
A community of digital learners

A transformational model of technology for education

**Lincoln County School District
Technology Plan**

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Introduction

Lincoln County School District's vision is to become a model district for curricular technology integration in rural Nevada. The ambitious technology plan outlined here establishes a program to transform our district-wide approach to instructional technology. To achieve this transformation, a systemic model supported by innovative best practices involving all stakeholders is essential; the realities of a globalized economy mean we can no longer expect to meet the needs of 21st Century digital learners through incremental change.¹ Educators and students must learn to navigate this change together. In today's world, we must all become digital learners, a process this plan supports.

The need for transformation

As 21st Century educators, we know a great deal about how our students learn. The same is now true of how educational technology supports learning. Indeed, a great deal of quality educational technology research presently promotes experimentation and innovation in Nevada schools and around the world. Schools and educators are doing great things with educational technology to bring meaningful learning within the grasp of all students. Textbooks and worksheets rapidly are yielding to active, student-centered, real-world learning supported by classroom use of a range of technological tools. Millions of students now publish movies explaining math concepts, create podcasts sharing their interpretations of the latest scientific research, blog to an online audience about their day's learning,² or take a virtual vacation to another country to learn about its people.

Such innovation also exists in pockets within Lincoln County School District. Yet, as the world's school leaders are discovering, pockets of innovation do not create systemic change. Too often, districts' efforts at technology integration fail. Educators usually attribute this failure to a lack of resources—insufficient computers, out-of-date software, or not enough dedicated technology teachers.³ Yet, a lack of technology is not unique to schools. Governments of the future will recognize and respond to the need for consistent,

sustainable funding. In the meantime, we must acknowledge that integrating technology into the classroom is too important and beneficial to be denied to today's students and tomorrow's citizens because we don't have the money.

A model for systemic change

The plan outlined below represents a significant reevaluation of priorities for promoting the use of educational technologies in schools. It helps us learn to create sustainable, district-wide initiatives that increase educators' capacity to effectively embrace the technologies available to them.⁴ And it does so in recognition of the limited opportunities to enhance our inventory of computer hardware, while acknowledging the critical need to provide our students and teachers with the information technology they need. In this way, the plan outlines a model for transforming education in Lincoln County School District.

Goals for Success

Three ambitious goals anchor this plan to student success, district improvement, and 21st Century learning:

- Integrating technology across the curriculum will prepare students for a changing technological world.
- Enhancing and transforming professional growth will foster meaningful technology integration in classrooms.⁵
- Providing sufficient infrastructure and connectivity will enable meaningful, reliable technology integration and professional growth opportunities.

Achieving these goals will require a substantial effort on the part of the district, in concert with local, state, and federal initiatives. The underlying ideologies of each goal are addressed below.

Underlying Ideologies

2008 District Improvement Plan

Integrating technology into all classrooms in an effort to enhance math and reading instruction is a key goal of Lincoln County School District. The goals of the district technology plan reflect district improvement goals by providing a framework for placing sufficient technology into every classroom to foster a student-centered curriculum, in which students have ownership of their learning.

21st Century schools and learners

It is increasingly being recognized that traditional schools are failing to meet the needs of 21st Century learners. The United States finds itself at a critical juncture in its history in which citizens must be prepared to enter a global knowledge economy. Lincoln County School District is committed to transforming its approach to public education to better prepare students to enter a world in which change is a central concept. Virtually every job in today's world requires the productive use of computers. Because technology provides the framework for this "information revolution," teaching technology skills is insufficient; students must experience the ubiquity of technology *at school* and the promise it holds for learning and prompting change.

Collaboration

The collaboration of all stakeholders in education in Lincoln County is critical to the success of this plan. True technology integration cannot occur piecemeal, nor will it become systemic simply by fostering pockets of innovation. The efforts of local teachers, support staff, administrators, and the Lincoln County School Board must be coupled with the support and direct involvement of parents, the local community, businesses, and all levels of government. The importance of leadership in this process cannot be understated.⁶ This plan seeks broad collaborative efforts to bring technology education to every classroom.

