

# 2011-2016

## Dover Sherborn Public Schools Educational Technology Plan

Draft #1



*Technology in the Classroom*

Jean M. Conkey,  
Director of Technology

Valerie Spriggs, Superintendent of  
Schools

Steven Bliss, Assistant  
Superintendent of Schools

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## INTRODUCTION

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During the last two years, the Dover Sherborn Public Schools technology program has been characterized by growth and innovation. The expanded use of technology in all grade levels and departments has made the instructional and administrative use of computers an important and highly visible system-wide initiative.

Effective use of technology requires careful planning. The Dover Sherborn Technology Advisory Committee (TAC) extensively discusses the current status and future goals of the technology program for the schools. Those discussions, the Strategic Plan, the National Educational Technology Plan published in March 2010, The International Society for Technology and Education (ISTE), and current research in instructional technology, inform the content of this Technology Plan.

## SYSTEM-WIDE MISSION, BELIEFS, & VISION

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### *Mission*

To inspire, challenge and support all students as they discover and pursue their full potential.

### *Beliefs*

We believe that....

- Every student is capable of learning and achieving at high levels given proper support.
- Every student needs to be recognized as a unique, multifaceted individual who deserves to be inspired, challenged and supported in their learning and achievement.
- Students, faculty and staff thrive in a safe, nurturing environment of respect, high expectations, integrity and compassion.
- Great teachers are essential to students' pursuit of excellence.
- Student learning and achievement are the shared responsibility between students, teachers, families and the wider community.
- Dover-Sherborn Public schools must be responsive to the changing world and how those changes influence the educational, social, cultural needs of our students.
- Clear educational direction, priorities and expectations are a key ingredient to fostering high levels of teaching and learning.
- In partnership with our communities and parents we must help our students to develop the values and qualities that will enable them to become engaged and effective members of society.
- Dover Sherborn School System should provide an environment for students where learning is challenging, rewarding and fun.

### *Vision 2015*

We will distinguish ourselves through innovative teaching and learning experiences that inspire all students to pursue their individual passion for learning and excellence while we continue to be a nationally recognized, high-performing school system.

## TECHNOLOGY GOAL, VISION & GUIDING PRINCIPLES

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### *Technology Vision*

The Dover Sherborn Public Schools has a longstanding, continuous commitment to providing our students with the best possible education. As a system we seek to identify, implement and maintain best practices in the technology arena to enhance students' educational experience. The use of technology is seamlessly integrated in all aspects of schools' operations both instructionally and administratively.

We believe that all members of the school community should be able to:

- Use appropriate technology as one of the tools for teaching and learning.
- Have access to appropriate technology throughout the system.
- Use technology as a tool for creative expression, presentation and publication, research, analysis and problem-solving.
- Use technology to enhance communication, collaboration and project management.
- Adhere to Digital Citizenship and Internet Acceptable Use Policy and understand the ethical issues related to using technology.

In order to realize this vision, we must continually respond to changes in technology through an ongoing process of review and evaluation of the effectiveness of technology. This process includes maintaining a strong technology infrastructure, providing ongoing technical support, and investing in a comprehensive and ongoing technology staff development program.

### *Guiding Principles*

Technology is a tool that supports 21<sup>st</sup>-Century skills including information seeking, analysis, reasoning, and problem solving skills, information and communication skills, and inter-personal, collaborative, and self-direction skills.

- Technology supports the diverse learning needs of all students and heightens operational and instructional efficiency among personnel.
- Meaningful technology use encourages active, independent, and life-long learning.
- Technology helps facilitate learning by expanding it beyond the walls of the classroom.
- Students and all personnel will have access to the tools and technology necessary to fulfill their respective role.
- All personnel must be supported in their use of technology with working, up-to-date technology, timely technical support, and continuous, meaningful, high quality professional development and coaching.

## SETTING THE CONTEXT

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### **Dover Sherborn Public Schools' Strategic Plan**

The Dover Sherborn Public Schools' Strategic Planning Committee identified technology as one of five areas on which the school system will concentrate over the next five years.

