Commission on Educational Technology

Nevada State

Educational Technology Plan

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Prepared by Department of Education
and
Commission Staff

Acknowledgments

This document is reviewed annually and revised if necessary by the Department of Education, on behalf of the Commission on Educational Technology.

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I. Executive Summary

A. Background

Although norm-referenced student test scores are not expected to increase immediately as a result of technology implementation, they are expected to increase over time. The public and the legislature expect schools to gather and analyze a variety of indicators that will demonstrate the impact of technology on student achievement and clarify questions on effective strategies. The financial and human investment required to achieve this future is considerable. However, the returns for students and teachers, as well as the public, are substantial. The educational community must work together with government, business and industry to find the resources that will be needed. Finally, progress must be carefully monitored and evaluated to ensure that all students' needs are addressed, that resources are wisely allocated, and that improved student achievement remains the focus of everyone's collective efforts. These are complex goals that may involve many individuals and have price tags beyond what might be considered affordable.

The creation of the Nevada Education Reform Act of 1997 (NERA) by the state legislature placed an emphasis on education, including technology. NERA supports a standards-based curriculum that focuses on improving student achievement and the integration of technology into the classroom. The intent of the legislation was to make technology a part of classroom instruction, provide access to valuable information, and enhance the technology skills for the workforce of the future.

From NERA came Senate Bill 482, which in part amended NRS 388. Senate Bill 482 formed the Commission on Educational Technology. The Commissioners are appointed by the Governor and legislative leaders to represent business, schools, libraries, parents, the university system and the legislature. In addition to the appointed members, there are two ex-officio members, the State Superintendent of Public Instruction and the Director of the Department of Information Technology. Each member serves a term of two years and may be re-appointed with no limitation on the number of terms they may serve.

Senate Bill 482 set out specific tasks for the Commission to accomplish:

- The Commission shall establish a plan for the use of educational technology in the public schools, submit it to the governor and review the plan annually.
- The Commission shall develop technical standards for educational technology and any electrical or structural appurtenances necessary.
- The Commission shall allocate money to the school districts from the Trust Fund for Educational Technology.
- The Commission shall establish criteria for the board of trustees of a school district that receives an allocation of money from the Commission.

B. Technology Plan Goals

The Commission's intent in preparing this state plan is to help districts make more rapid and successful progress in achieving the integration of technology into the educational experience of all students.

- **The Nevada Commission on Educational Technology developed four main goals for the successful integration of technology into the curriculum:**

  The technology infrastructure supports appropriate access for all students and teachers, regardless of their geographic location;
  In the past, many schools and districts did not budget for the repair and maintenance needs of equipment purchased from one-time resources. The significant investment made by taxpayers of Nevada requires that it be protected by the identification of an on-going funding stream to pay for repair and maintenance needs. Even with the investment made by Senate Bill 482, Nevada will still rank behind other states in the ratio of students to computer. To be able to have reasonable expectations about technology impacting student learning, Nevada needs to continue to invest in building the availability of multimedia computers in schools.

- **High-quality content materials are available to support a standards-based curriculum;**

  As new academic standards are adopted per Senate Bill 482 (Chapter 473, Statutes of Nevada, 1997), a statewide effort to redesign curriculum will be needed. This will be an opportune time to work closely with the Nevada Council to Establish Academic Standards to determine how technology can be integrated into the curriculum. As more students and teachers gain access to the Internet and other technologies during the same time frame, there will be an increasing need to identify and obtain high-quality instructional materials in support of the new curriculum in a variety of formats.

- **Integration of technology into the new standards-based curriculum is achieved through a strong professional development program;**

  Teachers need access to technology and support for their own learning that will enable and empower them to integrate technology into their teaching and learning strategies. Distance learning can play an important role in delivering professional development to remote areas in Nevada.

- **Timely technical support is available for teachers, students and staff.**

  As more technology is poured into public schools, the need grows to provide competent, reliable support for teachers and students.

C. Levels of Technology Integration

To help legislators focus on the most serious needs and key lever points that might make a difference in causing significant movement in bringing technology to every child in Nevada., the Commission has established standards for implementing technology in schools (Exhibit 1). These standards first define what teachers and students should be able to do with technology and then establishes three levels of technology use.

- **Level 1** establishes a minimum level of technology as one multi-media computer in each instructional area or the equivalent, connected to the Internet, with supporting resources, professional development and evaluation.
- **Level 2** focuses on curriculum integration, extends professional development and evaluation to become focused on student achievement, and
- **Level 3** defines a technology-rich environment that fully supports student learning using technology, and represents the full-integrated classroom.

See details of these Levels in Section V, Framework for Technology Integration

The Commission's objective in allocating the previous state educational technology funding was to enable as many schools as possible to reach Level 1. The focus of this plan, therefore, is to ensure and to encourage schools to move beyond Level 1 to focus more on the integration of the technology into the teaching and learning process.