Student-centered learning

An important theme emerging from research into cognitive structures and processes and educational technology implementation is the importance of direct, sustained student engagement in the learning process. Lincoln County School District seeks to benefit from this research by placing a variety of technologies directly into the hands of students. Problem solving and technological exploration can be fostered only in student-centered classrooms where students use computers frequently, and this approach will be promoted district-wide.

Goal 1: Integrate Technology across the Curriculum to Prepare Students for a Changing Technological World

Goal Statement

Lincoln County School District will implement strategies for integrating technology into all curricular efforts across the district in an effort to prepare students for entry into rapidly changing world where individual and collaborative technology literacy is integral to success.

Rationale

Placing a computer or two in a classroom, or creating a dedicated computer lab in a school, no longer are viable stand-alone strategies for realizing the benefits of district-wide technology integration. Rather, research now notes the importance of incorporating technology holistically across the broadest spectrum of the K-12 curriculum and beyond. Students respond to relevance in instruction—systemic technology integration and placing students at the center of instruction can provide this relevance.

Benefits for Learning

- Integration of technology across the curriculum provides relevance, interest, and increased transfer of concepts for students, increasing student achievement.
- Educators are freed to focus more on the needs of individual students as technological tools enable greater collaboration among students.
- Student engagement increases when using technology for meaningful tasks, reducing disruptions and creating a safer environment more conducive to learning.
- Technology use enhances teamwork and social skills as students learn to communicate in different ways.
- Ubiquitous technology use by students provides them the opportunity to experiment with communication formats and learn appropriate social skills in a safe environment.
- Classroom technology use enhances meaning for students because most students use technologies outside of school to obtain and process information and to communicate.
- The district will be able to formatively and summatively assess 8th grade technology literacy.

Reality in Lincoln County School District

- Innovative technology integration in the classroom emerges only sporadically and exists in small pockets within the district. Individual, tech-savvy teachers operate in

isolation knowing no structure exists within the district to provide substantive support.

- District policy hampers the use of certain technologies with the potential for increasing academic achievement and engagement.
- Teachers have made great strides in increasing student engagement and achievement, but have long sought the additional relevance technology has the potential to provide.
- Lack of infrastructure limits students' ability to experiment with technological forms of communication in a safe, instructional environment.
- Students frequently have access to more technological tools outside of school than inside. This hampers teachers' ability to deliver a rigorous, relevant, engaging curriculum.
- District middle schools presently have no formal means to assess 8th grade technology literacy.

Target 1

Enable teachers to undertake appropriate, innovative, and meaningful curricular technology integration.

Action Step	Responsible	Onset	Resources Needed	Outcomes
Employ technology integration specialists (technology coaches), and expand the role of school technology coordinators to include school-level support for curricular technology integration at each school site	School Board Superintendent District Technology Coordinator	August 2009	Grant funding under EETT or other source to pay salaries, substitute expenses, and additional costs of the technology coach program.	On-site, as-needed professional development and classroom assistance for teachers, support staff, and administrators seeking to integrate technology
Establish a floating pool of hardware, software, and peripherals for as-needed use by teachers in each school	District Technology Coordinator	August 2009	Seek grant funding and donations	Provide the tools needed to facilitate classroom technology integration across the district

Target 2

Inspire district-wide support among teachers and administrators for the ideals embodied in (1) the Nevada Computer and Technology Standards, and (2) the International Society for Technology in Education's (ISTE) National Educational Technology Standards (NETS)

Action Step	Responsible	Onset	Resources Needed	Outcomes
Awareness session for administrators	District Technology Coordinator	June 2009 and annually	(NETS•S) (NETS•T) (NETS•A) Nevada Computer and Technology Standards	District leadership's support for school-level technology integration and innovation
Awareness sessions for teachers and support staff	District Technology Coordinator Technology Coaches School Technology	August 2009 and annually or as needed	(NETS•S) (NETS•T)	Educators' support for school-level technology integration and innovation

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	Coordinators			
Highlight LCSD teachers and teaching methods that represent best practices in technology integration	Superintendent District Technology Coordinator	August 2009		Reward innovative practices existing in the district

Target 3

Ensure safe, appropriate classroom use of information and communication technologies.

