

Educational Technology Plan for K-12 Public Schools in Washington State

Report to the Legislature



Randy I. Dorn
State Superintendent of
Public Instruction

December 2009

Educational Technology Plan for K-12 Public Schools in Washington State

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SUPERINTENDENT OF PUBLIC INSTRUCTION

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DATE: December, 2009

TO: Members of the Washington State Legislature

FROM: Randy I. Dorn, State Superintendent of Public Instruction

RE: Legislative Report: Educational Technology Plan for K-12 Public Schools in Washington State

This is a comprehensive report on the operating environment for technology integration across Washington's K-12 public schools. The content was produced by the staff of the Educational Technology Unit at the Office of Superintendent of Public Instruction (OSPI). Distribution of the plan to state and federal authorities maintains our compliance with current legislation.

The plan describes the challenges, opportunities and emerging issues that face educators as the pressure to deliver a 21st century education meets the tough realities of funding, economic disparity and heightened accountability requirements.

I want to express my strong support for the four strategies that form the core of this plan:

- Establish a sustainable funding system for technology integration across Washington State public schools.
- Develop instructional resources and assessments that help teachers to integrate the standards for educational technology into K-12 core subject areas as directed by 2SHB 1906.
- Develop and deliver professional development programs that promote technology integration as support for learner-centered instruction.
- Develop and deliver a leadership strategy for online education across Washington State that supports the provisions and deliverables of SB 5410.

I recognize that current economic conditions have tempered the funding of programs across state government. However, I urge the Legislature to review this report and assign its recommendations a high priority as funds become available. To hasten our collaborative progress toward that goal, I pledge my support and OSPI's cooperation as we work together to find the most efficient and cost-effective way forward.

I. Executive Summary

As a Washington State agency, Office of Superintendent of Public Instruction (OSPI) is directed by state law (RCW 28A.650.015) to develop and execute a strategic plan for educational technology to the extent funds allow. Updates must occur on a biennial basis. At its highest level, the plan must offer strategies that move the use of educational technology forward in public schools. Plan provisions must be consistent with the applicable provisions of RCW 43.105¹.

This report presents four strategies developed for the new agendas, state and federal, shaping K-12 education today.

- Establish a sustainable funding system for technology integration across Washington State public schools.
- Develop instructional resources and assessments that help teachers to integrate the standards for educational technology into K-12 core subject areas.
- Expand professional development programs that promote technology integration as support for learner-centered instruction.
- Develop and deliver a leadership strategy for online education across Washington State that supports the provisions and deliverables of SB 5410.

Each strategy relates to specific challenges in the operating environment of our K-12 system. Developed in consultation with the Educational Technology Advisory Committee, this suite of progressive action items set long-term objectives and follow with pragmatic, reality based tactics—ready to implement.

Each strategy is based on clear goals. Success will depend on our ability to adapt to a rapidly changing environment and on the strength of the partnerships to which we commit ourselves. As a whole, these four 21st century strategies will move the state of teaching and learning in Washington toward its greater goal—to achieve a 21st century learning environment for every student who enrolls in a K-12 public school.

¹ RCW 43.105.005. It is a purpose of this chapter to provide for coordinated planning and management of state information services. The legislature recognizes that information systems, telecommunications, equipment, software, and services must satisfy the needs of end users and that many appropriate and cost-effective alternatives exist for meeting these needs, such as shared mainframe computing, shared voice, data, and video telecommunications services, local area networks, departmental minicomputers, and microcomputers.
[1990 c 208 § 1; 1987 c 504 § 1.]

Regional & Programmatic Reports

Regional reports, Appendix IX, outline the exceptional support for technology integration hard at work today within Washington’s nine educational service districts. Every year, more than 5,200 educators turn to our Educational Technology Support Centers (ETSC) for professional development. Here, training programs customized at the regional level promote evidence-based, student-centered instructional practices supported by technology-rich learning activities.

A broad range of content in the appendices bring the reader up-to-date on the programs central to our mandate in the Educational Technology Unit at OSPI— development of standards for educational technology (Appendix X), planning for technology acquisition and integration (Appendix XI) and the success of our Enhanced Peer Coaching Program (Appendix XIII).

A companion Web site presents this report and divides the content into printable sections: <http://www.k12.wa.us/EdTech/StateTech/default.aspx>.