II. Commission on Educational Technology

Senate Bill 482, enacted by the 1997 legislative session, provides a blueprint for significant educational reform in Nevada to support a standards-based curriculum that focuses on improving student achievement. In that legislation it was noted that Nevada students must be able to perform at high levels of academic achievement to participate in the global economy of the 21st Century. In addition to establishing high academic standards in all core curriculum areas, the statute provides for the incorporation of technology into the teaching and learning of every school to support student learning. The intent of the legislation is clearly to make technology a part of classroom instruction, provide access to valuable information, and provide the means for the workforce of the future to enhance or extend their knowledge and skills.

To carry the torch for the integration of technology in Nevada public schools, Senate Bill 482 established the Commission on Educational Technology (CET or "the Commission" hereafter), an eleven-member board composed of educators, parents, business leaders, and legislators. The Commission is charged both with establishing a plan for the future direction of educational technology in the State, and with overseeing the allocation of funding immediately available through Senate Bill 482. The Commission must be a leader as well as a monitor in carrying out these responsibilities. The Commission also has responsibility for establishing statewide technical standards for hardware, software and wiring.

A. Mission Statement

The mission of the Commission on Educational Technology is to establish a statewide plan for using technology as a tool to improve instruction and increase academic achievement of the children in Nevada's public schools and to allocate funding available for educational technology in a manner that best serves Nevada's schools and libraries. The plan will guide the State Department of Education and school districts in using available resources efficiently and effectively to increase students' and teachers' access to technology, expand the use of technology in the classroom, teach students skills demanded in the workplace, train teachers to integrate technology into their instructional programs, and evaluate the effect of technology upon learning.

B. Goals Statements

The primary focus of the Commission on Education Technology shall be to provide our children with the tools and techniques they need to enter the world of the twenty-first century through the application of appropriate technology to improve the teaching and learning environment and to increase pupil achievement. Technology has fundamentally transformed the workplace during the recent period of American history; however, its full impact has not been felt in all the nation's classrooms.

The following goals relate directly to the two primary duties of the Commission - the planning/standardization function and the distribution of educational technology funds.

Goals Relating to Establishing Technology Plan and Standardization:

The Commission must establish a statewide plan and associated policies for the effective use of current and future technology within Nevada's system of public education. The plan must form the foundation for state and school district utilization of technology within the classroom and guide future budgeting and purchasing decisions. The plan will also guide educators in technology-relevant issues in choosing instructional methods and materials, in developing curricula, and in training and hiring teachers.

The Commission must ensure that school district technology plans are part of an overall district plan to improve pupil achievement. Just as the statewide technology plan is part of the state's overall strategic reform effort to increase pupil achievement, district level technology plans should be part of an overall district strategic plan for improving student achievement. As a part of the Nevada Education Reform Act, the Commission will provide a blueprint for extensive and effective utilization of computers, networking, and other programs to support a broad program of curricular and systemic reform. The role of technology within the broader context of the reform effort is to act as a catalyst that, when combined with other reform efforts, will help schools to successfully attain the new state educational goals and standards.

In writing the statewide technology plan and distributing funds, the Commission must emphasize the importance of successful integration of technology in the classroom. Targeting the effective utilization of technology within the classroom will serve as a key to successful implementation. District plans must be encouraged to include strategies that involve linkages to specific classroom procedures, such as evidence that teacher training programs focus on developing lesson plans that integrate technology into existing curricular frameworks.

Goals Relating to Formulating Policy for Distribution of Education Technology Funds:

As provided by statute, the Commission will determine the distribution of education technology funds under its authority in accordance with the technological needs and the relative wealth of Nevada's school districts, libraries, and youth training centers. All funding decisions will be predicated upon the applicant's projected ability to improve student achievement and their commitment to measure and report such an improvement. Allocations shall be made after a prudent evaluation of applications based upon the Commission's priorities, the applicant's fiscal capacity and need, and the merits of the applicant's plan.

The Commission shall adopt policies and make funding choices that encourage libraries, school districts, and youth training centers to coordinate all future budgeting and expenditure decisions within a single plan, regardless of funding source. Multiple funding streams and other resources should be coordinated within the technology planning framework.

III. Vision for Technology-Supported Student Learning

Technology-supported student learning is part of the "new basics" required for participation in the Information Age. If Nevada's youth are to compete equally with youth from other states and nations in the global economy of the 21st Century, it is imperative they have the technology and information literacy skills they will need to be successful. Technology, as a tool to support student learning, can give all students, including students with disabilities and those traditionally underserved, the chance to master basic skills in the core academic areas, and opportunities to apply those skills in project-based activities, using video, the Internet and other print and non-print resources, to provide them with personal learning experiences that are meaningful to them. Teachers must be empowered to support all students learning, including students with disabilities and those traditionally underserved, with professional development that focuses on integrating technology, along with the new standards, into their teaching and learning strategies for the new curriculum. School administrators must be recognized as leaders in building a strong school culture that supports technology as a tool to engage students in their learning activities. And parents play a crucial role in incorporating technology into the curriculum by understanding and supporting efforts to bring schools into the Information Age. Students, staff, and families must have the information literacy skills to be life-long learners who can renew or extend their knowledge and skills, as needed, to participate in the workforce of the future.

