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CHARTING A NEW COURSE: THE CONTEXT FOR PLANNING

Learning in the 21st Century presents both unparalleled opportunities and extraordinary challenges, many of which are the direct result of the Digital-Age technology that has become so pervasive in our world.

The purpose of the 2002-2007 Illinois State Technology Plan is to set a course for the convergence of technology literacy, higher-order thinking, 21st century skills, and the Illinois Learning Standards. Without this new context of 21st century learning, Illinois students will not be fully prepared to live, learn, and work in a digital age.

THE INFLUENCE OF TECHNOLOGY

Technology influences learning in three significant ways. It is a driver of change in society (and therefore in schools); it is a bridge to academic excellence; and it is a platform for informed decision-making and accountability.

1. A Driver for Change: Technology Literacy and 21st Century Skills
   Technology has catapulted the U.S. into a knowledge-based, global society whose driving force is intellectual capital. Experts agree that success in this society requires significantly different skills than in the past and that we must focus our schools on a new definition of what it means to be “educated” in a digital age. What students learn, as well as how they learn it and how often they must refresh these skill sets must be significantly changed, along with the learning environments and learning organizations that will support this new paradigm.

2. A Bridge to High Academic Achievement
   Technology serves as a bridge to more engaged, relevant, meaningful, and personalized learning – all of which lead to higher academic achievement. Research shows that when technology is used appropriately, children learn more (as measured by conventional tests) and are aided in the development of the skills and attitudes necessary for success in the 21st century.

3. A Platform for Informed Decision-Making and Accountability
   Technology provides a platform for more informed decision-making using timely, meaningful data to shape learning opportunities. This translates into more personalized learning based on continuous feedback available to students, teachers, and parents.

The mission of policymakers and educators alike, therefore, must be to define technology literacy and 21st century skills, understanding how the digital literacies can breathe new life and real-world relevancy into traditional academic content. The research is clear: These skills do increase academic excellence – but only within learning organizations that have embedded them in meaningful, rigorous, academic content. Policymakers and educators must recognize the need for multiple assessments to measure these skills within the context of the Illinois Learning Standards, evaluating their application to today’s technological, global society. The economic viability of students, Illinois, and the nation is at stake.

The 1995 STATE PLAN FOR INFORMATION TECHNOLOGY IN K-12 EDUCATION

The 1995 State Plan for Information Technology in K-12 Education provided an exceptional platform for systematically introducing technology into Illinois schools and using it to improve the education of Illinois students. Thanks to the hard work of thousands of educators and citizens throughout the State, Illinois has made remarkable progress in a very short period.
As a result of the 1995 State Plan, the Illinois State Board of Education (ISBE) has created a policy and planning infrastructure that includes technology standards for students and educators, systematic planning at the local level, two state funding streams, and a statewide backbone for connectivity. Regional technology centers provide leadership and support for local school districts, and ISBE provides a wide variety of resources for educators, parents, and citizens.

The impact on Illinois schools has been significant. In November 2002, Illinois was ranked first in the nation in the category of education by the Center for Digital Government and the Progress & Freedom Foundation for the second year in a row. All local districts and a majority of school buildings are now connected to the Internet, and the State’s ratio of students to computers is better than the national average. Most teachers have received some technology training, and the use of technology to support engaged learning in the classroom is increasing throughout the State. It is now possible for many Illinois students to access almost any library in the world, to take virtual field trips to museums and cultural institutions, to work with adults on real-world problems such as stream monitoring, and to take coursework that expands their learning options well beyond the traditional curriculum in their local school districts.

THE NEXT PHASE

These accomplishments set the stage for the next phase of technology growth and development in Illinois P-16 education. The plan for that phase has been shaped by four key factors:

- the unfinished agenda from the 1995 State Plan;
- the new federal requirements for technology;
- the Illinois vision for education in the 21st century; and
- a set of principles for policy and practice in the future.

The Unfinished Agenda

Despite the progress made during the past several years (see Table 1), many goals of the 1995 State Plan have not yet been fully realized. Among the most prominent are the following:

- assuring that all students, including those in high-poverty schools, have equitable access to technology that meets their learning needs;
- assuring that teachers and other educators have the knowledge and skills to use technology effectively in teaching and learning;
- transforming the learning process by using technology to engage students in problem solving and higher-order thinking;
- developing student technology literacy within the academic context; and
- assuring accountability for the use of technology.

Federal Requirements

The No Child Left Behind Act of 2001 (NCLB) calls for the enhancement of education through technology and the closing of the digital divide, in part through the effective integration of technology resources and systems with teacher training and curriculum development.

Illinois submitted a consolidated application to the federal government on June 12, 2002 for federal funds for NCLB. The application included a plan for the $25 million available to Illinois for technology funds. As part of the implementation of that approved plan, Illinois released a request-for-proposals to solicit applications from eligible school districts for both the formula funds and the competitive funds. The Illinois State Board
anticipates awarding these funds to schools in late fall of 2002 and annually thereafter through the 2006-2007 school year, contingent upon continued federal funding. Eligible districts and partnerships will be encouraged to submit multi-year applications.

Illinois also adopted as its technology literacy standards those delineated by the International Society for Technology in Education (ISTE) in the National Technology Education Standards (Appendix 1). At its May 2002 State Board meeting, the Board “…endorsed the use of these standards for K-12 students…” These standards reflect the Six Essential Learnings for technology adopted by ISBE in 1995 (Appendix 2). ISBE will take actions to assure that Illinois educators, students and parents are aware of these standards and are addressing them in their educational planning and accountability.

State Vision for Education

The State Board of Education has developed a vision for Illinois education which states that Illinois public schools will enable all students to succeed in post-secondary education and career opportunities, to be effective life-long learners, and to participate actively in our democracy.

