

Learning with 21st Century Tools
The 2009-2012 Vermont Educational Technology Plan

PART I

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Contents

Introduction.....	1
<i>Vermont’s Vision for Learning Technology.....</i>	<i>2</i>
I. The 2009-2012 Vermont Educational Technology Plan.....	3
Goal 1: Student-centered learning	3
Goal 2: Leadership in a student-centered environment	4
Goal 3: Flexible Learning Environments.....	4
Goal 4: Engaged Community Partners	5
Goal 5: Effective Local Technology Plan Evaluation	6
II. A Framework for Local Planning	8
<i>Connecting the State Transformation Plan to Local Technology Initiatives.....</i>	<i>8</i>
<i>Key Points for Local Plan Creation.....</i>	<i>9</i>
<i>Sample Action Plan Template.....</i>	<i>10</i>
Guidance and Templates for Creating Local Goals and Action Plans.....	12
<i>Student-centered learning.....</i>	<i>13</i>
Organizing Question for This Goal	13
Essential Questions for Creating Local Action Steps	13
VT DOE’s Background and Rationale for This Goal	14
Action Plan Template	15
<i>Leadership in a Student-centered learning Environment</i>	<i>16</i>
<i>FLEXIBLE LEARNING ENVIRONMENTS.....</i>	<i>18</i>
<i>Engaged Community Partners.....</i>	<i>20</i>
<i>Effective Local Technology Plan Evaluation.....</i>	<i>22</i>
Background.....	22
Creating Indicators.....	22
Collecting Data	24
<i>Pulling It All Together: Compiling an Evaluation Report.....</i>	<i>25</i>
<i>Evaluation Report Template</i>	<i>26</i>
<i>Signature Page.....</i>	<i>28</i>
Appendix A: Successes from Past Tech Plans	29
Appendix B: Sources: NCLB and the Partnership for 21st Century Skills.....	32
Appendix C: Resources: To Assist in Local Planning.....	34
Acknowledgments and Thanks	36

Introduction

The Vermont Department of Education and the State Board of Education recently collaborated to produce *The Transformation of Education in Vermont*, a guiding framework for initiatives aimed at shaping Vermont's K-12 schools into vibrant centers for 21st century learning. Adopted by the State Board in July 2008, *The Transformation of Education in Vermont* calls for the central focus of our transformation work to be student-centered learning, with technology playing a supporting role by enabling students to engage actively with their learning environment, to access resources beyond school walls, and to communicate globally. This approach has long been embraced by the education-technology community — and *The Transformation of Education in Vermont* supplies all Vermonters with a timely and welcome platform for continuing the discussion about the role technology can play in our schools and communities.

With this visionary work having set the stage, in summer 2008 a small group of Vermonters took on the challenge of generating ideas for further integrating technology into Vermont K-12 education. Building on the important work around the state that was shaped by the Vermont educational technology plans of 2004-2007, and guided by the Transformation framework, the team worked with the state Department of Education to craft this new document, *Learning with 21st Century Tools: The Vermont Educational Technology Plan 2009-2012*.

An important basis for this plan is the fact that in virtually all Vermont schools, access to broadband communications has been achieved. Coupled with improved access to technology tools, widespread access to network resources has opened up enormous possibilities for learning. The central focus of this new plan addresses how Vermont schools — teachers, students, and administrators — can make the fullest, wisest, most powerful use of this opportunity that has been created for Vermont children.

It is no longer enough to focus on technology *skills*, as it is clear every day that most students have or are quick to acquire these skills. What still holds many Vermont schools back is the continuing separation of technology from the rest of the school curriculum. Technology must become the transparent component that is integrated seamlessly in all areas of the curriculum. As *The Transformation of Education* describes the vision: “Digital learning tools will largely replace textbooks and teacher lectures as the way students access new information. Technology links students to the world, with teachers as their guides and coaches as they explore and experience.”

This plan presents five basic goals that, if achieved and implemented, can meet the needs of schools throughout Vermont for guidance in meaningfully integrating technology in all aspects of teaching and learning. These goals are *Student-Centered Learning*, *Leadership in a Student-Centered Learning Environment*, *Flexible Learning Environments*, *Engaged Communities*, and *Effective Local Technology Plan Evaluation*.

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Vermont's Vision for Learning Technology

*The aim of 21st century education is **learning** — creative, powerful, personal, and open-ended in our lives. Technology should be the water, ever-present yet almost invisible, in which our students' learning swims.*

Nearly all our workplaces have been transformed by technology, and this change continues alongside the near-constant creation of new knowledge, new careers, and new industries. We can't know for sure today what job-specific knowledge and skills our young people will need when they join the workforce; but we can be confident in knowing what underlying skills and learning experiences will equip them to succeed, and to contribute as citizens, in this fast-evolving century.