The financial and human investment required to achieve this future is considerable. However, the returns for students and teachers, as well as the public, are substantial. The educational community must work together with government, business and industry to find the resources that will be needed. Finally, progress must be carefully monitored and evaluated to ensure that all students' needs are addressed, that resources are wisely allocated, and that improved student achievement remains the focus of everyone's collective efforts.

IV. Goals for the Use of Technology to Support Student Learning in Nevada

The Commission's mission under Senate Bill 482 was to develop a state plan, establish standards for technology use by schools, and allocate funding to districts provided in the bill in a manner that would support the districts and schools in greatest need. Part of their function as a Commission is to establish goals by which the progress of schools in implementing technology to support student learning may be gauged. The vision put forth by the Commission requires a commitment and agreement to advocate and promote these goals in support of schools and districts.

Goal 1: The statewide technology infrastructure for K-12 supports appropriate access for all students, including students with disabilities and those traditionally underserved, and teachers in Nevada public schools, regardless of their geographic location or economic status.

a) Multiple uses and forms of technology (including video capability) are used in all instructional areas (including library/media centers) to accommodate different learning styles and "anywhere, anytime" learning.
b) Voice/video/data integrated networks are widely available to K-12 throughout the state.
c) All video resources are in digital format.
d) Network "bandwidth" is sufficient to support video in classrooms and library/media centers.
e) Satellite downlinks are widely available and used by schools.
f) Parents have access to on-line information about their children and their learning.
g) In the past, many schools and districts did not budget for the repair and maintenance needs of equipment purchased from one-time resources. The significant investment made by taxpayers of Nevada requires that it be protected by the identification of an on-going funding stream to pay for repair, maintenance, upgrading needs.
h) A K-12 telecommunications plan should be developed and implement to address the goals identified in this plan. (See Recommendation E under "Supporting Technology Integration" for further details.)

Goal 2: High-quality content materials are available and accessible to both students and teachers to support a standards-based curriculum.

a) Technology-supported materials and resources that address state standards for academic areas are used by all teachers to plan for instruction.
b) Every student, including students with disabilities and those traditionally underserved, regardless of location, has access to the content and curriculum they need to meet state standards for graduation, to enter the world of work, or to meet college entrance requirements.
c) Learning takes place in both virtual and physical learning spaces across the state.
d) Model classrooms/programs have been developed to support professional development for teachers, and are open and available for teachers to visit and observe.
e) Textbooks are readily available in electronic format to provide students and teachers with up-to-date instructional materials on a timely basis; and access to information databases will supplement library books and reference materials.
f) Student assessments, in a variety of formats, are collected and analyzed at the school, district and state levels to understand and document the impact of a technology on student learning.
g) All schools and districts have acceptable use policies, copyright infringement regulations, and other policies needed to ensure the ethical use of information resources.
h) Districts will need to redesign their curriculum utilizing the new state standards in each subject area and technology should be considered as an integral part of those curricula. A statewide collaborative effort to do this will be a cost effective way to ensure that students located in small, rural districts have access to a high quality curriculum.
i) The number of teachers and students, including students with disabilities and those traditionally under-served, that actively use the Internet must be increased as rapidly as possible, while ensuring that young students are exposed only to developmentally appropriate instructional materials and activities.

Goal 3: Integration of technology in the curriculum is achieved through a strong professional development program.

a) Professional development opportunities, delivered in a variety of formats, are available that support getting started with technology, integrating technology, and leading with technology.
b) Incentives must be found to encourage staff participation in professional development in support of technology integration such as:
    i) A low cost technology purchase program for teachers and administrators
    j) Substitutes for teachers so they can visit model classrooms/programs to help them learn how to integrate technology
    k) Stipends to support their independent efforts after hours, on weekends, or during the summer.
    l) Professional recognition
c) All levels of staff and community are considered as to their professional development needs for technology to support student learning (superintendents, principals, administrative staff, teachers, technology support staff, parents, students, community, and business.) Administrative leadership and participation is vita to the success of any educational change effort. Administration supports and advances technology professional development in a variety of ways:
    - By modeling or using technology in day-to-day management and learning activities.
    - By promoting technology as a key restructuring and/or transforming tool.
    - By recognizing and maximizing professional development opportunities to unlock the power of emerging technologies.
    - By participating in technology-based professional development activities.
d) Districts demonstrate their commitment to technology integration by establishing a budget line item for technology professional development.
e) Districts work together to create a statewide "community of learners"—teachers working together to understand and implement technology integration. Provide educators with opportunities for learning how to integrate technology into their teaching and learning strategies. Teachers should experience a hands-on process for integrating technology into the curriculum. The most effective way to successfully integrate technology into the curriculum is to create learning cultures in each school. A team approach will allow the sharing, distributing, and empowerment of all through coaching and mentoring.
f) Teacher certification and licensing procedures have been modified to ensure pre-service and in-service technology expertise to support student learning. State licensing procedures should be modified to require that teachers and administrators demonstrate basic computer literacy for initial licensure. State continuing education requirements should be modified to require that teachers and administrators demonstrate a minimum level of

proficiency in integrating technology into their teaching and learning strategies.