Action Step	Responsible	Onset	Resources Needed	Outcomes
Identify and update LCSD policies to align with the goals of this technology plan	School Board Superintendent District Technology Coordinator	Sept. 2009		Comprehensive district technology policy that promotes the goals of this technology plan
Foster digital citizenship education as an important component of technology instruction district-wide	School Technology Coordinators Principals Teachers	Ongoing	Awareness sessions for principals and teachers	Development of productive digital citizens
Decentralize web filtering responsibilities to schools	Superintendent District Technology Coordinator	October 2009	School server-hosted web filtering Prerequisite is to resolve bandwidth issues	Ensure an appropriate balance between responsive online access for students and educators and relevant web access laws Free IT Director to focus more on technical support issues

Target 4

Use meaningful formative and summative means to assess content area knowledge and technology literacy throughout the district, focusing on 8th grade.

Action Step	Responsible	Onset	Resources Needed	Outcomes
Expand training opportunities for interpreting and using MAP testing data	Superintendent	Ongoing	Seek expert consultants to work with schools	Make better use of district-level student achievement data to improve student performance
Train staff in meaningful assessment of technology proficiency	Technology Coaches School Technology Coordinators District Technology Coordinator	Ongoing	Technology Coaches Formal network of School Technology Coordinators Train-the-trainer sessions for coaches and technology coordinators School site training sessions for classroom educators	Meaningful data on students' levels of technology proficiency

Target 5

Foster more significant relationships between parents / community members and schools' curricular efforts to integrate technology.

Action Step	Responsible	Onset	Resources Needed	Outcomes
Establish a county-wide committee of community members, parents, non-tech educators, etc. to extend this plan's scope into the community and into the future	District Technology Coordinator	Sept. 2009	Community partnerships	Greater community involvement in schools
Conduct evening classes and awareness sessions for parents and community members	District Technology Coordinator Principals Technology Coordinators		Funding for school staff to conduct classes	More substantial home-school connections Better parent / student commitment to

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	Technology Coaches Other district staff			technology integration
Seek sustainable partnerships with neighboring school districts	Superintendent District Technology Coordinator	Ongoing		Pooling of resources and expertise

Goal 2: Enhance and Transform Professional Growth to Foster Meaningful Technology Integration

Goal Statement

Lincoln County School District will implement a program of sustained, situated professional growth, and transform the delivery of these growth opportunities, to better enable educators to integrate 21st Century technologies into classroom activities.⁷

Rationale

Twenty-first Century students require 21st Century mentors, versed in the educational possibilities of technology and capable of implementing a new student-centered pedagogy.⁸ Yet traditional delivery methods for professional development do not meet the needs of educators who must respond to the ever-changing and evolving technological needs of student learners. A transformational model of situated professional development, whereby teachers have access to on-site, as-needed development, is required to meet the needs of 21st Century teachers.⁹

Benefits for Learning

- Traditionally, teachers present, and students learn, content. A model of professional growth for teachers is needed by which the role of passive student may be transformed into that of active learner. Students, rather than teachers, will be moved to the center of instruction. On-site, as-needed professional development for educators forms the basis of this model, and will be supported by more traditional forms of professional development.¹⁰
- Students will benefit from a considered, systemic program of professional growth for teachers fostering technology integration by experiencing the value of modern technologies in their appropriate contexts.¹¹
- As teachers learn to transform their pedagogy, viewing themselves not as transmitters of information but as facilitators of learning, students will benefit by becoming technology experts alongside their teachers.
- Teachers often fail to use technology in their classrooms because their limited experience with technology impedes positive perceptions of its usefulness.¹² Contingent on adequate access to technology, sustained professional development experiences will provide teachers with more meaningful experiences with technology.¹³