II. Background

Aware of the need for strategic planning for technology integration, Washington State lawmakers called for a multi-disciplinary advisory group to direct the development of goals and objectives for a state-level plan for educational technology. Their priorities were placed into statute as RCW 28A.650.015². Legislators were clear about the diversity and sophistication of the new Educational Technology Advisory Committee (ETAC) mandating that it must include, but not be limited to, people who represent these organizations and constituencies:

- Washington State Board of Education.
- Higher Education Coordinating Board.
- Work Force Training and Education Coordinating Board.
- Department of Information Services.
- Educational service districts.
- School directors, administrators, principals, teachers and classified staff.
- Faculty from higher education.
- Parents and students.
- Business and labor.
- Scientists and mathematicians.
- Washington State Library.

The *2009 Legislative Report: Educational Technology in Washington State's K-12 Public Schools* was developed in consultation with the members of the 2007-2008 Educational Technology Advisory Committee (see Appendix I).

A state plan for technology integration must comprise strategies that address these factors in the K-12 operating environment:

- Professional development programming that supports teachers as they integrate technology into curricula.
- Technical assistance to help schools and districts plan for and implement technologies and systems that improve operations.
- Development of the K-20 Education Network that connects K-12 schools, colleges and four-year universities to the Internet.
- Equity of access to digital technologies by students and school personnel statewide.
- Expand the interaction and use of digital technologies by students and school personnel.

² Washington State Legislature, RCW 28A.650.015: <http://apps.leg.wa.gov/RCW/default.aspx?cite=28A.650.015>

III. Current Environment

America has entered a time of reform and the modernization of K-12 education. Research, innovation and economic hardship have inspired a debate with the potential to transform teaching, learning and education management. The timing is superb. Fresh thinking and new leadership have arrived just as the perception of educational technology as necessary infrastructure in every classroom has surfaced as an area of common agreement. Not far behind is a growing awareness that effective technology integration depends on pre-service training and programs of professional development that help our teachers become powerful 21st century educators. As a greater community, we agree—there can be no replacement for great teaching.

New Agendas for Positive Change

Here in Washington, the Superintendent of Public Instruction, Randy Dorn, has organized his priorities around decisive action in these critical areas of public education: adequate, sustainable funding for K-12 schools, the launch of a 21st century assessment system, an end to the achievement gap, highly effective dropout prevention programs, greater academic achievement for all students, career and technical education and new programming for early learning.

At the federal level, Arne Duncan has taken up the critical position of Secretary of Education, arriving in Washington with an agenda for dramatic change across K-12 sector. He promotes strategies for educational reform:

- Adopt internationally benchmarked standards and assessments that better prepare students for college and a career.
- Build high-quality data systems that track a student's academic career, making it possible to tell which teachers, programs and schools are effective.
- Recruit more high-quality educators to underperforming schools as well as to subjects like math and science—difficult-to-fill positions across the K-12 sector.
- Support effective strategies to turn around underperforming schools.

Secretary Duncan and his team are setting direction as American educators prepare to program the \$100 billion allocated for the American Recovery and Reinvestment Act of 2009 (ARRA). In the midst of a historic economic downturn, ARRA funds promise to “save hundreds of thousands of jobs, support states and school districts, and advance reforms and improvements that will create long-

lasting results for our students and our nation including early learning, K-12 and post-secondary education”.

Secretary Duncan has positioned ARRA as one of the funding engines that will help to drive the nation's economic recovery. As the multiple distributions of ARRA make their way to program managers in every state school district, seven are advised to “spend funds quickly to save and create jobs”. And, states are urged to move rapidly, to develop comprehensive funding plans consistent with the law's reporting and accountability requirements, and begin spending stimulus funds as soon as possible.

At a moment when every school district across Washington is struggling with the need to cut all but the most essential services, the ARRA money will make a critical difference.

Money to Build Readiness for Technology Integration & Literacy

Educational technology, as a line item, receives significant federal support. Along with our regular Title II, Part D funds—\$3.52 million—Washington State received another \$8.69 million, with half of it earmarked as competitive dollars for professional development programming.

The money makes it possible to put an exciting new professional development (PD) program into place—Teaching & Learning in the 21st Century (TL21). TL21 complements two other grant programs: Enhanced Peer Coaching and Qwest Foundation Teachers & Technology both of which are better suited to teachers working at a tier 2 and 3 level as described by Washington State’s Tiers of Technology Integration,
<http://www.k12.wa.us/EdTech/TechLiteracy/TechIntTiers.aspx>.

Ideal candidates for these programs have reached at least a basic level of technology integration and are keen to learn powerful new instructional practices that shift classroom-based activities from teacher led to student centered.

Teaching & Learning in the 21st Century (TL21) is a two-year course of professional development designed for educators who want to learn the basics of technology integration. The program is structured with two strands: hands-on training that develops strong proficiencies with digital technologies, and the study and practice of instructional strategies that integrate technology into standards-based curricula.