g) A full-time position should be established in every district to coordinate the curriculum and professional development needs of teachers and principals to integrate technology in the curriculum. These individuals should be targeted by statewide efforts to organize and coordinate a statewide professional development program.
h) An annual teacher conference on technology integration should be held where teachers and administrators can come together to learn from each other and from experts on how to integrate technology into teaching and learning. They can gain the skills for understanding change, learn how to lead an innovative school, create a shared vision, and apply tools for implement a well-developed technology plan.
i) Establish a series of regional teacher development centers at targeted schools which can become models for technology integration, serve as software preview centers, and provide a rich environment for technology exploration by teachers.
j) Develop an on-line teacher mentoring program to build a community of learners that will allow teachers and administrators to communicate with each other about the use of technology in support of student learning, including students with disabilities and those traditionally under-served. Teacher developed "units of practice" could be cataloged online for ease of sharing among teachers throughout the state.
k) A statewide assessment of current teacher and administrator utilization of technology in instruction should be undertaken to form a baseline for future analysis.

Goal 4: Timely technical support is available for teachers, students and staff.

a) On-site technical support is available to meet school and instructional needs (system analysis, software/desktop applications, network infrastructure, basic trouble-shooting, and maintenance.) Teachers need immediate support for technology implementation efforts in their classrooms, both in terms of basic troubleshooting when there are technology problems, and to mentor them in effective strategies for integrating technology in the classroom. Each school site should plan to have such a person available on a regular basis, though a full time position may not be required at the elementary level, depending on the size of the school.
b) Districts will form partnerships with established state agencies and/or corporations to assist in providing needed support.
c) A state "help desk" has been enhanced to support various environments/applications.
d) District technical support staff must have adequate training to install and support the technology. Training in network configuration, servers and routers, and network administration are key needs. Optionally, districts may wish to consider establishing certification programs in partnership with business and industry to train youth to manage school networks, such as the CISCO program.

V. Framework of Technology Integration

The Commission has established standards for implementing technology in schools. These standards first define what teachers and students must be able to do with technology and then establishes three levels of technology use.

- **Level 1** establishes a minimum level of technology as one multi-media computer in each instructional area or the equivalent, connected to the Internet, with supporting resources, professional development and evaluation.
- **Level 2** focuses on curriculum integration, extends professional development and evaluation to become focused on student achievement, and
- **Level 3** defines a technology-rich environment that fully supports student learning using technology, and represents the full-integrated classroom.

The Commission's objective in allocating Senate Bill 482 funding was to enable as many schools as possible to reach Level 1. The focus of this plan, therefore, is to ensure and to encourage schools to move beyond Level 1 to focus more squarely on the integration of the technology into the teaching and learning process at every school.

Levels of Expected Technology Integration in Nevada

Level I (Low Tech) Highest Priority	**What Students and Teachers Can Do**	**Networking/ Infrastructure**	**Hardware**	**Software**	**Evaluation**
	▪ Students have at least one hour of direct use of technology per week. ▪ Teachers have access to a computer, printer, and video display device. ▪ Teachers receive intermittent training in the use of technology. ▪ Teachers use technology to manage instruction and communicate with parents on an inconsistent basis. ▪ Students and teachers inconsistently use technology for presentations, projects and desktop/online publishing. ▪ Technology is inconsistently integrated into the curriculum, ▪ School does not have access to multiple interactive learning	▪ Web/Internet access is available in each classroom. ▪ Equivalent of video and television technology available in each classroom. ▪ 80% of the technical problems are solved within a week. ▪ All district buildings are connected through a district WAN.	▪ At least one network computer capable of Web/Internet access in each classroom. ▪ At least one network computer has sufficient memory to run the latest multimedia learning software in each classroom. ▪ Some computers in each school will have sufficient storage to archive multimedia, web and internet resources.	▪ At least one classroom computer has up-to-date networking and operating system software. ▪ A classroom computer has up-to-date productivity software. ▪ Web browser software available in all classrooms. ▪ Curriculum-related instructional software is available. ▪ Teachers have access to e-mail in the classroom.	▪ Completion of installation of a networked computer and other video support technologies in each classroom. ▪ Students and teachers successfully complete a baseline test on technology concepts, applications and skills.