Reality in Lincoln County School District

- Professional growth opportunities for technology integration presently are limited to occasional, traditional, off-site conferences and *ad hoc* training by a network of tech-savvy volunteers.
- District funding does not presently allow for the necessary professional growth for educators, particularly with regard to technology instruction.
- A technology Professional Learning Community (PLC) recently was established to explore district technology education needs, but the group is hampered by a lack of physical and financial resources.
- Although small pockets of innovation exist, in which technology is meaningfully integrated into classroom activities, a lack of widely available professional growth opportunities for teachers presently limits the potential for systemic change.

Target 1

Integrate technology education into every classroom in the district through the establishment of a technology coach program in support of teachers.¹⁴

Action Step	Responsible	Onset	Resources Needed	Outcomes
Employ technology integration specialists (technology coaches), and expand the role of school technology coordinators to include school-level support for curricular technology integration at each school site	School Board Superintendent District Technology Coordinator	August 2009	Grant funding under EETT or other source to pay salaries, substitute expenses, and additional costs of the technology coach program	On-site, as-needed professional development and classroom assistance for teachers, support staff, and administrators seeking to integrate technology
Prepare school Technology Coordinators to support the technology coach program with appropriate technical support	District Technology Coordinator School Technology Coordinators	August 2009	Active network of Technology Coordinators Funding for School Technology Coordinators	On-site, as-needed technical support for teachers Allows technology coaches to focus on the coaching of teaching, not on technical issues
Provide supportive	Superintendent	Ongoing		Local

school-based leadership for district-wide technology integration	District Technology Coordinator Principals			administrative support for implementing a meaningful technology coach program
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Target 2

Enhance educators' professional growth as technology educators.

Action Step	Responsible	Onset	Resources Needed	Outcomes
Create system of regular within-district traditional professional development offerings for technology integration best practices	District Technology Coordinator School Technology Coordinators	August 2009	Remuneration for instructors	More tech-savvy teachers willing to integrate specific technologies in the classroom
Maximize opportunities for less technologically savvy teachers to attend classes and conferences likely to instill a desire to integrate technology	Teachers Principals School Technology Coordinators District Technology Coordinator	Ongoing	Funding Grant-seeking initiatives	Greater inspiration among teachers to innovate with technology in classrooms

Target 3

Enhance and maintain a formal network of dispersed technology support personnel.

Action Step	Responsible	Onset	Resources Needed	Outcomes
Formalize network of dispersed technology support personnel with responsibility to evaluate progress toward the goals of this plan	District Technology Coordinator School Technology Coordinators	August 2009	Remuneration for School Technology Coordinators Monthly meetings	Adequate dispersed technology support to enable teachers to focus on teaching
Create a statement of duties for technology coordinators	District Technology Coordinator Principals School Technology	August 2009	Network of technology coordinators	Standardization of technology support services across the district

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	Coordinators			
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Goal 3: Provide Sufficient Infrastructure and Connectivity

Goal Statement

Lincoln County School District will establish a sustainable technology infrastructure with sufficient connectivity capabilities to enable the realization of the goals set forth in this plan.

Rationale

Access to technology is an undeniable prerequisite for classroom technology integration, and for preparing students for a technology-rich world. Without a basic, robust infrastructure of networked computers and peripherals, along with reliable network and Internet connectivity, the remaining goals of this plan cannot conceivably be met.