Trainers will base the pedagogy component on specific instructional strategies identified in the book, *Classroom Instruction That Works*³; the foundation of TL21 curriculum derives from the project-based learning approach advocated by *Understanding by Design*⁴.

NCLB – From Theory to Practice

Successful technology integration is one part of a school ecosystem in which digital technologies are broad-based and used intensively by students and teachers within, and beyond, school hours. This theory moves noticeably into practice with direction setting at the federal level.

The No Child Left Behind Act addresses the need for technology integration with three ideas that guide state-level programming:

1. The act encourages “the effective integration of technology resources and systems” through teacher training.
2. The act promotes the development of curriculum that uses technology for teaching and learning.
3. The act calls on state and local educators to investigate and implement research-based instructional practices.

However, the U.S. Department of Education (ED) leaves it up to each state to define technology integration.

Rubrics Set the State Standard

District administrators must evaluate and report the technology integration skills of their teachers, the technological literacy of 8th grade students and starting in the 2009-10 school year, the technological proficiency of certified administrators, teachers and teacher-librarians. OSPI gathers these data through the annual technology survey and rolls them up into a report for the U.S. Department of Education.

³ Classroom Instruction that Works: Research-based Strategies for Increasing Student Achievement
By Robert J. Marzano, Debra Pickering, Jane E. Pollock, published by ASCD, 200, ISBN 0871205041, 9780871205049, 178 pages. Distills research from more than 100 studies of classroom management to present instructional strategies for student engagement and achievement and effective classroom management.

⁴ Understanding by Design by Grant P. Wiggins, Jay McTighe, published by ASCD, 2005, ISBN 1416600353, 9781416600350, 370 pages. Authors describe a multifaceted model of understanding, based on the idea that people can demonstrate understanding in a variety of ways.

The reporting, however, is not as easy as our operating principles would suggest because district administrators have autonomy when it comes to the assessment of integration, literacy and the proficiencies. In 2005, the need for a common reporting language drove the development of the *Tiers of Technology Integration* and *Tiers of Student Literacy*. The two rubrics were introduced as a component of the state's 2005 Educational Technology Plan. With standardized reporting parameters in place, OSPI began to encourage district administrators to use a consistent suite of assessment tools that align easily to the framework of both tiers. With the publication of this plan, OSPI is introducing a new rubric that sets three levels of technological proficiency for certified administrators, teachers and teacher-librarians—not at basic level, basic and proficient. (see Appendix VIII).

District-level tests, classroom-based assessments or observations, portfolios and self-assessment tools, such as the PILOT and PILOT Jr. surveys, are practical assessment options, and OSPI worked with the ETSC Program to extend PILOT to measure the technology proficiencies identified in the new rubric. However, the decision is made at the district level.

Multiple assessment options make it difficult to compare districts. However, look at the data as a statewide aggregate, then chart it from the 2005-06 baseline, and a continuing path of improvement emerges—with two results. Clearly the technology literacy of Washington State students is on the rise but the data evidences only modest growth in the ability of our teachers to integrate technology.

Technology Integration

In Washington, educators have identified eight benchmarks that, taken as a whole, describe a school environment that supports the instructional practice and learning dynamics conducive to technology integration. The phrase "use technology" represents a continuum of ever-increasing skills that makes the appropriate cognitive demand as defined in Bloom's taxonomy⁵:

- Educators use technology to create rich environments where student work shows evidence of conceptual understanding beyond recall.
- Educators use technology to encourage students to engage in activities that develop understanding and create personal meaning through reflection.
- Educators use technology to provide opportunities for students to apply knowledge in real-world contexts.
- Educators and students incorporate suitable technology to engage in active participation, exploration and research.
- Educators use technology to provide diverse and culturally relevant experiences to help students develop an understanding of our world.
- Educators use technology to enhance and differentiate instruction in order to present students with a challenging curriculum designed to help each individual student develop a depth of understanding and critical thinking skills.
- Educators use technology for meaningful assessment data that informs their practice and allows students to exhibit higher order thinking and to demonstrate knowledge.
- Educators use, and encourage students to use, technology to communicate, collaborate, and create communities with educators, parents, students, and additional stakeholders.

Technology Literacy of 8th-Grade Students

Similarly, the DOE relegates the definition of technology literacy, in the 8th-grade, to each state. In Washington, educators define technological literacy as a skill set that empowers students to use technology to deepen the learning experience.

⁵ A categorization of intellectual behavior in learning developed by Benjamin Bloom and published in 1956. Bloom's taxonomy described three overlapping domains: the cognitive, psychomotor, and affective.