Our young people must learn to communicate, to collaborate, to work creatively, to embrace new technologies, and to continue gaining new knowledge and educating themselves throughout their lives. With Vermont's strong learning-technology infrastructure, our state is positioned to meet this challenge, to give our K-12 students the chance to thrive in today's globalized learning environment. But the intensity of this environment, and the competitive challenges our graduates will face, demand that we act boldly and with vision to shape our schools into true centers for 21st century learning.

Good teaching makes learning possible and powerful for all students — and technology supports and empowers good teaching. Yet too often, for a variety of reasons, we separate teaching and technology from each other in our schools. Vermont's vision is for technology to play a much stronger role, to be interwoven within the processes of teaching and learning. When schools and teachers engage all students in using technology effectively, not just to do old tasks in speedier ways but to help them think, create, and communicate in new ways, then educational technology becomes integrative and transforming.

Good teachers understand that technology “can be a means to access content on any topic, a tool for thinking and creating, a connection to peers and experts, and a window into other cultures” (*Maximizing the Impact: The Pivotal Role of Technology in a 21st Century Education System*, State Education Technology Directors Assoc. (SETDA), 2007). Good teachers use this understanding to enhance the work they do in classrooms, bringing new relevancy and authenticity to the subjects they teach.

Twenty-first century learning engages students through technology in these key ways:

- Students learn actively, engaging in and completing projects about which they have cause to care.
- Students work together, in pairs and groups, meeting challenges that call on their creativity.
- Students interact and communicate with others — peers, educators, and experts within or outside school — and they build the feedback they receive into their work.
- Students access information in virtually limitless ways.
- Schools embrace technology as a powerful force in students' lives, and open new doors to accessibility.
- Adults in schools are open to seeing relevant uses within the classroom for the technology tools that students are using outside school.

When these connections are woven schoolwide between good teaching, thoughtful uses of technology, and appreciation for the relevancy of global access to information and communication, then we have truly begun to transform our schools for the 21st century, and for all our students' futures.

This is Vermont's vision. It's simple and powerful. And its time is now.

I. The 2009-2012 Vermont Educational Technology Plan

The 2009-2012 Vermont State Technology Education Plan has five goals. Here they are, together with information on how the State Department of Education will work with supervisory unions toward achieving them.

Goal 1: Student-Centered learning

Goal:	Teachers create a learning environment in which Vermont students use information and communication technologies to engage in learning tasks that are meaningful, relevant, and authentic, in ways that engage their interest and foster independent and collaborative learning. Best practices lead to activities not always dependent on direct instruction and teacher-imparted knowledge.
DOE will:	<ul style="list-style-type: none"> • Provide guidance to the schools in the use of the Vermont Grade Expectations in Information Technology. Adoption of the NETS-S 2007 will be coupled with strategies to address student-centered learning in content areas. • Continue to define student-centered learning and the ways that schools can approach technology acquisition and utilization to support it. • Provide, as available funding allows, grant opportunities for student-centered activities that involve the expansion of school-based access to technology (putting technology into the hands of students). • Provide, as available funding allows, quality professional development for teachers in the area of student-centered learning concepts.
The SU will:	<ul style="list-style-type: none"> • Provide a robust, cross-curricular, student-centered learning environment that uses modern technology tools to engage individual learning styles, extend learning opportunities, support individual learning plans, and provide access to resources not typically found in the school environment. • Become familiar with standards in 21st century skills, and include these updated standards in planning activities. • Explore ways to develop student-centered learning activities that take advantage of technology-rich applications. • Work toward student-centered learning practices that take advantage of effective technology use and the ways in which technology can enrich and expand the learning environment. • Provide professional development opportunities, with the expectation that teachers will learn and use these tools. • Create assessments for all learning content areas that integrate technology skills as a part of the assessed student learning.

Goal 2: Leadership in a Student-Centered Environment

Goal:	Vermont school administrators foster the development of teacher and student leaders for student-centered learning through technology.
DOE will:	<ul style="list-style-type: none"> • With help from other relevant state entities, VSBA, VPA, VSA, etc., provide guidance to leadership in the acquisition of technology. • Continue to explore ways through federal funding to impact leadership professional development in technology integration, as well as the use of online tools for communication and collaboration. • Provide opportunities for school leadership that continue the discussion of the <i>Transformation of Education in Vermont</i>, and how it impacts school technology programs. • Support the development of teacher and student leadership for effective use of technology for student-centered learning.
The SU will:	<ul style="list-style-type: none"> • Build awareness of student use of technology beyond school walls, and seek ways to integrate these tools into everyday instruction and student learning plans. • Develop expectations for district professional development activities that require the integration of 21st century tools and a focus on student-centered learning in classrooms. • Model the use of technology in everyday practice. This may include the effective use of online communication tools for communicating with parents and the community. • Strive to devise innovative, meaningful ways to provide technology for teachers as a necessary tool for their daily work. • Strive to provide adequate access for students to technology tools for learning in student-centered environments.

