whiteboard
- Final checkout of courses at the System Office

## **Year 2 Project**

Development of the following ten VLC math and physics courses with accompanying labs:

MAT 175 Precalculus  
MAT 271 Calculus I  
MAT 272 Calculus II

MAT 273 Calculus III  
MAT 285 Differential Equations

PHY 110 Conceptual Physics  
PHY 110A Conceptual Physics Lab  
PHY 151 College Physics I

PHY 251 General Physics I  
PHY 252 General Physics II

### Year 2 Project Tasks:

- Distribution of RFP for math/physics course development center
- Distribution of math and physics course developer nomination forms to colleges
- Selection of developers by selected committee
- Create course templates on the System Office Blackboard Server
- Create user IDS and passwords for developers
- Convene math and physics course developer groups
- Provide training to course developer groups in VLC course development
- Conduct survey among math and physics faculty to provide suggested simulation products
- Analysis of whiteboard capability provided through Blackboard
- Mid-development meeting of math and physics course developers
- Secure quotes and contract with selected vendor to provide simulation
- Final development meeting to incorporate simulation and whiteboard
- Final checkout of courses at the System Office

## **Year 3 Project**

Development of the following ten VLC biology courses and/or accompanying labs:

BIO 111 General Biology I (lab)  
BIO 112 General Biology II (lab)  
BIO 120 Introductory Botany  
BIO 130 Introductory Zoology  
BIO 140A Environ. Bio Lab

BIO 145 Ecology  
BIO 165 Anatomy and Physiology I (lab)  
BIO 166 Anatomy and Physiology II (lab)  
BIO 250 Genetics  
BIO 275 Microbiology

Year 3 Project Tasks:

- Distribution of RFP for biology course development center
- Distribution of biology course developer nomination forms to colleges
- Selection of developers by selected committee
- Create course templates on the System Office Blackboard Server
- Create user IDS and passwords for developers
- Convene biology course developer group
- Provide training to course developer group in VLC course development
- Conduct survey among biology faculty to provide suggested simulation products
- Analysis of whiteboard capability provided through Blackboard
- Mid-development meeting of biology course developers
- Secure quotes and contract with selected vendor to provide simulation
- Final development meeting to incorporate simulation and whiteboard
- Final checkout of courses at the System Office

*Note: The cost estimate provides amounts for the tasks listed above, but does not include costs of simulation or whiteboard products (see Infrastructure project proposal). The proposed budget is considered an estimate; however, final costs will not exceed the estimated amount.*

**Center for Occupational Research and Development  
Project Proposal**

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**Project Title:** North Carolina Network for Excellence in Teaching Expansion – Student Development Services

**Cost Estimate:** Year 1: \$110,000  
Year 2: \$150,000  
Year 3: \$120,000

This project is a multi-year initiative to develop and provide professional development programs to student development personnel, enabling NC-NET to extend professional development support to a key constituency.

**Year 1 Project**

Needs assessments; creation of infrastructure; early stages of content development

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Year 1 Project Tasks:

**Task 1:** Conduct survey and/or focus groups to identify professional development needs and interests of Student Development personnel. Issues to address may include:

- Level of experience with Blackboard/computer learning models
- Interest in professional development/willingness and/or time to participate
- Topics of interest
- Formats desired
- Frequency
- Types of cohorts desired
- High-priority issues
- Past professional development experience
- Availability/time of day to attend

**Task 2:** Development of a clearinghouse/web portal for all NCCCS student development services information with input from a statewide advisory panel. Broad categories include:

- 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

**Task 3:** Development of self-paced modules; delivery of module content and module assessments through Blackboard\*. Examples of topics to be addressed include Legal Issues, Financial Aid, and Customer Service.

## **Year 2 Project**

Expansion of infrastructure; significant content development

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### Year 2 Project Tasks:

**Task 1:** Continuation and expansion of tasks 2 and 3 (web portal and module development) from Year 1

**Task 2:** Development of workshops to complement, support, and introduce self-paced modules. The delivery of these workshops could be face-to-face or via the North Carolina Information Highway.

**Task 3:** Development of online courses; delivery of courses via Blackboard\*. Examples of proposed topics include Customer Service, Best Practices, Aspects of Counseling, and Service Learning.

**Task 4:** Development of an “Experts Roster” that would consist of individuals available to assist the project through Q&A with college personnel, module development, and workshop delivery.

**Task 5:** Development of “how-to” manuals for student development personnel. Examples of topics to be addressed include those mentioned in tasks 1-5 as well as others proposed by advisory group.

## **Year 3 Project**

Evaluation; needs assessments; content and services expansion; sustainability plan

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### Year 3 Project Tasks:

**Task 1:** Conduct follow-up surveys to determine effects of Year 1 and 2 resources and services on student development personnel and to identify future professional development needs.

**Task 2:** Expansion, both in breadth and depth, of tasks conducted in Year 2.

**Task 3:** Identification of best methods for long-term professional development support for student development personnel.

*\*Note:* If it is determined through the needs assessments conducted in Year 1, Task 1, which Blackboard is the most efficient means of delivering module content and/or online courses to student development personnel, training on the use of the Blackboard interface will be provided.