This vision for Illinois education calls for all students to be prepared to succeed in an increasingly complex, information-rich society. It calls for all students to have the higher-order knowledge and skills that will allow them to function effectively in an ever-changing environment and in a variety of roles. It calls for schools in which there is no achievement gap between groups of students, and for schools in which there are equal opportunities to meet the learning goals.

Current and emerging technologies provide unique opportunities to help achieve this vision. These technologies make it possible for Illinois students to have equal, high-quality learning opportunities regardless of where they live. Technologies make learning possible at any time and any place; support the development of advanced knowledge and skills and the ability to apply them to complex circumstances; and allow personalization of learning that can assist each student in meeting his or her individual goals and potential.

Principles for Policy and Practice

Based on the statewide planning process during 2000-2001, as well as the status report and analysis provided to the Illinois State Board of Education in December 2001, the following principles were developed to guide policy and practice in the years ahead:

• build on past successes and reflect a renewed commitment to the effective use of technology for all students;
• require aggressive, continuous, and creative attention to issues associated with the digital divide;
• ground the technology investments in research and emerging best practices;
• give more systemic and systematic attention to building and maintaining educator capacity to effectively use technology;
• support transformation of the instructional process;
• commit to assuring the existence and quality of e-learning opportunities for all Illinois students; and
• emphasize accountability and actions that will ensure the quality of all aspects of technology in P-16 education.

organizations required to reach those goals and builds upon strategies that will increase the capacity of Illinois communities to ensure that all students will thrive in the Digital Age.
### Progress of Technology Implementation in P-16 Education

#### Table 1: Illinois Progress to Date

<table>
<thead>
<tr>
<th>Strategic Actions</th>
<th>Progress To Date</th>
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<tbody>
<tr>
<td>Leadership and support at the state and regional levels</td>
<td>The Governor and his staff advocated specific technology goals and programs; the Illinois General Assembly provided state funding for technology line items; the State Board of Education gave continued priority to leadership for technology; and the Regional Offices of Education served as links and leaders between local districts.</td>
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<tr>
<td>A framework of vision and policies</td>
<td>A common vision and clearly stated policies served as a framework to guide decision-making and actions throughout the five-year period.</td>
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<tr>
<td>Establishment of Learning Technology Centers</td>
<td>These Centers were strategically located throughout the state and assigned to provide support for local districts. Specific responsibilities included professional development for teachers and administrators, long-range technology planning, network design consultation, support for Internet and distance learning, and the provision of access to information opportunities. Staff members in these Centers provided advocacy and expertise for appropriate use of technology in education.</td>
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<tr>
<td>Development of a statewide technology backbone to connect school districts to the Internet</td>
<td>Initial development of a technology backbone for Illinois public schools was accomplished by the State Board of Education through its Linc-On project. In 1999, Governor Ryan signed legislation creating the Illinois Century Network (ICN), which basically adopted LincOn and provided all elementary, secondary and higher education institutions (as well as libraries and museums) with affordable, reliable, high-speed connectivity. The ICN is governed by a multi-agency board and administered through the Illinois Board of Higher Education (<a href="http://www.wcc.cc.il.us">http://www.wcc.cc.il.us</a>).</td>
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<tr>
<td>Integration of technology knowledge and skills into the Illinois Learning Standards and the applications of learning</td>
<td>This action emphasized the importance of technology knowledge and skills and their relevance to all of the fundamental learning areas. A description of the “Six Essential Learnings in a Technological Society” (Appendix 1) provided additional guidance about what students need to know and be able to do.</td>
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<tr>
<td>Inclusion of technology knowledge and skills in the new standards for Illinois teacher certification</td>
<td>New teacher certification standards adopted by the State Board included general technology standards for all teachers, as well as more specific standards related to the use of technology in each of the academic content areas.</td>
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<tr>
<td>Requirement of a local technology plan as a condition for state funding; promotion of an inclusive, community-based planning model</td>
<td>School districts were required to develop a 3-5 year plan for local technology adoption, using the “Blueprint for Community-Based Planning.” This requirement resulted in engagement and commitment by local citizens, many of whom had not been previously involved in this type of activity. All local plans were reviewed by a group of peers and Learning Technology Center personnel before they were funded by the State Board of Education.</td>
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<tr>
<td>Strategic Actions</td>
<td>Progress To Date</td>
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<tr>
<td>Appropriation of state funds for technology; allocation to meet strategic goals</td>
<td>Illinois created two funding sources for technology: the “Technology for Success” line, which supports grants to local districts and state-level initiatives; and the “Revolving Loan Program,” which allows districts to borrow state money to purchase technology. Consistent with the funding principles established in the 1995 State Plan, grants to districts required local commitments and gave priority to high-poverty districts.</td>
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<tr>
<td>Aggressive and successful pursuit of e-Rate and other federal funds on behalf of Illinois schools</td>
<td>Illinois has received substantial amounts of e-Rate discounts each year since the program began: $81 million in 1998; $163 million in 1999; $119 million in 2000; and $55-85 million (current estimate) for 2001. Illinois schools have also received $79.6 million from the Technology Literacy Challenge Fund and more than $62 million through the Technology Innovation Challenge Grant (TICG) program. The Illinois total of seven TICG grants is more than any other state except California.</td>
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<tr>
<td>Priority for professional development of teachers</td>
<td>During the first four years of the state technology grant program, districts were required to devote 25% of their funds to professional development. When the state adopted requirements for certificate renewal, technology was one of the “state priorities” for continuing professional development. The regional centers have trained thousands of teachers and administrators in technology and its uses in the classroom.</td>
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<tr>
<td>State provision of online technology resources</td>
<td>Internet-based resources have been made available to school districts through the State Board website. These have included Britannica, Scholastic, bigchalk, Electric Library, Classroom Connect, Educational Structures, Chicago Academy of Science, Learning Outfitters and others. The Illinois School Improvement (ILSI) website provides connections to the Illinois Learning Standards and a variety of supplemental resources, including performance descriptors, model lessons, and assessments. In the near future, the site will also provide examples of student work that meets desired performance levels.</td>
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<td>State provision of curriculum projects and learning opportunities</td>
<td>These include the original Museums in the Classroom project and the MarcoPolo program. The Museum project has been significantly broadened to give all schools access to the full array of museums/cultural resources in the State. The new initiative is called “Schools Without Walls.”</td>
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<td>Support for collaboration and partnerships</td>
<td>The State Board has encouraged and supported districts in leveraging their resources. In addition to initiatives such as the Blazing Learning Trails project, the Board funded the South Cook Education Consortium. This project brings together 8 high-poverty districts in a variety of collaborative efforts designed to use technology to better meet the needs of students.</td>
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<td>Data collection and program evaluation to measure and evaluate progress</td>
<td>The first statewide data collection in 1996 focused primarily on the presence of “boxes and wires.” In 2000, the Illinois State Board of Education created a contract to conduct a multi-year evaluation of the use and impact of technology in Illinois K-12 schools. A variety of resources have been provided for local districts to encourage and assist them in continuously evaluating and improving their technology efforts.</td>
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<td>Targeted advocacy for technology</td>
<td>Tech 2000, an annual technology demonstration in the State Capitol, has served as a highly visible and effective way to develop legislative understanding and support for the uses of technology in K-12 education.</td>
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THE ILLINOIS DIGITAL AGE LEARNING FRAMEWORK: STRATEGIES TO ACHIEVE DIGITAL AGE LEARNING