Technology literacy is the ability to use technology responsibly, creatively and effectively to:

- Communicate.
- Access, collect, manage, integrate and evaluate information.
- Solve problems and create solutions.
- Build and share knowledge.
- Improve and enhance learning in all subject areas and experiences.

The ultimate goal—technology fluency—builds upon technology literacy. Students demonstrate fluency when they can apply technology to real-world experiences, adapt to changing technologies, and personalize technology to meet individual needs, interests and learning styles.

Technology Proficiency of Certified Administrators, Teachers & Teacher-Librarians

Beginning January 2010, states must report data to the U.S. Department of Education related to the technological proficiencies of certified administrators, teachers and teacher-librarians. The key assumption is simple: those who lead our classrooms must be proficient users of digital technologies, as well as highly capable technology integrators whose instructional practice is compatible with a student-centered, project-oriented learning environment.

State educators have developed a framework that benchmarks skills and expectations at the basic and proficient levels for certified administrators, teachers and teacher-librarians. Each matrix addresses one of six important skill sets within the context of teaching and learning:

- Operation.
- Troubleshooting.
- Classroom Management and District Policy.
- Common Applications.
- Instructional Tools.
- Professional Development.

On the annual technology survey, districts must report the number of administrators, teachers and teacher-librarians who:

- Have not reached a basic level of technology proficiency.
- Have reached the basic level of technology proficiency.
- Use technology at the proficient level.

Annual Technology Survey Data 2005– 2009

Technology Literacy of 8th Grade Students					Technology Integration by Teachers (All Grades)			
	2005-06*	2006-07	2007-08	2008-09	2005-06*	2006-07	2007-08	2008-09
Tier 1	56%	34%	34%	33.5%	61%	62%	63%	59%
Tier 2	33%	39%	38%	38.5%	28%	26%	25%	29%
Tier 3	11%	27%	28%	28%	11%	12%	12%	12%

*Optional in the 2005-06 school year. 25 percent of Washington State school districts reported data.

High Value Partners Extend Our Reach

Partnerships strengthen and enrich program activities. As educators across the state grapple with the need to develop 21st century learning environments, these partnerships help to position staff in the Educational Technology department at OSPI as a source of best practice, leading-edge ideas, and smart strategies and resources for 21st century teaching and learning.

Northwest Council for Computer Education (NCCE). NCCE is a highly effective professional organization that supports technology integration in K-12 schools across the Pacific Northwest. NCCE provides its members with premium resources and opportunities for professional development. OSPI staff has worked closely with colleagues at NCCE for many years. The organization’s executive director, Heidi Rogers, is an active member of our advisory committee and contributed to the development of this plan.

Staff members in the Educational Technology department are regular participants in NCCE activities and events, outlined in the list below:

- Work on nominating committees to recognize outstanding exemplars of K-12 leadership at the administrator and technology director levels.
- Co-sponsor, plan and participate in the annual IT Administrators’ Summit.
- Fund the registration and travel expenses for teachers to attend the yearly NCCE conference through the Enhanced Peer Coaching Grant Program.
- Work on the planning committee and participate in the NCCE-supported Constructivist Consortium and Teaching and Learning Forum events.
- Rolled out the Washington State Standards for Educational Technology at the 2009 NCCE conference in Portland.
- Announced the first round of the Qwest Foundation Teachers & Technology grant awards at the 2008 NCCE conference in Seattle.

Qwest Foundation. OSPI continues to work closely with the Qwest Foundation on a competitive grant program, Teachers & Technology. As partners, Educational Technology Unit and Qwest Foundation staff hold a common belief that digital technologies are essential tools for teaching and learning and that skilled technology integration will enrich the learning environment. Appendix XII provides a full description and program report of the Qwest Foundation Teachers & Technology Grant Program.

Educational Technology Support Centers. At the regional level, OSPI partner with the ESD-based ETSCs (Educational Technology Support Centers) to provide leadership for technology integration and research-based professional development. Appendix IX provides a full description of the ETSC program including regional snapshots.

Computers 4 Kids Program. Since 1999, OSPI has partnered with the departments of Corrections, Information Services and General Administration to distribute surplus computers to school districts across Washington. In 2008, more than 200 schools across 89 districts received 8,332 computers. These numbers bring the program total to 47,000+ computers delivered and designated for instructional use.

The feedback on this durable and straightforward program is always positive and points consistently to the gap that divides affluent districts from those who need extra help and resources. Here are sample communications from administrators whose schools received computers during 2008.

From a network administrator in the Mt. Baker school district,

We have not had hardware replacement money for five years and the C4Kids program is the only way we have been able to keep computers in our labs and on our desk tops.