Level I (Low Tech) Highest Priority	**What Students and Teachers Can Do**	**Networking/ Infrastructure**	**Hardware**	**Software**	**Evaluation**
	technologies that integrate voice, video and data which can be incorporated into distance learning				

Level II (Mid Tech)	**What Students and Teachers Can Do**	**Networking/ Infrastructure**	**Hardware**	**Software**	**Evaluation**
	▪ Students have at least two hours of direct use of technology in the classroom per week. ▪ Teachers receive consistent training in the use of technology ▪ Teachers have access to a computer, printer and video display device in their classroom. ▪ Students and teachers use technology for some presentations, projects and desktop/online publishing. ▪ Technology is consistently integrated into the curriculum, as appropriate. ▪ Teachers use technology to manage instruction and communicate with parents on an consistent basis ▪ Schools have access to at least one multiple interactive learning technology that integrate voice, video and data which can be incorporated into distance learning	▪ Web/Internet access is available on more than one computer in each classroom. ▪ Video and television technology available in each classroom. ▪ 80% of the technical problems are solved within 3 working days ▪ All district buildings are connected through a district WAN. With at least ISDN speeds or better.	▪ There is at least a ratio of five students to each computer in each classroom. ▪ All classroom computers have sufficient memory to run the latest multimedia learning software applications. ▪ At least one computer will have sufficient storage to archive multimedia, web and internet resources in each classroom.	▪ Some classroom computers have up-to-date networking and operating system software. ▪ Some classroom computers have up-to-date productivity software. ▪ Students and teachers have access to e-mail in the classroom. ▪ Curriculum-related instructional software is available in the classroom. ▪ Web browser software available on all computers in all classrooms, some capable of running streaming video.	▪ Students and teachers demonstrate minimum computer literacy. ▪ The following areas are expected to show improvement: ▪-Student attendance ▪-Truancy statistics ▪-Discipline referrals ▪-Classroom participation ▪-Student performance ▪-School performance ▪-Curriculum improvement ▪ District and school accountability information published on the district Web site.

Level III (High Tech)	**What Students and Teachers Can Do**	**Networking/ Infrastructure**	**Hardware**	**Software**	**Evaluation**
	▪ Students will have direct use of technology on a	▪ High speed web/Internet access is available on more	▪ There is at least a ratio of three students to each	▪ All classroom computers have up-to-date	▪ The following areas are expected to show

Level III (High Tech)	**What Students and Teachers Can Do**	**Networking/ Infrastructure**	**Hardware**	**Software**	**Evaluation**
	daily basis. ▪ Teachers have a dedicated computer, printer and video display device in their classroom ▪ Teachers model the use of technology ▪ Teachers, students, administrators and parents communicate via technology. ▪ Teachers and students can select appropriate technology tools and resources when they've determine technology is useful. ▪ Teachers model the use of technology to manage instruction and communicate instruction. ▪ Students and teachers model use of technology in presentations, projects and desktop/online publishing. ▪ Technology integration into the curriculum is modeled appropriately. ▪ Schools have access to multiple interactive learning technologies that integrate voice, video and data which can be incorporated into distance learning.	than one computer in each classroom. ▪ All buildings and classrooms are connected to the district WAN with fiber optic cable. ▪ 80% of hardware, networking and software repairs are solved within the same day. ▪ Video and television technology, such as video-conferencing, video on demand, and distance learning, is utilized in every classroom.	computer in each classroom. ▪ All computers have sufficient memory and processor speed to run the latest multimedia applications. ▪ All computers will have sufficient storage to archive multimedia, web and internet resources in each classroom.	networking and operating system software. ▪ Students and teachers have access to up-to-date multimedia software. ▪ Students and teacher have access to Internet/Web browser and video production software needed to access multimedia resources. ▪ Students and teachers have access to e-mail, and district Intranet learning resources in the classroom. ▪ All classroom computers have up-to-date productivity software including multimedia word processing, spreadsheet, database, presentation, and desktop publication software. ▪ Students and teachers have access to up-to-date instructional software. ▪ Students and teachers have access to interactive simulation software. ▪ Web browser software available on all computers in all classrooms, capable of running streaming video. ▪ Curriculum-related instructional software is available in all classrooms.	improvement: ▪ -Student attendance ▪ -Truancy statistics ▪ -Discipline referrals ▪ -Classroom participation ▪ -Student performance ▪ -School performance ▪ -Curriculum improvement ▪ -Ability to use multiple technology tools. ▪ In addition: ▪ Students can create a curriculum-related publication. ▪ Students can make a presentation using multimedia tools. ▪ Students can complete a curriculum-related project using multimedia tools. ▪ District and school accountability information is published on the district Web site.