Specifically, the technology goal reads:

#### **Application and Integration of Technology into Teaching and Learning**

*We will develop and implement a dynamic and ongoing process to create and sustain an innovative plan to use technology to maximize the teaching and learning experience throughout our school system by September 2011.*

### **National Technology Planning Efforts**

Several national technology planning initiatives have provided a framework for this Technology Plan. These efforts are sponsored by major educational technology leadership organizations and the U.S. Department of Education.

#### The National Educational Technology Plan

The latest National Educational Technology Plan, *Transforming American Education: Learning Powered by Technology*, contains several recommendations dealing with issues such as improving teacher training, moving toward digital content, and integrating data systems.

#### The International Society for Technology and Education (ISTE)

ISTE is the leading professional organization for computer teachers and educational technology leaders.

In 1998, ISTE released a set of technology standards describing technology competencies for students, teachers, and administrators. These standards address several broad areas of technology use. For example, the student standards describe basic operations and concepts, social/ethical issues, technology productivity tools, communications tools, research tools, and problem-solving/decision making tools.

In early 2007, ISTE released a document containing revised standards. Specifically, the revised standards build on the original standards (1998) while providing a focus on new areas, such as “digital citizenship” and “innovation.” This plan addresses these new areas of focus. ISTE plans to release its most recent iteration of standards in 2011 which will be considered by Dover Sherborn’s TAC upon publication.

An action plan outlining objectives in support of this technology goal and aligned with the educational objectives defined in the National Educational Technology Plan follows:

WHAT	HOW	RESOURCES	OUTCOME	TIME
<p><b>Objective 1.</b> Reconfigure IT staff from building-based to skill-based in a system-wide model.</p>	<p>a. Organization chart for the IT Department includes Computer Technician, Data, Data Manager, Network Administrator, Systems Analyst and Technology Director</p> <p>b. Job descriptions &amp; responsibilities</p>	<p>a. Administration</p> <p>b. Technology Advisory</p> <p>c. IT Staff</p>	<p>a. Written organization chart</p> <p>b. Written job descriptions &amp; responsibilities</p> <p>c. Effective use of Human Resources to maximize services and efficiency</p>	<p>Fall 2011 through Spring 2012</p>
<p><b>Objective 2.</b> Communication</p>	<p>a. Expand Aspen Parent Portal (secondary level)</p> <p>b. Website</p> <p>c. Connect Ed</p> <p>d. Mass Email (school news and publications)</p> <p>e. Handheld device use</p>	<p>a. Administration</p> <p>b. IT staff</p> <p>c. Building staff</p>	<p>a. Additional features of Aspen Parent Portal available</p> <p>b. Website launch/RSS feed and calendar ICal features activated</p> <p>c. Heightened emergency response</p> <p>d. Implement a SMS based text option</p>	<p>Summer 2010 through Spring 2013</p>
<p><b>Objective 3.</b> Publish and annually refine the Technology Plan for the DS Schools spanning a five year period with a focus on teaching/learning</p>	<p>a. Assess current programs, technology, and trends by soliciting input from various stakeholders</p> <p>b. Research other school systems' technology use report findings to inform future decision-making at DS</p> <p>c. Provide rigorous, relevant and continuous Professional Development on technology integration</p>	<p>a. Time</p> <p>b. IT Staff</p> <p>c. Building-based technology committees composed of administrators, faculty and staff</p> <p>c. Professional Development</p> <p>d. Collaboratives (i.e., TEC, ACCEPT, MassCUE, METTA, ISTE)</p>	<p>a. Five-Year Technology Plan</p> <p>b. Centralized process for acquiring and inventorying both hardware and software</p> <p>c. Provide all users with sufficient time, support and professional training</p> <p>d. Raise awareness of the implications of technology in teaching and learning</p>	<p>Summer 2010 through Summer 2015</p>

## PLANNING NORMS

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### *Norm One: Continuous*

Engaging in five year technology planning is challenging in that the school system must balance existing resources and current technologies against unknown future resources and emerging technologies. Accordingly, this and all Technology Plans, while authored with the best information available, are subject to budgetary constraints, the changing nature of technology, and the opportunities and challenges presented by the often competing needs of students and staff. Such adjustments are reflected during the budget request and development process each year.