From a high school principal in the Chewelah school district,

We want you to know that we would not be able to purchase this number of computers, and without this program our students would not have access to the ratio we currently enjoy. We hope you can continue to support the "Computers for [4] Kids" program for many years to come.

K-20 Education Network

In the 14 years since the first state technology plan was published, the state has witnessed an incredible growth in online access across Washington State. In 1994, only four percent of K-12 classrooms were able to connect to the Internet via the K-20 network. In 2008, that figure topped 99.6 percent. Not surprisingly, the growth in Internet use has followed connection and access expanding at the rate of 30 to 40 percent each year.

The K-20 network connects school districts, educational service districts, community colleges, the four-year colleges and universities, the state schools for deaf and blind students and OSPI. Educators at all levels and across all regions depend on this high-speed, reliable and cost-efficient communication and data transport channel.

An article on the K-20 network Web site about the popular *Where In Washington?* Program, (http://www.wa-k20.net/printable_story.php?page=2a1g&photo=images/photo2a1g.jpg) makes an important point about technology integration and the importance of the network to teaching and learning. "One of the great strengths of the K-20 network is its ability to place each learner at the center of an accessible, connected learning experience. While, behind the scenes, the best, most forward-looking, and reliable network instrument stands ready to promote new and innovative educational programs. The only limit is human imagination."

IV. Current Funding—Federal, State & Local

Local, state and federal sources fund educational technology at the district level. Although a great deal of discussion, planning and activity surrounds the subject of technology in K-12 schools, comprehensive data on the financial side of the issue are not available, or at least remain outside what districts must report to state and federal agencies. One major reason—Washington is a local control state; district management exercises great autonomy as it generates and allocates funds.

There are four main ways districts find money for technology: special property tax levies, capital bonds and levies, the reallocation of money from the state's general fund and through federal funding programs.

Local Funding

Special property tax levies. Many districts appeal to voters with special levies that target specific projects, often based on building needs: maintenance and operations, capital projects, or to shore up technology infrastructure. In recent years, a number of districts have equipped teachers and students with technology funded by special levy.

Voter dependent, these levies are a boon for the districts that can pass a technology initiative. However, from the state's perspective, these levies contribute to a growing economic disparity among regions: districts that can reallocate general fund dollars and make the case for a tax levy are more likely to be located in affluent areas. Many districts, representing thousands of students, are unable to offer access to a functional level of up-to-date hardware and software; their voter base lands too high on the poverty index. And, many of these districts are situated in rural areas.

Capital bonds and levies. Dependent on a voting public that can afford an additional tax burden, capital bonds and levies have proved to be a significant, albeit inflexible, source of funding for educational technology. And again, the natural disproportion among regional tax bases promotes an inequity resonant with the disparity that plays out when property tax levies appear on the ballot; affluence becomes the arbiter of access to classroom technology and quality of technology-enriched programming.

District leadership faces a major limitation as it moves to leverage capital funds for technology. Historically, legal opinion related to bond and levy language, as

well as district-level interpretation of state law, has confined expenditures to the initial hardware purchases or to hardware bundled with pre-installed software. If staff development, maintenance and technical support remain unfunded, teachers often struggle with the integration of new technology into teaching and learning activities. In some cases, the equipment sits unused in the classroom.

State Funding

The Legislature has not dedicated an ongoing funding source for educational technology, such as a revolving fund or formula-driven apportionment program. However, there is great interest in reformulating the funding for basic education, and within this framework for debate and legislation, the 2008 Basic Education Funding Task Force has moved technology integration into the spotlight. In its latest report, the task force recommends that lawmakers update the definition of basic education to include access to educational technology. The report calls for a minimum funding level of \$200 per student per year.

Absent a dedicated funding stream for classroom-based technologies, there are two important elements of the educational technology infrastructure in Washington State that create the fundamentals for 21st century teaching and learning. Together, these building blocks stage a future in which technology integration is the rule and not the exception: state funding for the K-20 Education Network and the programmatic work of the regional ETSCs.

K-20 Education Network. The sophisticated infrastructure and technical support capacity of the K-20 network connects school districts, educational service districts, community colleges, the four-year colleges and universities, the state schools for deaf and blind students and OSPI. Educators at all levels and across all regions depend on this high-speed, reliable and cost-efficient communication and data transport channel.

Districts pay a nominal cost to take advantage of the K-20 network as their Internet service provider. State funding—\$3.9 million biennially—supports the network through Regional Institutional Technical Units (RITU) based in each ESD. The RITUs deliver direct technical support for the network in the K-12 sector. State funds also subsidize the transport (data transmission) and maintenance costs not covered by district co-pays, and pay for the K-20 Operations Cooperative (KOCO). KOCO was launched to oversee the day-to-day operations of the network with its launch in 1997. The staff who work with KOCO are responsible for the operation of the network across all the education sectors.