VI. Evaluation

Evaluation of the impact of technology on student learning is critical to monitor the progress schools are making in establishing an environment that supports student learning, including students with disabilities and those traditionally underserved, and that includes the identification and/or development of assessments that successfully measure student learning with technology. This long-term evaluation must incorporate the following components:

- Student assessments must be focused on the long-term impact of technology on student achievement, through information literacy and technology skill development and may include criterion-referenced tests as well as non-traditional assessments, such as portfolios and performance-based tests, or norm-referenced tests in the traditional academic areas.
- Teacher and administrator utilization of technology must be assessed on a regular basis to determine how the technology is being used to address the curriculum.
- Best practices of technology integration must be documented through teacher observation and model classrooms/projects that will help establish the norms for instruction using technology.

The evaluation process must be considered for funding when allocating educational technology funding. Fifteen percent of the funding for technology projects should be allocated for evaluation. Five percent of the evaluation funding should be used at the state level with ten percent used at the district/consortium level. This will include required participation in statewide evaluation workshops. Annual evaluation reports will be required before the future funding will be allocated.

The Commission will develop an evaluation process to determine the impact of technology on student achievement and the school environment. In order to fully gauge the impact of technology on student achievement and the school environment a number of dimensions must be evaluated. The following dimensions must be considered to be part of a complete evaluation process. Through the use of tools/instruments and processes for each dimension, the Commission will be able to completely evaluate the impact of technology on the instructional environment and student achievement.

The seven dimensions that the Commission should consider as part of a complete evaluation process are detailed below. These dimensions are based on a project from the Milken Exchange on Education Technology. The guiding questions with each dimension below are components that should be included in each evaluation process or tool/instrument.

1. **Professional Competency**
    a. Are the faculty and staff proficient, knowledgeable and current with technology?
    b. Has the teacher's fluency with technology translated into unique opportunities for students to learn more quickly, with more depth and understanding? Is the teacher's knowledge about technology's impact in his/her field of study reflected in the context of his/her students learning?
    c. Are teachers using technology and communication networks to advance their professional practice? Are teachers knowledgeable and current with the technology and its impact in their field of study and the larger society?
    d. Through their use of technology and telecommunications are teachers creating learning contexts that require students to take on more independent roles in their own learning?
2. **Learners**
    a. Are learners becoming proficient using technology and communication networks for educational endeavors?
    b. Does the use of technology make it possible for the learner to acquire the basic skills with more depth?
    c. Does the use of technology make it increasingly possible for the learner to engage in practices that lead to new ways of thinking, understanding, constructing knowledge and communicating results?
    d. Are learners using technology, communication networks and associated learning contexts to engage in relevant, real-life applications of academic concepts? Do learners work in parallel the way in which professionals in the workforce use technology?
    e. Is quality access to technology and telecommunications increasing the intrinsic motivation of learners?
3. **Learning Environment**
    a. Are educators establishing a learning environment that requires and enables student teams the use of tools to research issues, solve problems and communicate results? Are educators documenting changes to student learning through anecdotal reporting?
    b. Do the standards, curriculum, instruction and assessment reflect the knowledge-based, global society of today?
    c. Is the school culture one that encourages, enables, and rewards educators and students individually and collectively to improve the learning and teaching processes through the effective use of technology and communication networks?
    d. Do teachers and learners have sufficient access to productivity tools, on-line services, media-based instructional materials, and primary sources of data in a setting that enriches and extends their learning goals?
    e. Is the learning environment a place where the effective use of information and communication technology is modeled for and by students?
4. **System Capacity**
    a. Has the system engaged key stakeholders and the broader community in defining and clearly stating a compelling vision and expectations for technology in schools? Is that vision embraced by the entire system?
    b. Does alignment exist between the technology plan and existing policies and practices?

c. Is the district ensuring that educators and support staff have the ability to implement the technology plan into compelling and meaningful learning activities for all learners?
d. Is there a team of leaders that embraces the technology plan and is in a position to facilitate the system changes that are necessary to reach the vision of the technology plan? Is the vision for improved learning through technology a design factor across the entire education system?

5. Technology Capacity

a. Do schools have an installed base of modern technology equipment to support the learning, communication, and administrative goals of the education system?
b. Is the connectivity adequate to support current and rapidly growing demands created by the learning, communication, and administrative requirements of the educational system?
c. Is there adequate technical support to provide timely, expert trouble-shooting, technical assistance, on-going maintenance, operation, and upgrades?
d. Are educational staff needs in educational technology being met? Is there a high level of satisfaction?
e. Are the facilities within the system technology-ready? Do standards for facilities and infrastructure include technology requirements?

6. Accountability

a. All technology initiatives will have clear goals, measurable objectives, implementation plans, assignment of responsibilities, and timelines.
b. Disaggregation of data should reflect state and federal requirements.
c. Have clear goals been set, accompanied by logical implementation and change strategies, measurable objectives and associated metrics including:
d. Transient Rate
e. Daily Attendance
f. Dropout Rate

7. Student Achievement

a. Technology evaluations must be correlated to ongoing, in-classroom assessments of content areas.
b. Is there a well designed data collection and analysis process that tracks progress, leading to data-driven decisions, that provides evidence as to whether or not the implementation is leading toward the goals?
c. Is the data analysis appropriately informing decision making related to technology?
d. Does the data collection and analysis process include:
e. Standardized Test Scores
f. Evaluation of schools that were funded with technology in the remediation process
g. Evaluation of Title I funded technology programs
h. Evaluation of Federal Educational Technology Programs
i. Other technology based efforts

VII. Coordination with State Academic Standards

The high, measurable standards in reading/language arts, mathematics, science, social studies, computer education, health, physical education are the cornerstone for strengthening Nevada's education system and for ensuring that all students in the state have access to a rigorous program of study.