THE POLICY AND ACTION AGENDA FOR 2002-2007

The 2002-2007 Illinois State Technology Plan reflects and acknowledges the pivotal role of technology in the education of P-16 students and the significance of digital-age learning to the economic viability and quality of life of Illinois citizens.

The framework for addressing these fundamental goals focuses on student learning and the Four System Conditions for Digital-Age, Transformative Learning (see Table 2) that will be required for success in achieving the larger goals.

The 2002-2007 Illinois State Technology Plan supports the ISBE goal which states that the Illinois State Board of Education will generate policies, programs, products, and services that support local district efforts to ensure student success. In support of this goal, the State Technology Plan will generate policies, programs and services that

(A) improve student academic achievement through the use of technology in elementary and secondary schools;

(B) ensure that Illinois students are ready to thrive in a knowledge-based, global society;

(C) assist every student in crossing the digital divide by ensuring that every student is technologically literate by the time the student finishes the eighth grade, regardless of the student’s race, ethnicity, gender, family income, geographic location, or disability; and

(D) encourage the effective integration of technology resources and systems with teacher training and curriculum development, and establish research-based instructional methods that can be widely implemented as best practices by the Illinois State Board of Education, local school districts, and schools.

ILLINOIS PERFORMANCE GOAL 1: Technology will provide all Illinois students with robust, equitable access to rich, diverse, and high-quality learning opportunities contributing to:

- Illinois students’ attainment of high academic achievement or continuous improvement in all learning areas, with particular emphasis on reaching 100% of students meeting reading and mathematics standards by 2014 as required by the federal No Child Left Behind Act of 2001;
- Illinois students’ attainment of the higher-order knowledge, skills, and ways of thinking and acting essential for success in the 21st century;
- Illinois students’ attainment or continuous improvement in the Illinois Technology Literacy Standards skills in the context of multiple learning areas, with particular emphasis on reaching 100% 8th grade student technology literacy by 2014 as indicated in the Illinois state NCLB application.
The strategies under this performance goal establish a foundation to improve student academic achievement through the use of technology in elementary and secondary schools. They clearly establish

- public recognition of technology standards as essential to support improved student achievement;
- a strong emphasis on achieving effective technology use in the context of the Illinois Learning Standards to develop 21st century skills; and
- formal notice that every student must have access to high-quality electronic learning resources and programs.

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<th>PERFORMANCE GOAL</th>
<th>STRATEGIES</th>
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<td>Illinois PG 1: All Illinois students will</td>
<td>Strategy 1A: Ensure that local school improvement plans integrate strategies to make effective use of technology in supporting student learning.</td>
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<td>• demonstrate high academic achievement or continuous improvement in all learning areas;</td>
<td>Strategy 1B: Provide information about technology programs that have proven effective in supporting improved student achievement, particularly in reading and mathematics.</td>
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<td>• attain the higher-order knowledge, skills, and ways of thinking and acting essential for success in the 21st century;</td>
<td>Strategy 1C: Widely disseminate information and research on how effective use of technology can increase student engagement, motivation in learning —and thus student achievement.</td>
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<td>• meet, exceed, or demonstrate continuous improvement in the ISTE’s National Technology Education Standards skills in the context of multiple content areas by 2014.</td>
<td>Strategy 1D: Promote understanding of the 21st century skills needed by students in a digital age and how technology can support the development of those skills.</td>
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<td>Strategy 1E: Adopt and promote technology literacy standards for students (Appendix A) and develop a means for measuring and reporting student achievement in relation to these standards.</td>
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<td>Strategy 1F: Link the ISTE’s National Technology Education Standards to the Illinois Learning Standards’ Performance Descriptors.</td>
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<td>Strategy 1G: Provide high-quality electronic learning resources and programs.</td>
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<td>Strategy 1H: Promote the use of technology to assist and support the achievement of students with special learning needs, including students who are potential dropouts.</td>
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**ILLINOIS PERFORMANCE GOAL 2:** Educators will use technology routinely and effectively for teaching, learning, leadership, and administration by 2014.