Educational Technology Support Centers. The Legislature allocates \$3.9 million each biennium to fund the necessary leadership and program development through the ETSC and OSPI.

Programmatically, this funding translates into a frontline of leadership, professional development, communication, support and hands-on training:

- Innovative solutions at the district and regional level that leverage technology for teaching, learning and administration.
- Research-based professional development designed to guide teachers as they try out new instructional practices and learn how to enrich learning with activities that integrate real world technologies.

Appendix IX provides a full description of the ETSC program including regional snapshots.

Federal Funding

Title II, Part D. The primary revenue stream for educational technology is defined by the Title II, Part D, Enhancing Education Through Technology (EETT) program. In fiscal year 2009-10, Washington State will receive \$3.52 million in regular Title IID funds and an additional \$8.69 million in one-time ARRA Title IID funds.

This table details the financial breakdown and conditions that govern how OSPI distributes Title IID funding.

Formula funds	\$5,805,549	<p>Based on the Title I allocation for each district. Money distributes via iGrants.</p> <p>Requirements:</p> <ul style="list-style-type: none"> ▪ Improve student achievement through the use of technology. ▪ Spend at least 25 percent training teachers to integrate technology into curricula. ▪ Spend remaining funds to improve technological literacy among students, integrate technology into curricula or improve student achievement. ▪ Allowable expenses might include, but are not limited to: <ul style="list-style-type: none"> ○ Professional development. ○ Instructional computers or other hardware. ○ Instructional software. ○ Online courses or resources.
Competitive grants	\$2,875,500	<p>Awarded to participants in the Enhanced Peer Coaching Program</p> <ul style="list-style-type: none"> ▪ Cadre 2, 97 coaches. ▪ Cadre 3, 263 coaches. <p>Comprehensive evaluation led by the Puget Sound Center for Teaching, Learning & Technology.</p>
	\$1,620,000	<p>Awarded to participants in the TL21</p> <ul style="list-style-type: none"> ▪ Cohort 1, 200 educators. <p>Comprehensive evaluation will be led by the Puget Sound Center for Teaching, Learning & Technology.</p>

E-rate Discounts to Lower Telecom & Network Costs. The Federal Communications Commission oversees a unique federal agency, the Universal Service Administrative Company (USAC), the purpose of which is to administrate the Universal Service Fund. Autonomous and not-for-profit, USAC partners with companies to deliver affordable telecommunication and data services to low-income consumers, health care providers, schools and libraries in rural areas. The schools and libraries program makes the E-rate discount possible, which lowers the cost of Internet access, and telecom and network data services.

E-rate Discount Dollars Available to K-12 Schools & Libraries in Washington State

	2005	2006	2007	2008
Discount Total	\$14,684,197.98	\$18,090,492.74	\$24,993,238.75	\$28,561,715.38

V. Strategies for 21st Century Teaching & Learning

Guiding Principles Based On 21st Century Realities

The members of the Educational Technology Advisory Committee envision a comprehensive statewide program for the integration of technology into K-12 public education. This progressive and far-reaching vision is based on the realities of teaching and learning in the 21st century.

Washington students will encounter **workplaces and institutions of higher education that integrate technology** into every aspect of their operations.

Digital technologies frame the **infrastructure of 21st century life** and so, are critical to 21st century education.

Digital technologies support **skill sets and competencies that have direct application** to the world students will encounter at graduation.

Digital technologies have great potential to **support powerful teaching and student-centered learning** environments.

Digital technologies must be **broad-based across Washington's K-12 schools and used intensively** by students within, and beyond, school hours.

Leading edge enterprise systems must be broad-based across Washington's K-12 schools and used intensively by educators and administrators to make **data-driven decisions and streamline operations**.

Digital technologies produce the greatest gains in student achievement when they are an **integral element of powerful teaching** and classroom activities that support self-directed learning.

Technology is critical if teachers and students are to **communicate, collaborate, share new knowledge** and extend teaching and learning beyond school walls and classroom hours.

Students must become **technologically fluent**, able to create high-quality knowledge products that demonstrate what they know and can do.

All students, regardless of socio-economic or cultural background, must be able to **access technology at school**. Technological fluency is the basic skill that enables participation in a global economy.

The four strategies, objectives and tactical recommendations that follow are based on these guiding principles.

Strategy One

Establish a sustainable funding system for technology integration across Washington State public schools.

Objectives

- All students, regardless of socio-economic factors or physical limitations are able to access school-based technology within, and beyond, school hours.
- All teachers and students are able to access high-quality, research-based teaching, learning and assessment resources.
- Digital technologies are broad-based across Washington's K-12 schools and used intensively by educators, administrators and policy makers.