**2+2 Phase One Infrastructure  
Project Proposal**

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**Project Title:** Distance Learning Infrastructure for NC Senate Bill 622 Funding Phase 1

**Cost Estimate:** Year 1: \$230,000  
Year 2: \$276,000  
Year 3: \$331,200

This project is a multi-year initiative to provide hardware/software infrastructure to support the 2+2 Distance Learning NCCCS/UNC Initiative.

**Initial Year 1 Project**

Development of infrastructure; early stages of collaboration

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Year 1 Project Tasks:

**Task 1:** Provide Course Management System (CMS) and Learning Object Repository (LOR) resources in a shared, K-20 environment to include:

- Upgrade Blackboard 6.3 version for Virtual Learning Community (VLC)
- Partner with LearnNC to provide shared Blackboard product services
- Establish LOR for community college and university education resources

**Task 2:** Provide collaboration software to enhance development of online courses, learning objects, and resources for faculty and students to:

- Provide 50 licenses of Elluminate collaboration software
- Identify and train moderators capable of scheduling and conducting collaboration work sessions
- Create training, tutorials, orientations, and staff development modules through archive sessions of Elluminate

**Task 3:** Establish an Open Source Development Project to identify and implement open source (license free) software in areas of critical need including:

- Moodle CMS
- LOR
- Email
- Portfolios

**Task 4:** Develop science and math laboratory simulations for 2+2 VLC courses, including:

- Establish a Science and Math Online Laboratory Advisory Committee
- Explore available 3<sup>rd</sup> party online lab resources and simulation
- Select resources in areas of chemistry, biology, physics, and calculus
- Negotiate with simulation vendors
- Late Night Labs chemistry lab simulation has been identified for negotiation

## **Year 2 Project**

Expansion of infrastructure; production of learning and teaching resources

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### Year 2 Project Tasks:

**Task 1:** Provide Course Management System (CMS) and Learning Object Repository (LOR) resources in a shared, K-20 environment to include:

- Continue to migrate all Blackboard courses to 6.3
- Expand CMS shared hosting partnership with LearnNC to include UNC Schools of Education
- Expand LOR resources for community college and university education courses

**Task 2:** Provide collaboration software to enhance development of online courses, learning objects, and resources for faculty and students to include:

- Expand Elluminate collaboration software licenses to 75
- Expand numbers of instructors utilizing collaborative work sessions
- Expand training, tutorials, orientations, and staff development modules through archive sessions of Elluminate

**Task 3:** Establish an Open Source Development Project to identify and implement open source (license free) software in areas of CMS, LOR, email, portfolios, and other critical areas of need including:

- Establish Moodle CMS Users Group for community college instructors and staff
- LOR
- Email
- Portfolios

**Task 4:** Develop science and math laboratory simulations for Virtual Learning Community courses. This project includes:

- Develop online lab simulations for all online chemistry courses using Late Night Lab software
- Target 3<sup>rd</sup> party resources for physics, biology, and calculus
- Select resources in areas of biology, physics, and calculus
- Negotiate with simulation vendors

## **Year 3 Project**

Continued expansion of infrastructure; production of learning and teaching resources

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### Year 3 Project Tasks:

**Task 1:** Provide Course Management System (CMS) and Learning Object Repository (LOR) resources in a shared, K-20 environment to include:

- Continue expansion of CMS shared hosting partnership with LearnNC and collaboration with UNC Schools of Education
- Continue expansion of LOR resources for community college and university education courses

**Task 2:** Provide collaboration software to enhance development of online courses, learning objects, and resources for faculty and students to include:

- Expand Elluminate collaboration software licenses to 100
- Expand numbers of instructors utilizing collaborative work sessions
- Expand training, tutorials, orientations, and staff development modules through archive sessions of Elluminate

**Task 3:** Establish an Open Source Development Project to identify and implement open source (license free) software in areas of CMS, LOR, email, portfolios, and other critical areas of need including:

- Establish effective Moodle CMS application for higher education online learning and instruction
- Establish effective LOR applications
- Establish effective email applications
- Establish effective portfolio applications

**Task 4:** Develop science and math laboratory simulations for Virtual Learning Community courses. This project includes:

- Develop online lab simulations for all online physics, biology, and calculus courses
- Merge developed online lab resources into all Virtual Learning Community science and math courses

### CFNC Teacher Education Module Project Proposal

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**Project Title:** NCCCS/UNC 2+2 E-Learning Initiative

**Cost Estimate:** Year 1: \$65,000

This module will facilitate the exploration of the teaching career by potential students in the 2+2 E-Learning Initiative using the collaborative online technology of the CFNC website.

**This section will give you:**

- An overview of the different types of teachers
- Career opportunities available to teaching professionals
- Educational mobility options for NC Teachers
- A roadmap for how to get there, including:
  - Teacher education articulation plan
  - Education options: online?
  - Educational portfolio management
  - Life management
  - Testimonials
  - Financial aid/scholarships
  - FAQs (Important questions for you to consider)
  - Other resources for NC teachers

Teacher Education Module

Video Enhancement	\$25,000
Job Matching Module	\$30,000
Portfolio	
Server Hosting, Maintenance, Upgrades (annually)	<u>\$10,000</u>
<u>Total</u>	<u>\$65,000</u>