The strategies under this performance goal establish a foundation for the competency of educators in education technology, including expertise in designing, implementing, and assessing technology in teaching and learning. They clearly establish

- public recognition of technology standards as essential for teachers, administrators, and other staff;
- a strong emphasis on achieving effective technology use in the context of the Illinois Learning Standards; and
- formal notice to school districts that the technology competency of educators is required.

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<th>PERFORMANCE GOAL</th>
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<td><strong>Illinois PG 2:</strong> All Illinois educators will use technology routinely and effectively in teaching, learning, leadership, and administration by 2014.</td>
<td><strong>Strategy 2A:</strong> Align teacher preparation programs with Technology Standards for Teachers (Appendix 2), ensuring that all teacher candidates in Illinois have an opportunity to meet the Standards and are prepared to use technology in instruction.</td>
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<td><strong>Strategy 2B:</strong> Require passage of the state test on the Technology Standards for Teachers as a condition for receiving the Initial Teaching Certificate in Illinois.</td>
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<td><strong>Strategy 2C:</strong> Integrate technology leadership into the preparation and continuing development programs for school administrators.</td>
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<td><strong>Strategy 2D:</strong> Develop standards for technology professional development of teachers and other educators, and use these standards as a template for evaluating the technology plans of local school districts.</td>
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<td><strong>Strategy 2E:</strong> Improve the quality and consistency of technology professional development by aligning and coordinating the efforts of Regional Offices of Education, Learning Technology Centers, and the public colleges and universities in Illinois.</td>
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<td><strong>Strategy 2F:</strong> Integrate technology into professional development in academic content (e.g., reading, mathematics.)</td>
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<td><strong>Strategy 2G:</strong> Encourage teacher participation in professional development opportunities in technology by retaining “technology” as one of the five “state priorities” for certificate renewal activities.</td>
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<td><strong>Strategy 2H:</strong> Build an Illinois portal that serves as an information utility for educators that includes a learning environment for professional development, a database of research-based technology/learning solutions, information exchanges, and documentaries of promising practices.</td>
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<td><strong>Strategy 2I:</strong> Develop strategies to assess and report on the technology competency of practicing teachers and administrators.</td>
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ILLINOIS PERFORMANCE GOAL 3: Illinois students will be educated in environments conducive to learning in a technological, knowledge-based age by 2014.

The strategies under this performance goal establish the foundation for identifying/defining the type of school learning organizations essential for the effective use of technology—and supporting the transition of schools and districts into such learning organizations. They clearly establish

- public recognition of the Illinois Digital-Learning Framework, outlining and defining the essential conditions that must be in schools if technology is to be used effectively
- capacity building at the state and regional levels to ready and support schools and districts

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<th>PERFORMANCE GOAL</th>
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| Illinois PG 3: All Illinois students will be educated in environments conducive to learning in a technological, knowledge-based age by 2014. | **Strategy 3A:** Establish a comprehensive vision and framework in Illinois for Digital-Age, transformative classrooms and schools that effectively use technology to advance technology literacy and academic achievement (Illinois Digital-Learning Framework).  
**Strategy 3B:** Based on the Illinois Digital-Learning Framework, develop a self-assessment tool that enables educators to profile learning environments, schools, and districts and track progress toward transformative learning environments.  
**Strategy 3C:** Build the capacity of all local school districts, particularly schools with high percentages of children in poverty, to increase effective uses of technology through professional development, strategic planning, change management, and leadership development.  
**Strategy 3D:** Link local districts’ technology plans to their school district improvement plans.  
**Strategy 3E:** Develop a process for assessment and reporting of local progress in creating transformed learning environments. |
ILLINOIS PERFORMANCE GOAL 4: All Illinois students will have access to contemporary and high-speed technologies and communications networks by 2014.

The strategies under this performance goal establish the access required by learners, the education profession, and community. They clearly establish

- public recognition of the need for robust, anywhere anytime access to technology and the Internet for students and educators;
- commitment to sustain and grow the ICN as the backbone for such robust access for P-12 schools; and
- recognition of the critical necessity for technical assistance in all Illinois schools.

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<tr>
<td>Illinois PG 4: All Illinois students will have access to contemporary and high-speed technologies and communications networks by 2014.</td>
<td>Strategy 4A: Establish and continuously update standards for technology infrastructure, networks and technologies.</td>
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<td>Strategy 4B: Continue state financial support for the purchase of technology resources, the operation and improvement of the Illinois Century Network, and the regional support network.</td>
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<td>Strategy 4C: Promote public-private partnerships that support equity of access, particularly for students from high-poverty schools.</td>
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<td>Strategy 4D: Promote community access to technology resources for students and parents.</td>
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ILLINOIS PERFORMANCE GOAL 5: State-level policies, leadership and budgets are aligned to support appropriate use of technology in teaching, learning, leadership, and administration by 2014.