Tactics

Partner. As directed by ESHB 2261⁶, work with the Quality Education Council to develop strategic recommendations and successive updates at four-year intervals:

- Define a new program of basic education financing. Mandate that any new legislative requirement must have related funding.
- Identify measurable goals and priorities for a 10-year period. Include ongoing strategies to eliminate the achievement gap and reduce dropout rates.
- Take the OSPI system capacity report into consideration.
- Adopt the prototype schools funding model⁷ that includes educational technology.
- Set a deadline—the 2018-19 school year—as the point at which the new program of education will be funded.
- Create a roadmap for work groups created by ESHB 2261 to develop the details of new funding formulas.

⁶ 2009 Legislative session law, <http://apps.leg.wa.gov/documents/billdocs/2009-10/Pdf/Bills/Session%20Law%202009/2261-S.SL.pdf>.

⁷ Based on staff and non-staff costs to support instruction and operations in prototypical schools, including enhancements for highly capable, CTE, AP & IB, LAP, bilingual, and special education. The model enables an allocation mechanism and creates a funding work group to recommend details of formula.

Equip Every Classroom with Technology. Here is a possible and realistic scenario that outlines how the state might equip every classroom with educational technology:

- Equip all K-12 classrooms with a basic presentation station—a standards-based computer⁸, projector, document camera and interactive whiteboard or similar device.
- Equip all students in grades 9-12 with a personal laptop to use throughout high school.
- Equip all students in grades 7-8 with a laptop device for in-school use.
- Equip all students in grades 4-6 with computers-on-wheels (portable computer lab) for 1:1 access, as needed.
- Support computer-based instructional access for all students in grades K-3. The desirable ratio of computers to students is 3:1.

Background. *The 2009 basic education funding legislation calls for a redefinition of central elements of the state’s program of basic education—infrastructure and education delivery—and the finance mechanisms necessary to support it. Newly created with this statute is the Quality Education Council. The 13-member council represents state leadership in K-12 education: legislators, state schools superintendent, a school administrator, the director of the Department of Early Learning, and the chairs of the State Board of Education and the Professional Educator Standards Board.*

⁸ Standards-based means a computer that is four years old or newer, able to support multimedia and modern applications.

Strategy Two

Develop instructional resources and assessments that help teachers to integrate the standards for educational technology into K-12 core subject areas, as directed by RCW 28A.655.075

Objectives

- Identify an assessment framework that helps teachers evaluate the learning goals established in the Washington State Standards for Educational Technology. Integrate student-centered instructional resources and effective grade-level assessments into the framework.
- Develop the assessments as classroom or project-based so that teachers can embed these tools into classroom instruction.

Tactics

Partner. Recruit a group of experienced Washington State educators to participate in the development of assessments for the Educational Technology Standards.

- Consider candidates that come from school districts, educational service districts (ESDs), colleges and universities, businesses and the community.
- Because the standards represent learning expectations—embedded into all content areas and grade levels—educators with expertise in math, science, literacy, social studies and other curriculum areas, as well as library/media specialists, are likely candidates for the Educational Technology Assessment Group.

Teach, Learn, Evaluate Understanding. Establish a process that enables teachers to administer and score the assessments throughout the regular school year using consistent scoring criteria and procedures.

Background. *RCW 28A.655.075, adopted in 2007, directed OSPI to sequence the development of standards for educational technology, related instructional resources and a corresponding assessment system. The new standards were adopted December 1, 2008 and with their publication, OSPI has begun to identify instructional resources and assessments that teachers can administer at the classroom level or by learning project.*

- *Educational Technology Standards, <http://www.k12.wa.us/EdTech/StandardsAlignments/TechStandards.aspx>.*
- *RCW 28A.655.075, <http://apps.leg.wa.gov/rcw/default.aspx?cite=28A.655.075>.*

Strategy Three

Leverage federal funding to develop and sustain programs of professional development (PD) that train educators to adopt highly effective instructional practices and create equitable, technology-rich learning environments.

Objective

- Continue to improve the quality and regional delivery of the state's federally funded PD programming—Teaching & Learning in the 21st Century and Enhanced Peer Coaching.

Tactics

Partner. Put strategic partnerships into action with institutions of higher education, and educational and community-based organizations to identify the most effective way to integrate technology into teacher education. Focus on the teaching methods, classroom management strategies and content area practice mandatory for certification as a K-12 teacher.

Work with the Professional Educators Standards Board (PESB) to promote pre-service training that supports the development of key technological proficiencies and instructional practices that integrate digital technologies.

