
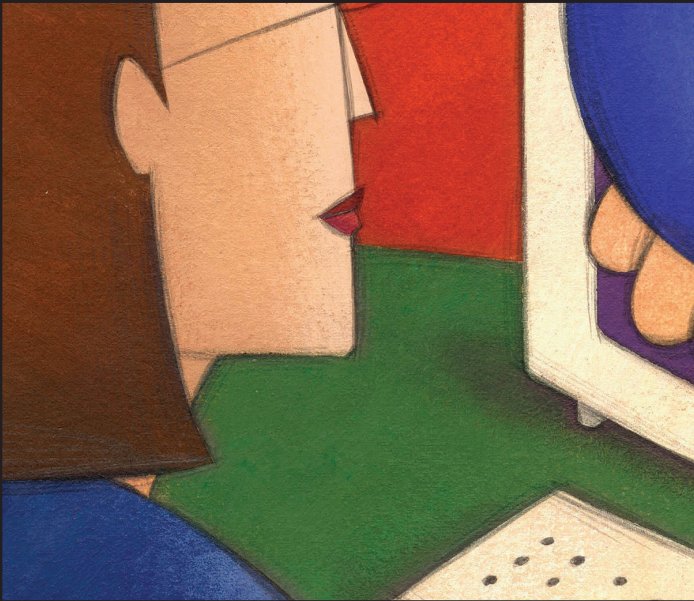




E-Learning Commission

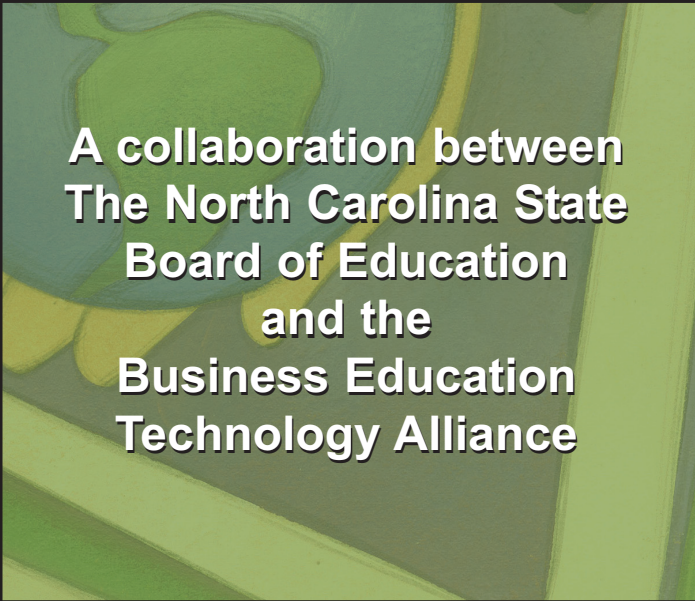


A collaboration between
The North Carolina State
Board of Education
and the
Business Education
Technology Alliance



Worldwide Schoolhouse: A Global Vision for Learning in North Carolina

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**E-Learning Commission Report to the
North Carolina State Board of Education and the
Business Education Technology Alliance
February 2, 2006**

Preface

Worldwide Schoolhouse: A Global Vision for Learning in North Carolina

The one room school house and small schools that dotted America generations ago epitomize a time and place where the school house was both a part of the local community and window to a much larger world. It was a safe, comforting place for young minds to explore and prepare for their future. While those days are gone, applications of information and communications technology make possible a new vision for learning – a Worldwide Schoolhouse.

What Is the Worldwide Schoolhouse?

The Worldwide Schoolhouse makes education and life improvement available to every resident of North Carolina. Even better, it is a very achievable vision for future learning across North Carolina. It focuses on the individual wherever they are regardless of age and economic status. The vision targets both the **rural and the urban** and begins with grade school students and progresses through community college and university with the goals of preparing and retraining the state's workforce and the improvement of life for millions.

Who Does It Help?

To illustrate the impact of the Worldwide Schoolhouse, six hypothetical learners have been created from existing groups of distance learners. These six people are composites of real people who successfully utilize distance learning technology.

Cyrus, 47 years old, is a displaced mill worker. Cyrus lost his job of 23 years in which he was paid \$18 per hour. With only an 11th grade education, he must compete with 3,000 of his former co-workers for less paying jobs in his home town of Concord. While working 2 part time jobs, Cyrus is taking computer courses online in preparation for a new career.

Myra-Jane, 32 years old, lives in Winston-Salem, a single mother with a full-time job who dreams of becoming a nurse. She is currently enrolled in the online Nursing program. This program is the only way that Myra-Jane can become a nurse because she has no other financial support for her children. The online program enables her to take all courses except for laboratory and clinical sections. These are offered on weekends and evenings.

Shante, 9 years old from Shelby, is recovering from an accident. She has missed two months of school and will not rejoin her class for three more months. However, she has caught up with her classmates and is on pace to graduate in June due to virtual classes available through the NC Department of Public Instruction.

Jake, 12 years old, is a middle school student from Murphy with an avid interest in marine biology. He is participating in an online honors program sponsored by one of our state universities. This university provides online collaborative learning with 30 middle schools each year by providing learning resources and live demonstrations of marine studies and interaction with professors and university students.

Morgan, 17 years old, is a senior in Manteo and was recently accepted to a state university engineering program. Morgan was able to take advanced science and math courses from the NC School of Science and Mathematics through a combination of online and videoconference courses. Morgan will begin his on-campus studies as a sophomore because of the college credit he earned in high school.

Maria, 52 years old, is a recent immigrant from Guatemala now living with her son Carlos. Carlos has been living and working in Albemarle for 12 years. Last year Carlos established his own house painting service and was able to move his mother to the United States. Maria is a talented seamstress and has a dream of opening her own business. She is taking English as a Second Language (ESL) and Basic Skills courses. Eventually Maria wants to take accounting and business courses to help her establish her own business.