The strategies under this performance goal establish a foundation for establishing the type of school learning organizations essential for the effective use of technology. They clearly establish

- policy, leadership and budget that are aligned to and support a statewide school system that makes appropriate use of technology;
- a school culture that is open to innovation;
- public recognition of the established goals related to technology and 21st century skills;
- public notice of the state-level policy and action agenda required to achieve the goals;
- action plans to build the capacity of schools and districts to achieve the goals;
- commitment to technology and 21st Century thinking as design elements in ISBE’s public policy research and development;
- commitment to research and development of e-learning to meet the needs of all learners;
- annual assessment and accountability for tracking progress in technology literacy and 21st Century skills, and digital learning; and
- action steps for improving the efficiency and effectiveness of state and regional education agencies.
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<th>PERFORMANCE GOAL</th>
<th>STRATEGIES</th>
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| **Illinois PG 5**: Illinois state level policies, leadership and budgets will align to support appropriate use of technology in teaching, learning, leadership, and administration by 2014. | **Strategy 5A**: Establish a statewide technology advisory committee to help develop an on-going a state-level policy and action agenda.  
**Strategy 5B**: Secure ongoing, adequate and sustainable funding for technology.  
**Strategy 5C**: Continue the Learning Technology Centers, holding them to high standards of performance and service.  
**Strategy 5D**: Expand the Illinois Virtual High School and extend it to cover grades K-12.  
**Strategy 5E**: Create standards for electronic-learning programs.  
**Strategy 5 F**: Identify model technology programs and resources and make them accessible to all Illinois educators and students.  
**Strategy 5 G**: Make exemplary technology services from commercial vendors available to all Illinois students.  
**Strategy 5H**: Establish a comprehensive evaluation process that tracks and reports progress in meeting the goals and benchmarks of the plan using internal and external expertise.  
**Strategy 5I**: Establish and fund a research agenda related to technology literacy, student learning, and academic achievement. |
### Four System Conditions Essential for Digital-Age, Transformative Learning

#### Table 2

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<tr>
<td>1.</td>
<td><strong>Educators’ Effective Use of Technology</strong></td>
<td>Knowledgeable, Competent Educators: Illinois students learn under the guidance of educators who routinely and effectively use technology in teaching, learning, leading, and administration. The environment is led and staffed by educators who are informed about, highly competent in, and who model effective uses of technology for learning, teaching, and assessment.</td>
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<td>2.</td>
<td><strong>Transformative Learning System</strong></td>
<td>Commitment to Digital-Age Learning: Students, educators, and community members acknowledge the mission-critical role of technology in the education of today’s learners, allowing students to learn in ways and at levels never before possible. The environment is characterized by high expectations for all students across academic achievement, technological literacy, and 21st century skills. Effective Learning Practices: Illinois students are educated in environments conducive to learning in a technological, knowledge-based age. The use of technology for learning is student-centered, based on current research grounded in sound instructional practice, and consistent with NCREL’s engaged learning model. Students are engaged in intellectually stimulating and relevant work, constructing products that reflect learning. They actively participate in the assessment of their own learning. Learning Opportunities: Illinois students have equitable access to rich, diverse and high-quality learning opportunities through technology. Students, especially those in high-need areas, have their learning needs met in part through their engagement in high-quality learning through virtual courses, access to resources, interactions with peers, and access to experts. Digital Equity: All children have access to contemporary, robust technology and communications networks during and outside the school day; and use such technology access effectively and efficiently regardless of the student’s race, ethnicity, gender, family income, geographic location, or disability.</td>
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<td>3.</td>
<td><strong>Robust Technology Access</strong></td>
<td>Robust Technology Access: Illinois students have access to contemporary and high-speed technologies and communications networks. Learning environments provide contemporary digital technologies as well as high-speed, robust, stable and reliable access to high-quality resources, high-quality e-learning, and communications networks.</td>
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<td>4.</td>
<td><strong>Policy, Leadership, and Accountability</strong></td>
<td>Digital-Age Policy, Leadership, and Accountability: Policies, leadership and budgets are aligned to and support a statewide school system that makes appropriate use of technology in teaching, learning, leading, and administration. The school culture is open to innovation and is influenced, informed, and balanced by research, high-quality professional development, rigorous standards and assessments, accountability, and strong home-school connections. Leaders are informed and knowledgeable about learning and technology. Technology budgets are sufficient to support infrastructure, technical support, curriculum, instruction, assessment, communication needs, student and staff access both inside and outside the school, and professional development.</td>
<td></td>
</tr>
</tbody>
</table>
COST PROJECTIONS

The strategies within the Illinois State Technology Plan collectively fall within four primary spending categories: hardware, software, infrastructure and personnel development. The cost to implement this plan, to reach every student and teacher in each public attendance center over a five year period, is estimated to be $1,063,069,580.

Table 3: Cost Projections for Full Implementation of the 2002-2007 Illinois State Technology Plan

<table>
<thead>
<tr>
<th></th>
<th>Total (n)</th>
<th>Per student, teacher or district cost</th>
<th>Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>2,048,792 Students</td>
<td>$167.00 1</td>
<td>$85,537,066 (based on 4 year cycle)</td>
</tr>
<tr>
<td>Software</td>
<td>2,048,792 Students</td>
<td>$29.00 2</td>
<td>$14,853,742 (based on 4 year cycle)</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>4301 Attendance Centers</td>
<td>$4200 per Attendance Center 3</td>
<td>$18,064,200</td>
</tr>
<tr>
<td>Personnel Development</td>
<td>130,414 Teachers</td>
<td>$722.00 4 per Teacher</td>
<td>$94,158,908</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td>$212,613,916</td>
</tr>
</tbody>
</table>

Note: Total (n) based on data from Quickstats, Illinois State Board of Education, 2001.

2 Based on Maryland State Department of Education, Maryland Technology Plan, March 2002 (page 27).
3 Based on Illinois State Board of Education, Technology Infrastructure Costs.
4 Based on Maryland State Department of Education, Maryland Technology Plan, March 2002 (page 27).
GAUGING PROGRESS 2002-2007

The state is committed to in-depth analyses of the progress students, teachers, administrators, and school systems make toward the effective use of technology to achieve transformative learning.