Develop & Expand Programming for Professional Development. Expand the reach and influence of the federally funded Enhanced Peer Coaching Program (EPC):

- Use peer coach training as the method to introduce new learning about pedagogy and promote instructional practices that integrate technology.
- Encourage the growth of professional learning communities among peer coaches.
- Recognize teacher-leaders who are outstanding technology integrators.
- Continue the in-depth evaluation of EPC results.

Launch the Teaching and Learning in the 21st Century (TL21) Grant Program:

- Monitor the activities and feedback of Cadre 1 participants.
- Capture best practices to improve the syllabus and experience of TL21 trainers and trainees.
- Conduct an in-depth evaluation of TL21 results when the first cadre has completed the course.
- Continue to develop the partnership between OSPI and the Qwest Education Foundation as a way to expand and promote the Teachers & Technology Grant Program.

Background. Title II, Part D, the Enhancing Education Through Technology (EETT) Program funds district-level programming that supports technology integration:

- 50 percent allocates as formula grants that must target school improvement activities and could include technology acquisition. The amount of money OSPI distributes is based on the district's share of Title 1, Part A funding, which in turn, depends on the number of children whose families are classified as low-income. High-poverty schools, where 40 percent + of the students are growing up in low-income households are encouraged to adopt programs that target low-achieving students by raising the quality of instruction throughout the school. In this way, Title I helps all students and dovetails with EETT because 25 percent of this money must be used for professional development that promotes technology integration.
- 50 percent allocates as funding for state-led competitive grant programs. In Washington, OSPI directs these funds to research-based professional development programs—Teaching & Learning for the 21st Century (TL21) and Enhanced Peer Coaching (EPC). To date, 463 teachers have completed the EPC and TL21 training programs, both of which support the integration of technology into teaching and learning.

Strategy Four

Develop and deliver a leadership strategy for online education across Washington State that supports the provisions and deliverables of RCW 28A.250.

Objective

Fulfill the directives detailed in RCW 28A.250 to create an educational environment in which online learning is accessible to all K-12 students in Washington State, regardless of location.

- Online education adopts industry standards for effective policy, teacher certification, and course design and delivery.
- Online education adapts easily to a changing operating environment.
- State leadership puts progressive, new policies into place without delay.
- State leadership fine-tunes strategic direction proactively as data and research reveal new intelligence and industry knowledge related to web-based teaching and learning.

Tactics

Partner. Establish a collaborative working relationship with the Online Learning Advisory Committee:

- The committee's mission is to provide advice to the DLD regarding online course approval criteria, web-based information, model school district policy and agreements, and related issues.

Activities & Initiatives. Develop results-oriented activities and initiatives that support high quality online education:

- Create open, dependable access to online curricula aligned with state academic standards and integrated into Washington's assessment system.
- Provide objective, evaluative and comparative web-based information to students, parents and educators related to online learning:
 - Program and course content, how to register for programs and courses, teacher qualifications, student-to-teacher ratios, prior course completion rates.
- Develop a process that makes it possible to identify high-quality online learning courses.
- Establish an approval process for multidistrict online providers that comprises professional accreditation by a recognized state, regional or national accrediting organization(s).

- Develop and distribute a comprehensive survey of online learning in Washington State.
- Implement policy that addresses the operative and oversight functions of online education.
- Identify high quality professional development opportunities and best practices for online educators.

New Policy & Practice. Support the legislatively directed mission and activities of the Digital Learning Department as policy and procedures are drafted, vetted, distributed and implemented:

- Develop a state-level requirement that district school boards develop policies and procedures to govern student access to online learning.
- Develop model agreements with approved multidistrict online providers. Standardize contract terms and provisions.
- Develop model policies and procedures for online education at the district level.

Background. *Strategy Four aligns its goal, objectives and tactics with the direction set in RCW 28A.250, <http://apps.leg.wa.gov/RCW/default.aspx?cite=28A.250.005> and supports the findings that structure its mandates: online learning provides tremendous opportunities for students; the Legislature supports and encourages online learning opportunities. However, there is also a need to assure quality in online learning, both for the programs and the administration of those programs; and the Legislature is the steward of public funds that support students enrolled in online learning and must ensure an appropriate accountability system.*

VI. Summary

The four strategies presented in this report are based on clear goals and the direction of the Washington State Legislature. Success will depend on the ability to adapt to a rapidly changing environment and on the strength of partnerships to which OSPI and its collaborators commit their time and effort. As a whole, these four strategies will move the state of teaching and learning in Washington toward its greater goal—the realization of a 21st century learning environment for every student who enrolls in a Washington State K-12 public school.

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