How It Works

The concept of the “Worldwide Schoolhouse” integrates current and available distance learning technology in use by North Carolina public schools, community colleges, and universities. However, there is no commitment to using these technologies to enhance the lives of North Carolina citizens or improve the economic situation for every county, every community in the state.

What Is Needed

We need access:

- Access to the Internet – state data infrastructure is inadequate now. We require **a ten-fold increase in data capacity** to support our K-20 institutions, public, and business partners in North Carolina.
- Access to teaching tools
- Equal access to learning tools for all North Carolina students, regardless of their age or where they live in the state
- Access to job skills
- Learning opportunities for all that improve our state one individual at a time – but including everyone.

North Carolina deserves a K-20 solution to meet the distance learning needs of its citizens now and in the future. This solution requires an infrastructure comprised of broadband Internet access for all 100 counties, learning and teaching tools, support for our teachers, instructors, and professors, and leadership to secure funding to make this happen. The purpose of the E-Learning Commission is helping provide the guidance on making it a reality for all of North Carolina’s citizens.

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Table of Contents

I.	Introduction	4
II.	Business Education Technology Alliance	5
III.	E-Learning Commission	6
IV.	Commission Recommendations and Rationale	7
V.	Appendix A-Proposed Organizational Chart.....	16
VI.	Appendix B - Listing of Commission Members.....	17
VII.	Appendix C - Plan and Funding for a Virtual High School	20
VIII.	Appendix D - Education Cabinet.....	21
IX.	Appendix E - Vision for E-Learning	24

I. Introduction

We live today in an information world, a knowledge society. The success of businesses, communities, states, and countries in the global economy will depend on an educated workforce with the skills to function as knowledge workers.

Globalization and technology have displaced many jobs. The remaining and future jobs require knowledge workers who can manage and process information, think critically, assimilate primary source information, and solve problems. These jobs minimally require an undergraduate degree. It is critical we provide students every opportunity to maximize their learning potential

In addition it is estimated that students graduating today from high school will experience eight to ten different careers during their lifetime. The illiterate person today is not one who cannot read or write but one who cannot learn, unlearn, and relearn. Therefore we must inculcate life long skills for learning.

The E-Learning Commission is dedicated to creating an on-line learning environment that promotes student achievement, business success, economic stability, and lifelong learning for the citizens of North Carolina.

To achieve this vision North Carolina must be prepared to provide learning opportunities and access to information for its students and citizens anytime and anywhere using a variety of instructional approaches to accommodate individual and schedule differences.

Information technology as a tool for enabling teaching and learning can expand the horizons of education around the world to enrich the resources of knowledge.

II. The Business Education Technology Alliance

The Business Education Technology Alliance (BETA) was established in 2003 by General Statute 115C-102.15. This commission of 27 business leaders, local and state policy makers, and educators are charged to ensure that the effective use of technology is built into the North Carolina education system for the purpose of preparing a globally competitive workforce and citizenry for the 21st century.

BETA, in fulfillment of its reporting requirements, presented in January 2005 twenty recommendations to the State Board of Education and to the North Carolina General Assembly Joint Education Oversight Committee. The report was also presented to the University of North Carolina Board of Governors, the State Board of Community Colleges and the North Carolina Education Cabinet.

One of the twenty recommendations pertained to establishing E-learning standards and infrastructures for K-20.

“The State Board of Education, the North Carolina Board of Governors, the Independent Colleges and Universities and the North Carolina Community College Board should develop E-learning standards and infrastructures that provide virtual learning opportunities to students and other citizens through all North Carolina schools, universities, and community colleges.

The PreK-12 schools should be given highest priority in the first wave of funding and development of the E-learning standards and infrastructures. The initial focus of the State Board of Education should be high schools while also researching and developing where appropriate E-learning for Middle/Junior High and Elementary schools. E-learning programs should support both teachers and students. Funding for E-learning should be a new appropriation and not come from existing funds.

The BETA is requesting that the State Board of Education assist with the establishment of a commission of potential partners including those groups or organizations who are currently e-learning providers in North Carolina, (the Cumberland Web Academy, LEARN NC, the North Carolina School for Math and Science), the North Carolina Department of Public Instruction, and perhaps others North Carolina organizations. The convening meeting will be in January 2005 after the State Board of Education and the BETA chairpersons identify an individual who is knowledgeable of E-Learning. The commission is encouraged to evaluate the existing e-learning programs that are currently being used in North Carolina. The commission will deliver a complete report to the BETA and the SBE regarding implementation, staffing, and funding details no later than June 1, 2005.”

The General Assembly formalized this BETA recommendation in Session law 2005-276-Senate Bill 622 by approving a Plan and Funding for a Virtual High School.

III. The E-Learning Commission Phase II

As a result of the Business Education Technology Alliance (BETA) E-Learning recommendation, the State Board of Education (SBE), chaired by Howard Lee and the BETA, chaired by Lt. Governor Beverly Perdue, appointed members to serve on the E-Learning Commission Phase I. The E-Learning Phase I Commission was charged to develop a strategy for implementing the North Carolina Virtual School (NCVS) which focuses on high schools. In support of its work, the General Assembly included a provision in Senate 622 to approve and fund a virtual high school pilot for 2005-06. The pilot phase is currently in operation under the direction of the State Board of Education with an appointed Advisory Board to develop plans for statewide implementation of the NCVS by June 2006. In addition to a grant from the New Schools Project to support the work of the Commission, funding was provided by the General Assembly for the pilot year, and a grant from the National Governor's Association was also awarded. With Phase I underway, the SBE and BETA Chairmen revised the Commission membership so that it could work on Phase II which addresses e-learning for all North Carolina citizens.