Goal 3: Flexible Learning Environments

Goal:	Vermont schools use technology to provide robust educational opportunities to students, including distance learning, and provide resources in ways that allow for varied access during and beyond the traditional school day. Access to multiple forms of learning resources on a 24/7 basis becomes a common goal for schools.
DOE will:	<ul style="list-style-type: none"> • Continue to foster and support a robust videoconferencing system that is available to schools statewide. This videoconferencing system will be expanded continually, to bring rewarding curricular materials to all schools. • Continue to explore and promote a direction for broadband access that envisions a statewide network that can be utilized to leverage maximum gain for E-rate reimbursement; and provide services that will continue to grow Vermont’s broadband capacity. (Future services might include robust videoconference connectivity, services for SIS, spam/email filtering services, etc.) • Continue to pursue and develop the expansion of learning opportunities for students beyond the regular school day. This expansion includes, but is not

	<p>limited to, online course opportunities, continued pursuit of online and virtual high school programs, and the use of collaborative tools (Web 2.0) for student communication and collaboration.</p> <ul style="list-style-type: none"> • Provide mechanisms with which to encourage teachers to become involved in collaborative learning projects with other teachers throughout the state, nation, and world.
<p>The SU will:</p>	<ul style="list-style-type: none"> • Develop resources that provide learning opportunities that students can access via technology beyond their school day. This may include websites, podcasts, and online course environments. • Provide robust broadband access for school campuses, and provide reliable, cost-effective digital devices for student use. • Explore scenarios for students to utilize student-owned technology on the school campus. • Become aware of the variety of rich opportunities available through distance learning, and encourage its use by teachers and students. • Extend learning opportunities by using technology to collaborate with others locally, regionally, statewide, nationally, and internationally to solve problems, create new knowledge, and develop 21st century skills. • Explore opportunities for creating and maintaining physical environments conducive to technology-rich collaboration. Examples might include: Wireless access points throughout school buildings, common student areas that allow for collaborative learning, and bright, well-lit common spaces for presentations and larger group gatherings.

Goal 4: Engaged Community Partners

<p>Goal:</p>	<p>Vermont schools use technology tools to develop all manner of partnerships within the local, regional, state, and global communities. These partnerships are founded with the aim of providing a rich resource to students, building opportunities for learning, and helping foster overall community growth. They also assist schools in sharing relevant information with parents, community members, school partners, and other school sites.</p>
<p>DOE will:</p>	<ul style="list-style-type: none"> • Provide education opportunities and relevant grant resources to build community partnerships with state, national, and global entities. • Foster and support communication between school communities in a variety of ways. • Continue to foster connections to other regions, entities, and global partners through the use of the Learning Network of Vermont. • Continue to provide and support initiatives that draw on local and regional resources through the use of electronic means. • Provide and showcase examples, when possible, that exemplify best practices in the engagement of community partners.

<p>The SU will:</p>	<ul style="list-style-type: none"> • Provide online resources for fostering parent involvement in school communities. These may involve, for example, day-to-day communication with parents via email, providing electronic access to student files and individual learning plans and examples of work, and providing regular access to student information system data on their child’s progress. • Become a model of collaborative communication for local communities, with students involved in the creation, development, and maintenance of websites and other collaborative tools for local projects and entities.
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Goal 5: Effective Local Technology Plan Evaluation

This goal is presented in a different format, because expectations for how it will be implemented at the local level vary from the previous four goals. Goal 5 has two components:

1. That technology will be employed both as a tool for student assessment and as a mechanism for distributing data that is used for educational decision-making.
2. That local districts will formatively monitor the degree to which local technology plans are implemented. *However, the VT DOE is not requiring regular reporting of district technology-plan evaluations to the Department.*

As for the first component, the DOE considers the development of assessments of students’ technology skills, as well as the use of technology to support assessment in all content areas, to be part of achieving Goal 1, Student-Centered Learning. The use of technology to drive and support decision-making is part of achieving Goal 2, Leadership in a Student-Centered Environment. This integration is in keeping with the overall concept that technology tools and systems are simply mechanisms that support the core goals of learning, leading, etc.

The second part of Goal 5 asks that the local districts develop measures to monitor their progress in implementing their technology plans. As part of this planning, they are urged to develop performance indicators of each of the four primary goals. The setting of these indicators, and the gauging of local progress toward meeting them, will together reflect the local degree of accomplishment of Goal 5.

More detail on the local evaluation process is included in Part II of this document, in the section on Effective Local Technology Plan Evaluation.