To achieve this end—and not overburden school districts—the Illinois State Board of Education will:

- work across the state agency to integrate evaluation/assessment processes (e.g., conduct joint, multi-purpose site visits, assess technology literacy in the context of academic testing);
- use contemporary technology to achieve integrated, cost-effective measurements that result in timely reporting of results;
- rely on a combination of progress reports by school districts informed by local evaluations and onsite visitations/validation by assessment teams;
- advance formal reviews that also serve as professional development opportunities for Illinois educators.

The State Board of Education will work with a statewide advisory committee to develop an assessment methodology and instrumentation as indicated below. This committee should include educators with technology expertise, state associations, business and industry representatives, and other key stakeholders.

DATA SOURCES: STUDENT TECHNOLOGY LITERACY

The Illinois State Board of Education will be making changes to its current state assessments to align with NCLB requirements and improve various aspects of the assessments, including the reporting of data to school districts. That process will include consideration of a transition to online state testing for all or part of the Illinois Student Achievement Test (ISAT).

Over the next two years, ISBE will investigate several avenues for measuring 8th grade student literacy, including a) an evaluation of 8th grade technology literacy in the context of new, online testing of academic content standards; b) a combination of online testing of student knowledge and visits of samples of schools to collect performance data; and c) a reliance on school district reporting based on local evaluations and validated through site visits by assessment teams.

DATA SOURCES: EDUCATOR COMPETENCE/SYSTEM CAPACITY AND TRANSFORMATIVE, DIGITAL-AGE LEARNING SYSTEMS

Beginning in 2003-2004 school districts/schools will be requested to complete a local education technology review that addresses educator uses of technology and system conditions essential to transformative learning through technology. Multi-purpose site visits in a stratified, random sample of schools/districts will be used to validate the process and to collect performance data. Once sample assessment tools are completed, ISBE, with advice from the State Technology Committee, will determine how often such reviews will be requested.
DATA SOURCES: INFRASTRUCTURE

School districts will complete or update a technology infrastructure inventory annually.

DATA SOURCES: SYSTEM LEADERSHIP

The Illinois State Board of Education will document policy changes, leadership initiatives, and support structures and services related to technology. The statewide advisory committee will provide oversight of the implementation of the State Plan. Periodically, outside evaluators will be contracted to audit and report results related to this goal.

The following table outlines the program goals, performance indicators, and benchmarks Illinois has established for assessing the effectiveness of the program.

Table 4: Goals, Indicators, and Benchmarks

<table>
<thead>
<tr>
<th>PERFORMANCE GOAL</th>
<th>PERFORMANCE INDICATOR</th>
<th>BENCHMARK/PERFORMANCE OBJECTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois PG 1</td>
<td>1.1 The percentage of students who meet or exceed state standards in all of the academic content areas</td>
<td>Aligned to the NCLB benchmarks for 100% achievement by 2014.</td>
</tr>
<tr>
<td>All Illinois students will</td>
<td></td>
<td></td>
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<tr>
<td>• demonstrate high academic achievement or continuous improvement in all learning areas, with particular emphasis on reaching 100% of students meeting reading and mathematics standards by 2014;</td>
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<td></td>
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<tr>
<td>Illinois PG 1</td>
<td>1.2 The percentage of students who demonstrate proficiency in higher order and 21st century skills at three levels: knowledge, skills, and performance</td>
<td>2003-04: Establish baseline 2004-05: 10% of the gap between baseline and 100% 2005-06: 20% of the gap between baseline and 100% 2006-07: 30% of the gap between baseline and 100% 2007-08: 40% of the gap between baseline and 100% 2008-09: 50% of the gap between baseline and 100% 2009-10: 60% of the gap between baseline and 100% 2010-11: 70% of the gap between baseline and 100% 2011-2012: 80% of the gap between baseline and 100% 2012-2013: 90% of the gap between baseline and 100% 2013-2014: 100% - Goal.</td>
</tr>
<tr>
<td>• attain the higher-order knowledge, skills, and ways of thinking and acting essential for success in the 21st century;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERFORMANCE GOAL</td>
<td>PERFORMANCE INDICATOR</td>
<td>BENCHMARK/TIMELINE</td>
</tr>
<tr>
<td>------------------</td>
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<tr>
<td>Illinois PG 1</td>
<td>• will meet, exceed, or demonstrate continuous improvement in the ISTE’s National Technology Education Standards skills in the context of multiple content areas by 2014.</td>
<td>1.3 The percentage of 8th grade students who meet the Technology Standards for Students (Appendix 1) in the context of all academic content areas</td>
</tr>
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<td></td>
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<tr>
<td>Illinois PG 2</td>
<td>All Illinois educators will use technology routinely and effectively in teaching, learning, leadership, and administration by 2014.</td>
<td>2.1 The percentage of teachers who meet the Technology Standards (Appendix 2) for teachers at the knowledge and performance levels</td>
</tr>
<tr>
<td></td>
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<tr>
<td>Illinois PG 3</td>
<td>All Illinois students will be educated in environments conducive to learning in a technological, knowledge-based age by 2014.</td>
<td>3.1 The percentage of classrooms, schools, and districts that engage students in high quality technology-based learning that is grounded in current research and sound instructional practices, and embedded in the context of the academics</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td>3.2 The percentage of schools with a wide range of technology use across the academics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.3 The number of students whose educational opportunity is improved through e-learning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.4 The percentage of school districts with approved technology plans that meet Illinois guidelines</td>
<td></td>
</tr>
</tbody>
</table>
## PERFORMANCE GOAL | PERFORMANCE INDICATOR | BENCHMARK/ TIMELINE
--- | --- | ---
**Illinois PG 4**  
All Illinois students will have access to contemporary and high-speed technologies and communications networks by 2014. | 4.1 The percentage of schools that meet or demonstrate improvement in meeting the Illinois standards for technology access | Same as above