Chairman Lee and Chairman Perdue appointed twenty six (26) members to represent businesses, community colleges, higher education, independent colleges, the Department of Public Instruction, virtual education content providers, superintendents, teachers, technology directors, counselors, and the State Board of Education. See Appendix B for a listing of the members. They solicited recommendations from the Presidents of the University of North Carolina, the North Carolina Community Colleges and the Independent Universities and Colleges since the Senate 622 provision directed higher education to develop e-learning standards.

The E-Learning Commission Phase II has a long-term goal to develop a state-wide E-Learning infrastructure which complements and extends our traditional educational institutions at all levels, ultimately reaching all citizens. This approach is a natural and necessary development of the information age and expanding access of technology and technology tools. If accomplished at a high level of quality, E-Learning holds promise for expanding access to education for all North Carolina citizens. Indeed, many North Carolinians already take advantage of online university and community college coursework. Expanding this access in an organized way is one strategy for improving overall educational attainment of the state's citizens. This is important for the state's economic future.

E-Learning Commission Recommendations and Rationale

The following recommendations and rationales are made by the E-learning Commission Phase II in completion of its charge by State Board of Education Chairman Howard Lee and Business Education Technology Alliance Chairman Lt. Governor Bev Perdue to develop strategies for providing e-learning opportunities for all North Carolina citizens.

1. The State Board of Education should name its virtual high school pilot approved by the General Assembly in June 2005 as the NCVirtual Public School. Its purpose should be to serve all public school students preK-12 and report to the State Board of Education. It is also recommended that in addition to its charge from the General Assembly for the implementation of a statewide virtual high school by June 2006 that a plan for expanding e-learning opportunities to middle and elementary students is developed no later than June, 2007.

Rationale:

The General Assembly authorized in Senate Bill 622 the development of a pilot virtual high school for implementation statewide beginning in school year 2006-07 if the 2005-06 pilot year is successful. The State Board of Education approved the creation of an interim advisory board to work with the SBE in the development of the pilot and make recommendations for the statewide implementation. In addition the SBE was also encouraged to research and develop e-learning opportunities for middle and elementary schools. Since the longer term goal extends to the middle and elementary grades then the entity encompassing all of preK-12 should be named to reflect its purpose to serve all public school children.

2. The General Assembly should move to establish a virtual learning entity called the NCVirtual for all North Carolina citizens and locate it with the Education Cabinet. It is further recommended that an advisory body with support staff be established no later than July 1, 2006 to develop strategies for providing comprehensive e-learning opportunities for all North Carolina citizens. The advisory board should be appointed by the Governor, the Speaker of the House of Representatives and the President Pro Tempore of the State Senate and the Chairmen of the boards represented on the Education Cabinet to ensure stakeholder representation on the advisory board. It is also recommended that the current E-Learning Commission continue to serve in the advisory capacity until the General Assembly convenes and can take action on this recommendation.

It will be the responsibility of the NCVirtual advisory board to assist the Education Cabinet with the facilitation, coordination, and development of e-learning standards and opportunities for all NC citizens among the constituent groups they represent. Each constituent group represented on the Education Cabinet will retain all policy making authority while the Cabinet will ensure coordination and seamless access to all e-learning opportunities for all citizens. It

is also recommended that the NCVirtual advisory board composed of the stakeholder groups work in collaboration with the Business Education Technology Alliance and report to the Education Cabinet and to Joint Education Oversight on its progress including any changes needed to policies, laws and rules to effectively develop e-learning opportunities for all NC Citizens no later than December 2006 and annually thereafter.

The NCVirtual advisory board should include in the scope of its work:

- a. Establishment of a clear purpose and goals for the NCVirtual based on stakeholder needs and requirements.
- b. Development of a strategic plan with measurable goals with reports provided to the Education Cabinet.
- c. Appropriate accountability measures for those goals that would be developed, tracked, and reported regularly to the Education Cabinet.
- d. Development and management of an e-learning portal for the NCVirtual.

Rationale: In order to pursue the primary mission of the Business Education Technology Alliance (BETA,) and then as delegated to the E-Learning Commission, to make educational, training and life-long learning opportunities available to all citizens of the state via e-learning technology, there should be a permanent advisory body with representatives from the primary community stakeholders. Establishing the NCVirtual and locating it with the Education Cabinet will facilitate e-learning for all citizens with the constituent groups charged with education for North Carolina.

The current E-Learning Commission should continue its work and report its findings to the boards and leaders of the public schools, universities, colleges and community colleges which are the policy bodies for education. This will provide an interim strategy to inform and build support for coordination of e-learning through the Education Cabinet. In their remarks to the E-Learning Commission, members of the Education Cabinet unanimously recommended they assume this role to ensure effective coordination among their institutions. Related to this, the Education Cabinet should add a sixth (6) strategic initiative to the current five (5) as recommended by the BETA which supports the skills for 21st Century learning of which e-learning is a part.

3. The General Assembly should establish local community centers statewide for public access, initially at the universities (public, private and independent), community colleges, public schools and public libraries - under the NCVirtual logo.

Rationale: In order to ensure convenient access for all citizens to e-learning opportunities, public facilities under the NCVirtual logo need to be available throughout the state. Initially these centers could be provided at current educational institutions such as public schools, universities, community colleges

and libraries. Such facilities would need not only appropriate computer equipment but staff to help citizens improve their technical literacy.

4. The General Assembly should provide funding to the Education Cabinet to establish and maintain a common web portal for the programs in the NCVirtual. The portal would provide information and primary access for the public. The NCVirtual portal should:
 - a. Provide effective instructor, advisor, counselors & student orientation, training based on effective distance learning pedagogy in collaboration with North Carolina Schools of Education and other state, regional and national resources.
 - b. Focus more on the non-traditional student; i.e., the "North Carolina Citizen Learner," an individual who seeks and acquires new knowledge and skills to lead a more productive life, thus ultimately benefiting North Carolina and the global community at large.
 - c. Allow the learner to register a profile so that a customized view of the portal could be presented to him or her, and perhaps inform the registered learner about new opportunities of interest, matching the registered profile.
 - d. Assurance that all providers represented by the portal would have appropriate quality controls and accreditations in place, and are aligned with the needs of the North Carolina citizen learner. Responsibility for quality control should remain the domain of the various e-learning providers and their respective accrediting bodies.
 - e. Go beyond academic credit programs and include non-credit bearing e-learning opportunities that are in alignment with the needs of the NC citizen learner. E-learning also be used to leverage resources across the state by providing on-line required training programs such as hazardous materials and safety training, school bus driver training, and others.