Convinced that technology can play a powerful role in promoting student achievement, the Council to Establish Academic Standards and the Commission on Educational Technology work cooperatively to ensure that happens.

The standards for the core academic areas are the foundation for further and more specific recommendations on curriculum redesign, curriculum materials development, professional development and evaluation/assessment tools to integrate technology into teaching and learning.

Therefore, technology components will be an essential element in academic standards for all content areas.

VIII. Supporting Technology Integration

A. Develop and promote distance learning in Nevada

Developing and promoting distance learning in Nevada is important to the support and integration of technology because:

- Why is Distance Ed is important?
    - Addresses Different Learning Styles.
    - State Rurality and Remote.
    - Increases 21st century skills in existing and future educators.
    - Professional Development
    - Increasing Student Achievement
    - Tremendous unmet need for teachers.
    - Breaking the barriers of the Digital Divide
    - Distribution of Population in the State.
    - Population growth.
    - Equitable educational opportunities
    - Connect to economic development indicators.
- Learning resources can be distributed throughout the state by various Types of Technologies
    - satellite
    - cable
    - ITFS
    - compressed video
    - video conferencing
    - Internet
    - Assistive Technologies
    - Emerging Digital resources
- Connecting to National and State Standards
- Connecting to NCLB
- Use of Professional Development and other communications for the business of education.
    - Parent Communication
    - Research
    - Changing economic environment.
    - Maximizing Resources (educators)
        - Examples:
            - A teacher that specializes in JAVA from Las Vegas, could teach a D.E. Class to students in Washoe w/o hiring an additional teacher)
            - It is not feasible to hire an AP Algebra Math teacher to teach two eligible students in the smaller school districts.
    - Dual Credit Courses

A variety of technologies are being used in support of existing courses including satellite, cable, ITFS, compressed video, video conferencing and the Internet. Some of these require significant investments by schools for participation. Forty years of research indicates that distance learners, regardless of the technology, learn as well as students in face-to-face classrooms. It appears that student motivation and instructional design are more critical for student achievement than the technology used to transmit instruction.

B. Public Libraries as Education Partners

In 1994 the Department of Education conducted a national survey in regards to the role of public libraries in relation to national education goals. The results of the survey showed most of those surveyed, especially ethnic minorities, regard public libraries as a very important source of support for their community's educational aspirations. Also the lower the education and income level of the public, the higher they rate the educational importance of their public library.

Two of the most important roles public libraries play are:

- Educational support center for students of all ages
- Discovery and learning center for preschool children

The primary finding of the survey was:

> *Libraries are fundamental to the American education experience…libraries can be dynamic learning centers for everyone and contribute to helping the nations communities achieve national education goals.*

SOURCE: *The Roles of the Public Library in Society-The results of a national Survey: Final Report*, by George D'Elia, in collaboration with the University of Minnesota Center for Survey Research and the Gallup Organization (July 1993)

In 1994 the *Digital Divide, Information Literacy* and even the Internet as an educational tool were unknown factors in American education. In 2001 these issues are critical, and public libraries are increasing their role as an education partner in their communities.

Nevada has 23 city, county or district library systems. These systems have 82 physical locations open to the public at least 40 hours per week. Many of their resources are available via the Internet and provide library services beyond their physical walls and service hours to 24hours a day –7 days a week.

Public libraries in Nevada are committed to providing access to technology to support student learning. This support begins as early as emergent literacy programs such as preschool computer activities and continues through the student's school years to college preparation and beyond.

The critical component of the public libraries role in information literacy is the wealth of resources available in Nevada libraries. Nevada public libraries all deliver information databases online via the Internet. Statewide database licensing that included schools and public libraries provide magazine, newspaper resources, curriculum materials and

encyclopedias to every student in schools, every patron in public libraries and offers at home access beyond school and library hours. Nearly every public library offers their holdings to be searched via any computer connected to the Internet. In Nevada, over 5 million materials are available via each library's (OPAC) Online Public Access Catalog.

In addition to these databases, librarians statewide spend significant time researching and organizing free Internet sites recommended for their quality and their ability to support the curriculum in K-12.

An important aspect of the partnership of education and public libraries is the role libraries play in homeschooling. In most communities the only educational resource available to homeschoolers is the public library. Home schooled children may not have the same access to information as other children, and libraries are in a position to help them, particularly in technology resources.