## PERFORMANCE GOAL | PERFORMANCE INDICATOR | BENCHMARK/ TIMELINE
--- | --- | ---
**Illinois PG 5**  
Illinois State-level policies, leadership and budgets will align to support appropriate use of technology in teaching, learning, leadership, and administration by 2014. | 5.1 The degree to which technology is integrated into state standards  
5.2 The degree to which technology is integrated into state assessments  
5.3 The degree to which technology is integrated into state policies  
5.4 The level and sustainability of state funding for technology in Illinois  
5.5 The leadership of the state in proactively building the capacity of educators, schools, and districts to attain the *Four System Conditions for Digital-Age, Transformative Learning* (Table 2)  
5.6 The quality and effectiveness of the comprehensive evaluation process for gauging education’s progress toward the effective use of technology for all students | Same as above

### SUMMARY
The Illinois 2002-2007 State Technology Plan commits to readying students to thrive in the Digital Age by building on past successes and strengthening the commitment to effective use of technology for all. The new state plan charges Illinois with responsibility for advancing policy and practice through the following policy drivers:

- Transformation of the teaching and learning process to support engaged learning by Illinois students;
- Research-based use of technology to improve student achievement;
- Increased focus on technology literacy for Illinois students;
- Systemic and systematic attention to building and maintaining educator capacity to effectively use technology;
• Assurance of sufficient and high-quality e-learning opportunities for Illinois students;
• Aggressive, continuous and creative attention to issues associated with the digital divide; and
• Strong emphasis to accountability and actions that will ensure the quality of all aspects of technology in P-16 education.

These policy drivers are intended as a framework that will guide decisions and actions during the next five years and allow for course-corrections, as they are needed. Implementation of the drivers will include a review of the State Board technology policy identification of additional standards and benchmarks, decision on funding practices, and development of a fully crafted plan for eliminating the digital divide and ensuring that all students benefit from technology.

If Illinois is to see a return on its school technology investment, it will take the steps outlined in this plan. Educators cannot do this alone. These strategies and tactics must be embraced by the whole state – from policymakers to students in P-16 classrooms – if Illinois is to remain a leader in the Digital Age.
APPENDIX 1

NATIONAL EDUCATIONAL TECHNOLOGY STANDARDS FOR STUDENTS
(http://cnets.iste.org/)

The technology foundation standards for students are divided into six broad categories. Standards within each category are to be introduced, reinforced, and mastered by students. These categories provide a framework for linking performance indicators within the Profiles for Technology Literate Students to the standards. Teachers can use these standards and profiles as guidelines for planning technology-based activities in which students achieve success in learning, communication, and life skills.

Technology Foundation Standards for Students

A) Basic operations and concepts
   - Students demonstrate a sound understanding of the nature and operation of technology systems.
   - Students are proficient in the use of technology.

B) Social, ethical, and human issues
   - Students understand the ethical, cultural, and societal issues related to technology.
   - Students practice responsible use of technology systems, information, and software.
   - Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

C) Technology productivity tools
   - Students use technology tools to enhance learning, increase productivity, and promote creativity.
   - Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

D) Technology communications tools
   - Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
   - Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

E) Technology research tools
   - Students use technology to locate, evaluate, and collect information from a variety of sources.
   - Students use technology tools to process data and report results.
   - Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

F) Technology problem-solving and decision-making tools
   - Students use technology resources for solving problems and making informed decisions.
   - Students employ technology in the development of strategies for solving problems in the real world.
APPENDIX 2

Six Essential Learnings in a Technological Society

Technology is defined to be the combination of human imagination, inventiveness and the electronic/optical tools to transform ideas into reality. Effective use of information and technology will require students to develop new roles in living, learning and working in an increasingly complex and information-rich society. The following essential learnings for technology are fundamental to the work of the Illinois State Board of Education as they develop content standards, performance standards, and assessments for all academic areas.

1. The student as information seeker, navigator and evaluator.
   The student recognizes and values the breadth of information sources, browses those sources, differentiates and selectively chooses sources based on soundness and relevancy, and retrieves appropriate information/data using all forms of electronic/optical media, technology and telecommunications.

2. The student as critical thinker, analyzer and selector of information and technologies appropriate to the task.
   The student uses problem-solving techniques and technology tools to review information and data from a variety of sources; analyze, synthesize and evaluate it; and then transform the myriad of ideas, data and information into useful information and knowledge. During this process the student discriminates among a variety of technologies and electronic/optical media to extend and expand his/her capabilities.

3. The student as creator of knowledge using information resources and technology.
   The student, both individually and as a successful member of a team, constructs new meaning and knowledge in all content areas, combining and synthesizing different types of information through technology, telecommunications and computer modeling/simulations.

4. The student as effective communicator using a variety of appropriate technologies/media.
   The student creates, produces and presents ideas, stories and unique representations of thoughts through a variety of electronic/optical media by analyzing the task before him/her, the technology tools available, and appropriately selecting and using the most effective tool(s)/media for the purpose and audience.

5. The student as a technologist.
   The student develops the confidence, competence, information management strategies and sufficient technical skills to successfully install, setup, and use the technology and telecommunications tools in his/her daily life, work situations and learning environments.

6. The student as a responsible citizen in a technological age.
   The student understands the ethical, cultural, environmental and societal implications of technology and telecommunications, and develops a sense of stewardship and individual responsibility regarding his/her use of technology, media and telecommunications networks.
APPENDIX 3

NATIONAL EDUCATIONAL TECHNOLOGY STANDARDS FOR TEACHERS
(http://cnets.iste.org/)

I. TECHNOLOGY OPERATIONS AND CONCEPTS.
Teachers demonstrate a sound understanding of technology operations and concepts.

Teachers:
A. demonstrate introductory knowledge, skills, and understanding of concepts related to technology (as described in the ISTE National Education Technology Standards for Students).
B. demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies.

II. PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES.
Teachers plan and design effective learning environments and experiences supported by technology.

Teachers:
A. design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners.
B. apply current research on teaching and learning with technology when planning learning environments and experiences.
C. identify and locate technology resources and evaluate them for accuracy and suitability.
D. plan for the management of technology resources within the context of learning activities.
E. plan strategies to manage student learning in a technology-enhanced environment.

III. TEACHING, LEARNING, AND THE CURRICULUM.
Teachers implement curriculum plans, that include methods and strategies for applying technology to maximize student learning.

Teachers:
A. facilitate technology-enhanced experiences that address content standards and student technology standards.
B. use technology to support learner-centered strategies that address the diverse needs of students.
C. apply technology to develop students' higher order skills and creativity.
D. manage student learning activities in a technology-enhanced environment.

IV. ASSESSMENT AND EVALUATION.
Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies.

Teachers:
A. apply technology in assessing student learning of subject matter using a variety of assessment techniques.
B. use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.
C. apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

2002-2007 Illinois State Technology Plan
V. PRODUCTIVITY AND PROFESSIONAL PRACTICE.
Teachers use technology to enhance their productivity and professional practice.

Teachers:
A. use technology resources to engage in ongoing professional development and lifelong learning.
B. continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.
C. apply technology to increase productivity.
D. use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

VI. SOCIAL, ETHICAL, LEGAL, AND HUMAN ISSUES.
Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice.

Teachers:
A. model and teach legal and ethical practice related to technology use.
B. apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
C. identify and use technology resources that affirm diversity.
D. promote safe and healthy use of technology resources.
E. facilitate equitable access to technology resources for all students.
APPENDIX 4

NATIONAL EDUCATIONAL TECHNOLOGY STANDARDS FOR ADMINISTRATORS
(http://cnets.iste.org/)

I. LEADERSHIP AND VISION.

Educational leaders inspire a shared vision for comprehensive integration of technology and foster an environment and culture conducive to the realization of that vision.

Educational leaders:
A. facilitate the shared development by all stakeholders of a vision for technology use and widely communicate that vision.
B. maintain an inclusive and cohesive process to develop, implement, and monitor a dynamic, long-range, and systemic technology plan to achieve the vision.
C. foster and nurture a culture of responsible risk-taking and advocate policies promoting continuous innovation with technology.
D. use data in making leadership decisions.
E. advocate for research-based effective practices in use of technology.
F. advocate, on the state and national levels, for policies, programs, and funding opportunities that support implementation of the district technology plan.

II. LEARNING AND TEACHING.

Educational leaders ensure that curricular design, instructional strategies, and learning environments integrate appropriate technologies to maximize learning and teaching.

Educational leaders:
A. identify, use, evaluate, and promote appropriate technologies to enhance and support instruction and standards-based curriculum leading to high levels of student achievement.
B. facilitate and support collaborative technology-enriched learning environments conducive to innovation for improved learning.
C. provide for learner-centered environments that use technology to meet the individual and diverse needs of learners.
D. facilitate the use of technologies to support and enhance instructional methods that develop higher-level thinking, decision making, and problem-solving skills.
E. provide for and ensure that faculty and staff take advantage of quality professional learning opportunities for improved learning and teaching with technology.

III. PRODUCTIVITY AND PROFESSIONAL PRACTICE.

Educational leaders apply technology to enhance their professional practice and to increase their own productivity and that of others.

Educational leaders:
A. model the routine, intentional, and effective use of technology.
B. employ technology for communication and collaboration among colleagues, staff, parents, students, and the larger community.
C. create and participate in learning communities that stimulate, nurture, and support faculty and staff in using technology for improved productivity.
D. engage in sustained, job-related professional learning using technology resources.
E. maintain awareness of emerging technologies and their potential uses in education.
F. use technology to advance organizational improvement.
IV. SUPPORT, MANAGEMENT, AND OPERATIONS.

Educational leaders ensure the integration of technology to support productive systems for learning and administration.

*Educational leaders:*

A. develop, implement, and monitor policies and guidelines to ensure compatibility of technologies.
B. implement and use integrated technology-based management and operations systems.
C. allocate financial and human resources to ensure complete and sustained implementation of the technology plan.
D. integrate strategic plans, technology plans, and other improvement plans and policies to align efforts and leverage resources.
E. implement procedures to drive continuous improvements of technology systems and to support technology replacement cycles.

V. ASSESSMENT AND EVALUATION.

Educational leaders use technology to plan and implement comprehensive systems of effective assessment and evaluation.

*Educational leaders:*

A. use multiple methods to assess and evaluate appropriate uses of technology resources for learning, communication, and productivity.
B. use technology to collect and analyze data, interpret results, and communicate findings to improve instructional practice and student learning.
C. assess staff knowledge, skills, and performance in using technology and use results to facilitate quality professional development and to inform personnel decisions.
D. use technology to assess, evaluate, and manage administrative and operational systems.

VI. SOCIAL, LEGAL, AND ETHICAL ISSUES.

Educational leaders understand the social, legal, and ethical issues related to technology and model responsible decision-making related to these issues.

*Educational leaders:*

A. ensure equity of access to technology resources that enable and empower all learners and educators.
B. identify, communicate, model, and enforce social, legal, and ethical practices to promote responsible use of technology.
C. promote and enforce privacy, security, and online safety related to the use of technology.
D. promote and enforce environmentally safe and healthy practices in the use of technology.
E. participate in the development of policies that clearly enforce copyright law and assign ownership of intellectual property developed with district resources.