Rationale: In order to ensure convenient 'one-stop' access to all the programs and resources provided by the NCVirtual there should be an easily recognized portal on the web. The portal would offer the opportunity not only for accessing program information but also for establishing individual profiles and accounts for users to help them determine appropriate learning opportunities and to track their progress. This would be designed as a user driven website, using common word inquiry search engines.

Finally, it is of paramount importance that a citizen seeking e-learning opportunities through the NCVirtual can rest assured that the programs and resources offered are of the highest quality, compliant with the standards and accreditation in each sector of education represented. Additionally, it is important to assure that the offerings represented have been reviewed by knowledgeable individuals and determined to be in alignment with the needs of the citizen learner. Failure to do so would undermine credibility and limit the utility of the portal.

5. The Education Cabinet should review key policy issues that might further the success of this e-learning initiative including but not limited to:
 - a) Policies regarding clock hours to determine course credit
 - b) University and Community College service areas
 - c) Credit transfer policies among institutions
 - d) Revenue sharing policies at individual public institutions
 - e) Incentive policies for faculty to develop and offer e-learning courses
 - f) Policies to encourage the free sharing of course content or learning objects
 - g) Opportunities for technology transfer to facilitate business development
 - h) Policies to ensure approved providers have equal access to state funds provided to the program

The NCVirtual advisory board would make recommendations to the Education Cabinet as to how to best address these issues to best facilitate e-learning opportunities including any changes to policies, rules or laws that would require action by the individual boards of the constituent groups represented on the Education Cabinet and to the General Assembly.

Rationale: During the sub-committee's development of this report, various policy issues were raised that require further review to ensure the success of the Community. The primary ones raised to date are identified in this recommendation. In addition, it is clear that e-learning requires rethinking many of the policies currently in place to support traditional education. Since the Education Cabinet is the point of coordination, it seems logical that policy issues within and among the constituent groups will best be debated and addressed as new e-learning programs are developed and implemented.

6. The Education Cabinet should leverage the resources being used by the constituent groups represented on the Education Cabinet and develop a common core of Professional Development resources that could serve all of these communities. The recent report to the Education Cabinet regarding the Professional Development Resource Center had many specific design recommendations that might be applicable. The initial programs to be included would include those of the public, private and independent universities, the community colleges, and public schools.

Rationale: A prerequisite for ensuring high quality e-learning opportunities for North Carolina's citizens is ensuring high quality professional development

resources and opportunities for instructors who teach through e-learning. Professional development has always been a core competency of the state's leading e-learning program providers at all levels. It is recognized that there is a great deal of commonality in the professional development needs of e-learning instructors across the spectrum of our PreK-12, community college, university system and private colleges. Just as we are working to aggregate e-learning program offerings for the state's citizens, it makes sense to aggregate the professional development resources and best practices of the state's e-learning providers to leverage the excellent work that has already been done, and to avoid unnecessary duplication of effort as we go forward.

7. The NCVirtual Advisory Board should recommend to the Education Cabinet effective instructor, advisor, counselors & student orientation, training based on effective distance learning pedagogy in collaboration with North Carolina Schools of Education and other state, regional and national resources.

Rationale: At some point, all online learners and teachers must learn how to function in an online environment. While some individuals benefit from face-to-face training, online orientation, training, and help desk services are required for the vast majority of first time online learners. A well designed, customer oriented array of online resources can be the basis for such orientation/training. Appropriate modifications can be tailored to accommodate unique learner populations - such as instructors, advisors, counselors, and students. Advanced learning resources can be developed to provide additional levels of learning support as needed. Individual institutions continue to create separate online orientation and training resources - creating a wasteful duplication of effort. Learning centers dispersed geographically across the state would be ideal for providing hands on, hand holding for teachers and learners new to online instruction.

8. The NCVirtual Advisory Board should recommend to the Education Cabinet a single set of digital content standards regarding PreK-20 online learning resources statewide. This set of standards must comply with those developed by the Southern Regional Education Board and shall include:
 - a) ADA compliance
 - b) Security
 - c) Privacy
 - d) Identity Management
 - e) Interoperability

Rationale: As referenced in recommendation #9, independent Learning Object Repositories (LOR) function as digital libraries of learning resources. However, for LORs to offer reliable compatibility with (all) Learning Management System platforms, to facilitate accurate search and retrieval functionality for learning objects, and to safeguard the security of both learning objects and individuals accessing them, a set of standards must be established and maintained. These

standards govern (1) how learning objects are developed, catalogued, and accessed for all student populations (2) how permissions for access is given, (3) how intellectual property and personal identity is insured, (4) how use of learning objects is tracked, and (5) how learning objects can be effectively integrated into LMS courses.

9. The General Assembly (or NCVirtual) should establish the NC Learning Object Repository (LOR) to support PreK-20 e-learning.

Rationale: An independent Learning Object Repository (LOR) is a digital library of learning objects that, by definition, can be shared among a designated population of learners and teachers. These objects can be documents, audio/video clips, simulations, learning modules, assessments, and archives - virtually any type of learning resource that can be digitized. LORs provide a solution to rising costs of creating digital learning resources as each object can be utilized independently or imbedded in an unlimited number of courses. LORs contain learning objects that can be designed for use via a hierarchy of accessibility - including classrooms, departments, divisions, institutions, systems, states, and regions. Use of learning objects in LORs can be tracked to determine value and utility of individual objects. LORs (1) have the capability to effectively deal with Copyright, intellectual property issues, and permissions issues, (2) contain learning objects that are standards-based and accessible by all LMS platforms, and (3) and contain digital content that can be located easily through online search tools.