Benefits for Learning

- Increased access to computer technologies has been shown to improve student achievement in reading, math, and other content areas.
- Students will benefit directly from enhanced infrastructure acquisition by being better connected to each other and to those outside the school environment. Many important educational opportunities exist today only through making connections outside the walls of the school.
- Enhancing district infrastructure will enable the deployment of research-based strategies for increasing student achievement, including various educational software and learning management systems.
- Parent involvement in schools—shown to improve student achievement—increases with better technology access.
- Students will have improved access to online content, including online classes, providing additional and alternative opportunities for meeting graduation requirements for at-risk students.
- Increased connectivity affords students opportunities to interact online with each other in safe, appropriate ways in an environment of learning.

Reality in Lincoln County School District

- Lack of sufficient technology access and connectivity are significant, expressed concerns of teachers in the district.
- Student achievement suffers due to lack of technology access in classrooms because teachers have fewer tools for reaching at-risk students and for providing alternate methods of instruction.

- Students have few opportunities to practice and demonstrate safe, responsible online behavior—a skill of increasing importance to students, educators, parents, and society as a whole.
- Students have limited access to online content due to the paucity of computers in schools.
- Opportunities for at-risk and other students to meet graduation requirements through online learning are limited by technology availability.

Target 1

Acquire hardware, software, and infrastructure sufficient to meet goals 2 and 3 of this technology plan.

Action Step	Responsible	Onset	Resources Needed	Outcomes
Establish a district-wide 1-to-1 computer program, beginning in middle schools then evolving to high schools and elementary schools	District technology Coordinator Superintendent Principals	Sept. 2009	Grant funding for laptops, infrastructure improvements, technical support, and administration	Integration of technology education across all content areas
Establish a sustainable district infrastructure budget	Governor Legislature Superintendent	Unknown	Sustainable state funding for educational technology	Sustainable, predictable access to appropriate, up-to-date technology for all students
Establish a feasible upgrade and replacement schedule for district hardware, software, and infrastructure	District Technology Coordinator Principals School Technology Coordinators	Unknown	Sustainable state funding for educational technology	Sustainable, predictable access to appropriate, up-to-date technology for all students

Budget

Item	Three-year Cost	Funding Source
Technology integration specialists	\$108,000	Grant
Floating pool of hardware, software, peripherals	\$100,000	Grant
Awareness sessions	\$15,000	Grant
Decentralize web filtering	\$15,000	Grant
MAP training	\$0	RPDP
Training in assessment of technology proficiency	\$0	District
County-wide technology committee	\$5,000	Grant
Community awareness sessions	\$5,000	Grant
School technology coordinators committee	\$54,000	Grant / RPDP
System of within-district technology PD	\$60,000	Grant / RPDP
Conference attendance for teachers	\$150,000	Grant / RPDP
District-wide (7-12) 1-to-1 program	\$600,000	Grant
District-wide (3-6) 1-to-1 program	\$400,000	Grant
Total	\$1,512,000	

Universal Service Program Checklist

Successful technology plans align the overall education or library service improvement objectives with the following five criteria. To qualify as an approved Technology Plan for Universal Service Program discount, the plan must meet these criteria. It is critical that technology planning not be viewed or treated as a separate exercise dealing primarily with hardware and telecommunications infrastructure. There must be connections between the proposed physical infrastructure of the information technology and the plan for professional development, curriculum reform, and library service improvements.

- Page 17 The plan establishes clear goals and a realistic strategy for using telecommunications and information technology to improve education or library services.

- Page 13 The plan has a professional development strategy to ensure that staff knows how to use the new technologies to improve education or library services.

- Page 17 The plan includes an assessment of the telecommunication services, hardware, software, and other services that will be needed to improve education or library services.

- Page 20 The plan provides for a sufficient budget to acquire and maintain the hardware, software, professional development, and other services that will be needed to implement the strategy for improved education or library services.

- Page 15 The plan includes an evaluation process that enables the school or library to monitor progress toward the specified goals and make mid-course corrections in response to new developments and opportunities as they arise.

Notes

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