The future of the public library partnership in meeting education goals depends on a concerted effort for the collaboration of resource allocation to provide adequate support for statewide licensing of high quality content. Critical to the success of an informed citizenry is high-quality content in an organized and accessible format that provides learning opportunities for students, teachers and library patrons wherever and whenever they need the information.

C. Ensure the needs of students with disabilities and those traditionally under-served are addressed.

In classrooms all over the country, students with physical, sensory, intellectual, and emotional disabilities are working on their own, researching homework assignment, solving math problems, drafting compositions, and keeping up with their classmates. Some are doing more than just getting along; they are excelling. Students are accomplishing these feats with the assistance learning tools and strategies that years ago could only be imagined.

Researchers and developers have designed an array of learning tools that identify students' needs, foster higher-order thinking skills, and create independence inside and outside the classroom. Challenges once considered impossible to overcome are now surmountable for many students with disabilities, allowing them to become productive workers and active and independent learners. Many tools and strategies are can be used by students with a wide range of special needs.

Learning tools are the instructional devices, media, and materials that help students with physical, sensory, intellectual, and emotional disabilities gain knowledge, develop complex thinking skills, and become independent learners. Decisions on which tools to use and how to use them are shaped by instructional strategies designed for individual students along the basis of the student's needs, strengths and learning goals.

User-friendly learning tools and sound instructional strategies that are research-based are important investments in our children's education. These learning tools and instructional strategies can help teachers guide students along the most direct path to high

achievement. If used and supported appropriately, technology as the potential to help students learn faster, better, and in some cases, at lower-than-expected costs. It has already been demonstrated in classrooms across the country that technology is capable of energizing the learning process, of easing burdensome reporting requirements, of improving precision in student assessment, and of increasing the effectiveness of teaching – adding up to higher achievement for all students.

In order to The Nevada Department of Education has funded the Nevada Special Education Technology Assistance Project since 1986 when it first became apparent that assistive technology could benefit special education students in Nevada. Federal mandates place considerable responsibility on schools to provide services in this area. The project has evolved over the years in response to recognized need, federal regulation, and the desire to provide quality services in the state.

The Nevada Special Education Technology Assistance Project has aided students with disabilities, their parents, and the professionals that serve them. The services provided by the project have made assistive technology, as prescribed by regulations and best practices in education, more accessible to those who may need them. Students with disabilities need to be included in all technology integration strategies. One of the key points in the Individuals with Disabilities Education Act (IDEA 97) is that technology needs to be taken into account in the development of an Individual Education Plan (IEP). The following key strategies for students with disabilities and will foster the technology components of IDEA 97.

- To disseminate information about assistive technology in general, and about the project specifically
- To provide technical assistance with assistive technology products.
- To facilitate assistive technology assessments.
- To provide technical assistance in individual education plan (IEP) and curriculum development

D. Ensure the needs of the Nevada Youth Training Center and the Caliente Youth Center are addressed.

Nevada has two state operated Youth Training Center facilities that are detention centers for youths who have been institutionalized by the State of Nevada District Courts for correctional care. Students are typically in a center for a period of nine to twelve months as per direction of the Court. Each student, as required by the Nevada Department of Education, is administered the Test of Adult Basic Education (TABE), as their entrance and exit exam.

The Nevada Youth Training Center (NYTC) is located on the east of Elko and is a "staff secure," residential correctional facility for male juvenile offenders. Youths between the ages of twelve and eighteen are committed to NYTC by the State of Nevada District Courts for correctional care.

NYTC includes Independence High School. Independence High School is a fully accredited, year-round school that is not part of any school district. It is funded directly by the Nevada State Legislature. This is a year-round high school where students transfer in and out on a continuous basis, year around. The transient nature of the student body can be appreciated in light of the fact that over 600 individual boys are served at the facility each year, while less than 200 are students at any one time. Because of this, and because student academic achievement varies greatly, the curriculum is, by necessity, highly individualized in nature.

Caliente Youth Center (CYC) is nestled in the mouth of Clover Creek canyon in the heart of Lincoln County. Since its establishment in 1962, CYC has provided institutional services for court-ordered female juvenile offenders between the ages of twelve and eighteen. During the 1988-89 fiscal years, CYC was opened to males of the same age who are transferred from NYTC. Today, CYC remains co-educational with three cottages of female offenders and four of male.

CYC contracts with Lincoln County School District for educational services. C.O. Bastian High School provides comprehensive educational and vocational services for students in grades 6-12. Many of these students are identified as requiring special education services, and students at the high school level are typically credit deficient. The philosophy of C.O. Bastian High School is to provide educational opportunities to enable each student to improve.

Both NYTC and CYC are entire institutions/schools of at-risk students. Typically, the schools do not have these students for an extended period of time for instruction. This transience creates an environment with unique challenges for the educational staff. Each student requires an individualized learning program to accommodate different learning styles and capabilities. Additionally, many of the students lack motivation and have low self-esteem.