10. The Education Cabinet should develop e-portfolios for students beginning in high school or equivalent instruction in order to build a record of student accomplishments and achievements that can follow them throughout life long learning.

Rationale: E-portfolios provide students with the ability to archive and share their work in individual courses, programs or study, or an entire educational career. E-portfolios can be used as secondary or primary assessment tools for student performance. They can also be collected in repositories that, over time, can be used to "showcase" accumulated student course work and can accompany resumes and job applications. Such digital representation of achievement is easily shared and provides evidence of valuable and marketable student skills.

11. The Education Cabinet should establish a database interoperability among institution and agency databases for seamless data transfer to support research and accountability requirements by creating minimum data requirements that include student achievement, human resources, facilities and financial data.

Rationale: To meet state, federal and private foundation requirements for accountability and quality, agencies and institutions that provide e-learning instruction need to exchange information, analyze key performance data and

report results. Database interoperability enables such exchange by utilizing data standards and data definitions that are agreed upon and consistent among such institutions and agencies. Data transfer and exchange processes between information systems managed by the individual institutions and agencies would be the mechanism to create education sector database interoperability.

12. The Education Cabinet should identify and implement a common online learning platform (learning management system) statewide. This online learning platform must contain multimedia, collaboration tools and assessment tools. It must support interactive learning objects, and have tracking capabilities. It must accommodate age appropriateness and be easy to use by all including developmentally and intellectually challenged users.

Rationale: Learning management system (LMS) software is required for online learning and teaching. A single LMS platform for PreK-20 learning simplifies start-up time for all who engage in online learning. LMS software has improved over the years to contain a variety of learning tools for learners of all ages that enrich their learning experiences. Interactive communication tools provide students and teachers the opportunity to develop relationships and trust that rivals face-to-face interactions. A common LMS platform may consist of a single software product or multiple products that conform to a set protocol and standards. In either case, substantial savings in time and public money can be realized through migration to such a common platform.

13. The Education Cabinet should exercise economies of scale purchasing to reduce the cost per student in all instructional technologies. Including but not limited to the following:

- a. Negotiate single contracts for all instructional and distance learning technologies with licensing determined by an FTE/enrollment formula encompassing all educational systems.
- b. More flexible procurement, including multi-year contracts should be utilized to maximize cost effectiveness.
- c. Invest in resources for appropriate “open source” learning technologies to eventually replace proprietary systems and avoid escalating costs.

(Generically, open source refers to a program in which the source code is available to the general public for use and/or modification from its original design free of charge, i.e., open. Open source code is typically created as a collaborative effort in which programmers improve upon the code and share the changes within the community. Open source sprouted in the technological community as a response to proprietary software owned by corporations.)

Rationale: Currently, North Carolina agencies, educational systems, and independent institutions negotiate separate contracts with the majority of learning technology providers. While some "master term" contracts exist, rarely are

contracts based on aggregate FTE or enrollment figures to realize large discount pricing

Open source products are "freeware" software designed and incrementally improved by independent user groups. Many reliable open source products have been developed by major universities using federal or corporate grants. Open source software does require technical support and programming services. In many cases, these support services are available through private providers. However, open source software does not require license fees and is "owned" by the user. In mission critical situations, open source products are not susceptible to escalating license costs, corporate buyouts, or other market fluctuations.

14. The Education Cabinet should develop a balanced scorecard or incorporate into the annual NC State Report Card measures for effectiveness and success of statewide online learning initiatives.

Rationale: The balanced scorecard is a performance management system that enables an organization to: (1) clarify and translate vision and strategy, (2) communicate and link strategic objectives and measures, (3) plan, set targets and align strategic initiatives, and (4) enhance strategic feedback and learning. There are several advantages to the balanced scorecard approach that make it especially appropriate for measuring outcomes relative to teaching and learning in a new paradigm. The balanced scorecard:

- a) Puts a discipline and structure in place
- b) Provides differing views of the organization (perspectives)
- c) Links cause and effect relationships
- d) Focuses on high-impact performance measures
- e) Drives cultural change in an organization
- f) Covers whole organizations (cascade)
- g) Allows effective communications throughout the organization
- h) Leverages information to affirm or refute existing organizational strategies

15. The NCVirtual advisory board should study appropriate means for financing the necessary infrastructure needed such as a statewide bond issue; consulting with the Utilities Commission on opportunities for service fees or surcharges, tax credits; and leveraging other funding sources. The NCV advisory board should make recommendations to the Education Cabinet and to the General Assembly based on the results of its study that may include better utilization of existing resources and/or new funding sources. The study should include but not limited to:

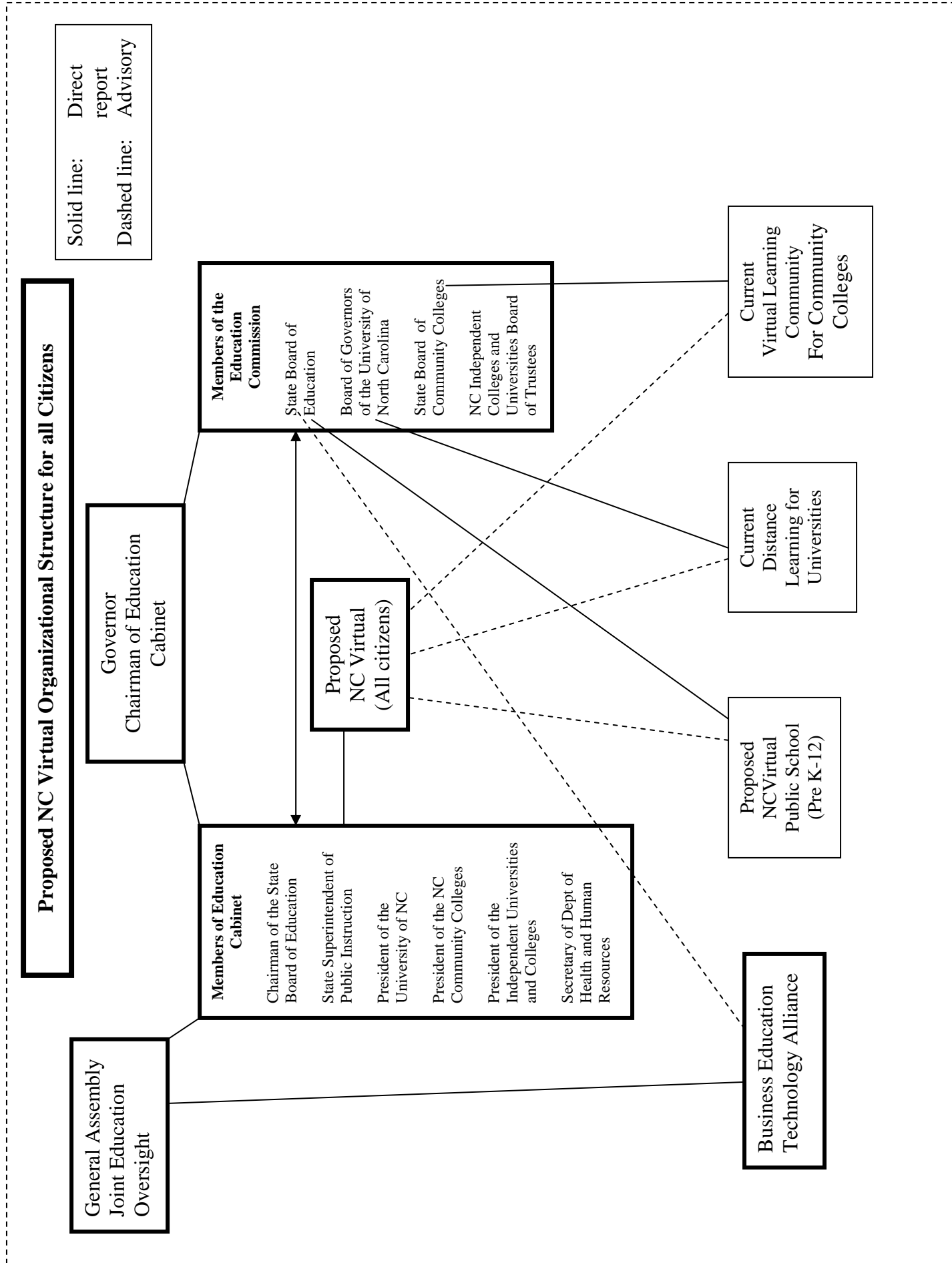
- a. Extending the broadband data infrastructure to every school, community college, college, university by the state.
- b. Providing affordable broadband in homes and workplaces in NC.

Rationale: As reflected in other recommendations in this report, a substantial investment must be made in the technology to ensure opportunities for e-learning;

the availability of broadband internet access statewide being a fundamental prerequisite. Currently allocated resources are totally inadequate for this purpose. Therefore other sources need to be considered and promoted. This investment priority in infrastructure might be compared to that of our state highway system. It is vital to our future economic growth. Louisiana (LONI), Ohio, Kansas, Texas, and California have invested on average \$20-50M for statewide education broadband infrastructures. Based upon design issues and options for broadband connectivity, it is estimated that the costs for connectivity consistent with the Phase I e-learning Commission recommendations for bandwidth to schools and community colleges, would be approximately \$15 million to \$35 million annually. These estimates also assume an average e-rate discount of 60%.

E-learning opportunities are dependent upon access to technology. All North Carolina communities require broadband data infrastructure to access PreK-20 educational services and job skills training to keep our state competitive in a world market. Broadband connectivity is required for learners both at work and at home to utilize e-learning opportunities that involve multimedia, digital content, and online communication software. Moreover, our PreK-20 institutions need adequate connectivity among themselves and other partnering organizations such as the NC State Library to maximize e-learning effectiveness, improve communications, and save travel dollars.

Appendix A



Appendix B

E-Learning Commission Phase II Members

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Appendix C

PLAN AND FUNDING FOR A VIRTUAL HIGH SCHOOL

GENERAL ASSEMBLY OF NORTH CAROLINA

SESSION 2005

SESSION LAW 2005-276

SENATE BILL 622

SECTION 7.41.(a) The State Board of Education, the Board of Governors of The University of North Carolina, the Independent Colleges and Universities, and the State Board of Community Colleges shall develop E-learning standards and plans for infrastructures that provide virtual learning opportunities accessible to students and other citizens through all North Carolina schools, universities, and community colleges. In developing the plan for the public schools, the State Board of Education shall focus initially on high schools while also researching and developing, where appropriate, E-learning for middle schools, junior high schools, and elementary schools. E-learning programs shall support both teachers and students.

SECTION 7.41.(b) As used in this section, "E-learning" is electronic learning that includes a wide set of applications and processes, such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audiotape, videotape, satellite broadcast, interactive television, and CD-ROM.

SECTION 7.41.(c) It is the intent of the General Assembly to give public schools the highest priority in funding for and development of E-learning. Funding for E-learning should be a new appropriation and not come exclusively from existing funds.

SECTION 7.41.(d) The State Board of Education shall use funds appropriated for a virtual high school to establish and implement a pilot virtual high school during the 2005-2006 school year and the 2006-2007 school year. The State Board of Education shall include in the pilot program instruction on personal financial literacy. This instruction shall be designed to equip students with the knowledge and skills they need, before they become self-supporting, to make critical decisions regarding their personal finances. The components of instruction shall include, at a minimum, consumer financial education, personal finance, and personal credit.

SECTION 7.41.(e) If the pilot program is successful, it is the intent of the General Assembly to provide funding to implement a virtual high school on a statewide basis for the 2006-2007 fiscal year.

Appendix D
Education Cabinet
Chapter 116C.

Continuum of Education Programs.

§ 116C-1. Education Cabinet created.

(a) The Education Cabinet is created. The Education Cabinet shall be located administratively within, and shall exercise its powers within existing resources of, the Office of the Governor. However, the Education Cabinet shall exercise its statutory powers independently of the Office of the Governor.

(b) The Education Cabinet shall consist of the Governor, who shall serve as chair, the President of The University of North Carolina, the State Superintendent of Public Instruction, the Chairman of the State Board of Education, the President of the North Carolina Community Colleges System, and the President of the North Carolina Independent Colleges and Universities. The Education Cabinet may invite other representatives of education to participate in its deliberations as adjunct members.

(c) The Education Cabinet shall be a nonvoting body that:

- (1) Works to resolve issues between existing providers of education.
- (2) Sets the agenda for the State Education Commission.
- (3) Develops a strategic design for a continuum of education programs, in accordance with G.S. 116C-3.
- (4) Studies other issues referred to it by the Governor or the General Assembly.

(d) The Office of the Governor, in coordination with the staffs of The University of North Carolina, the North Carolina Community College System, and the Department of Public Instruction, shall provide staff to the Education Cabinet. (1993, c. 393, s. 1; 1995, c. 324, s. 15.12(b); 2001-123, s. 1.)

§ 116C-2. State Education Commission.

The State Education Commission shall consist of the Board of Governors of The University of North Carolina, the State Community College Board, and the State Board of Education. The Governor shall call the meetings of the State Education Commission.

The Commission shall be a forum for airing proposals and engaging in board-to-board dialogue about issues the Education Cabinet is addressing. The agenda for Commission meetings shall be set by the Education Cabinet. (1993, c. 393, s. 1.)

§ 116C-3. Strategic design for a continuum of education programs.

The Education Cabinet shall develop a strategic design for a continuum of education programs. A continuum of education programs is the complement of programs delivered by the State to learners at all levels.

The new design shall take into account issues raised by the Government Performance Audit Committee of the Legislative Research Commission.

The design process shall:

- (1) Include vigorous examination of all programs as if they were being created for the first time.
- (2) Compare the existing structures, funding levels, and responsibilities of each system to the new design.
- (3) Focus on issues concerning coursework articulation and plan for how to improve coursework articulation among existing providers of education.

The Education Cabinet shall report to the Joint Legislative Education Oversight Committee on the strategic design it develops prior to January 1, 1995. (1993, c. 393, s. 1; 1993 (Reg. Sess., 1994), c. 677, s. 12.1.)

§ 116C-4. First in America Innovative Education Initiatives Act.

(a) The General Assembly strongly endorses the Governor's goal of making North Carolina's system of education first in America by 2010. With that as the goal, the Education Cabinet shall set as a priority cooperative efforts between secondary schools and institutions of higher education so as to reduce the high school dropout rate, increase high school and college graduation rates, decrease the need for remediation in institutions of higher education, and raise certificate, associate, and bachelor degree completion rates. The Cabinet shall identify and support efforts that achieve the following purposes:

- (1) Support cooperative innovative high school programs developed under Part 9 of Article 16 of Chapter 115C of the General Statutes.
- (2) Improve high school completion rates and reduce high school dropout rates.
- (3) Close the achievement gap.
- (4) Create redesigned middle schools or high schools.
- (5) Provide flexible, customized programs of learning for high school students who would benefit from accelerated, higher level coursework or early graduation.
- (6) Establish high quality alternative learning programs.
- (7) Establish a virtual high school.
- (8) Implement other innovative education initiatives designed to advance the State's system of education.

(b) The Education Cabinet shall identify federal, State, and local funds that may be used to support these initiatives. In addition, the Cabinet is strongly encouraged to pursue private funds that could be used to support these initiatives.

(c) The Cabinet shall report by January 15, 2004, and annually thereafter, to the Joint Legislative Education Oversight Committee on its activities under this section. The annual reports may include recommendations for statutory changes needed to support cooperative innovative initiatives, including programs approved under Part 9 of Article 16 of Chapter 115C of the General Statutes. (2003-277, s. 1.)

Appendix E

Vision for E-Learning

The North Carolina E-learning Commission is charged with making educational, training, and life-long learning opportunities available to all citizens of the state via e-learning (electronic.) This task is consistent with the mission of the Business Education Technology Alliance (BETA) which follows:

“In the 21st century world of information and technology literacy, it shall be the mission of North Carolina to provide to all of its citizens the tools, resources, processes and systems to access information to solve problems, communicate clearly, make informed decisions, and construct new knowledge, products, and systems.”

One of the most significant goals that the commission must address is to make the myriad of e-learning opportunities offered by the state’s universities, community college system, the newly established North Carolina Virtual School, and other educational providers, including corporate and non-profit providers, known and accessible to our citizenry in a concise, consistent, and effective way. Key elements required to achieve this goal include:

- Developing a portal that provides a “one-stop shop” for the NC citizen learner. The NC learner should be able to establish an account on the portal, enter a profile, and be presented a menu of e-learning opportunities tailored to his or her specific needs. CFNC and the SREB Electronic Campus are two examples of academic portals that may be drawn upon as models.
- Establishing a cooperative agreement among the various providers listed above and as well as others that meet agreed upon standards. The cooperative agreement will set guidelines and parameters that will enable the NC citizen learner to access the providers’ programs in a consistent manner via the portal, and define a framework for shared resources (e.g., hardware, software, content, ...) academic integrity and accountability and services (e.g., professional development, advertising, help desk services, ...) In addition, specific access points or facilities should be identified as part of the agreements where learners can go to access resources in every county.
- Advocating the build-out of a state-wide broadband network. The establishment of a consolidated and comprehensive model for e-learning in North Carolina will clearly demonstrate the need for and value of broadband connectivity across the state. To use a transportation metaphor, the e-learning content provides the valuable “freight” which justifies the cost of building the “information highway.”
- Developing and implementing an effective marketing program. E-learning is a conceptual leap for many of North Carolina’s citizens. A carefully constructed and effectively executed marketing plan will be essential to success. Again, CFNC provides an excellent example. (There are many audiences and that must be identified)
- Addressing professional development. Schools of Education have courses that teaches all teachers about online learning. Courses for online learning and

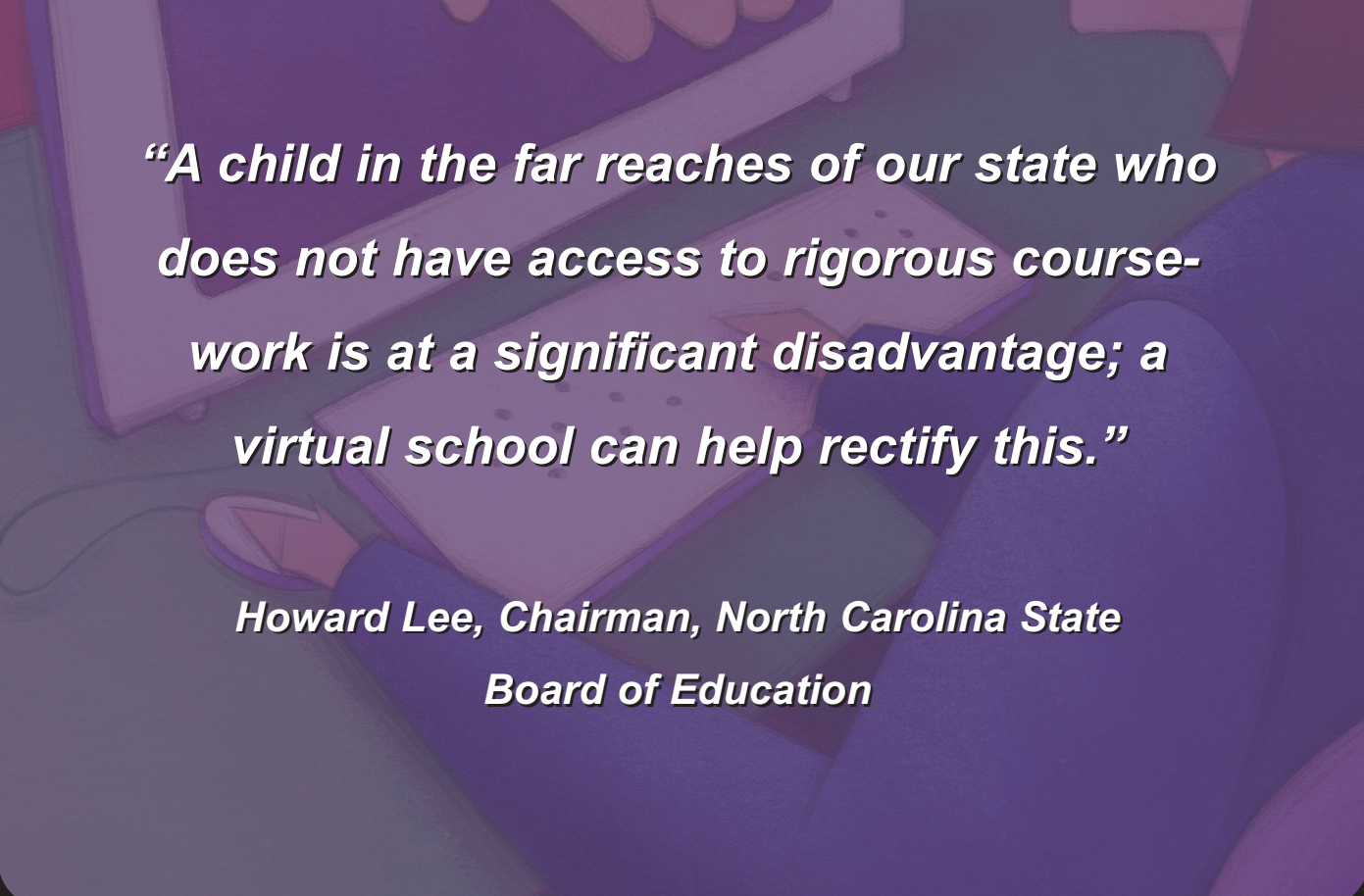
instruction should continue to be developed and implemented as well as included as a part of continuing education.

- Addressing Equity. All areas of the state should have equity in their ability to access e-learning opportunities provided and should be available to all economic, geographic and special populations.
- Providing accountability to local communities including students, instructors, administrators and taxpayers.
- Supporting a funding and pricing model that allowing for equal and fair access by citizens.
- Supporting accredited degree programs, taught by certified instructors at SAC accredited instruction
- Supporting training courses that meet industry certifications.
- Supporting broader elements of a learning community. E-learning doesn't necessarily have to be instructor led 'courses', it may promote the blogging element for instance, where people can discuss or read about major issues of concern from experts - like on health, finance, employment etc. Other emerging technologies such as the audio blog format should also be investigated.

A stylized illustration in shades of orange and red. It depicts a hand holding a globe, with the hand's fingers visible at the bottom. The background is a solid orange color.

“Virtual Learning is about options, no longer do we need to “catch the bus to school” to get access to a world class education.”

***Lt. Governor Bev Perdue, Chairman, Business
Education Technology Alliance***

A stylized illustration in shades of purple and blue. It depicts a hand holding a tablet, with the hand's fingers visible at the bottom. The background is a solid purple color.

“A child in the far reaches of our state who does not have access to rigorous coursework is at a significant disadvantage; a virtual school can help rectify this.”

***Howard Lee, Chairman, North Carolina State
Board of Education***