### *Norm Two: Purposeful and Thoughtful*

The goals defined in this Plan are designed to support and to provide the necessary tools for students, teachers, administrators, and staff with a focus on communication, productivity, and instruction. Planning begins at the building level with curriculum needs, integration goals, and operational expectations. Needs assessments, both informal and formal, inform the goal setting process. Pilot programs are employed to test and gauge the effectiveness of technology initiatives based on quantitative and/or qualitative measures.

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### *Norm Three: Quality Improvement*

The tenet that Information Technology (IT) staff and infrastructure must be proactive, responsive and resilient underlies this Technology Plan. Successful technology innovation occurs most effectively in an environment in which both manpower and equipment not only meet but also exceed user needs.

### *Norm Four: Efficiency*

The IT staff works collaboratively with all stakeholders on an ongoing basis and as technology evolves to define opportunities for organizational efficiency. This goal requires the re-examination of current practices, infrastructure capacity, and software solutions.

## IMPLEMENTATION GOALS AND OBJECTIVES

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### NETP GOAL 1 LEARNING: ENGAGE AND EMPOWER

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#### A Model for the 21st Century

*All learners will have engaging and empowering learning experiences both in and outside of school that prepare them to be active, creative, knowledgeable, and ethical participants in our globally networked society.*

To meet this goal, we recommend the following actions:

- 1.1 Revise, create, and adopt standards and learning objectives for all content areas that reflect 21st century expertise and the power of technology to improve learning.
  - 1.2 Develop and adopt learning resources that use technology to embody design principles from the learning sciences.
  - 1.3 Develop and adopt learning resources that exploit the flexibility and power of technology to reach all learners anytime and anywhere.
  - 1.4 Use advances in the learning sciences and technology to enhance STEM (science, technology, engineering, and mathematics) learning and develop, adopt, and evaluate new methodologies with the potential to enable all learners to excel in STEM.
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### DOVER SHERBORN GOALS ALIGNED WITH NETP LEARNING GOAL

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1.1

Ongoing curriculum revision in all disciplines in grades K-12 considers technology integration against the landscape of 21<sup>st</sup> century learning skills

1.2

Engage in research and development of curriculum across multiple areas of study using a foundation of technological literacy (i.e., Gateway Project-NCTL)

1.3

Provide students opportunity to take online courses or to participate in blended learning courses by 2015. (Significant professional development will be provided to teachers in support of this goal, and a collaborative approach will be used in designing, implementing, and assessing such courses)

1.4

Conduct an assessment of all existing interdisciplinary units of study and/or projects and provide professional development on the topic of interdisciplinary work with particular emphasis on STEM

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## NETP GOAL 2 ASSESSMENT: MEASURING WHAT MATTERS

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*Our education system at all levels will leverage the power of technology to measure what matters and use assessment data for continuous improvement.*

To meet this goal, we recommend the following actions:

2.1 Design, develop, and adopt assessments that give students, educators, and other stakeholders' timely and actionable feedback about student learning to improve achievement and instructional practices.

2.2 Build the capacity of educators and educational institutions to use technology to improve assessment materials and processes for both formative and summative uses.

2.3 Conduct research and development that explore how gaming technology, simulations, collaboration environments, and virtual worlds can be used in assessments to engage and motivate learners and to assess complex skills and performances embedded in standards.

2.4 Revise practices, policies, and regulations to ensure privacy and information protection while enabling a model of assessment that includes ongoing student learning data gathering and sharing for continuous improvement.

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## DOVER SHERBORN GOALS ALIGNED WITH NETP ASSESSMENT GOAL

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2.1

Launch and expand the Family Portal in Aspen (student information system) to provide greater and more timely feedback to parents/guardians on student performance

Utilize emerging technologies to furnish teachers with immediate information related to students' content mastery (i.e., Clicker Technology, Cognite/Aspen Learning Management System)

2.2

Use Aspen as a repository for all historical and current federal, state, and local assessment data (i.e., Dibels, DRA/PHRA, MCAS, MEPA, PSAT, SAT, AP, ACT)

Utilize the Education Data Warehouse (EDW) for the areas of Science, English and Mathematics

Implement access to standards-based report cards at the elementary level through Aspen

2.3

Engage in research and development of curriculum across various content areas of study using a foundation of technological

literacy (i.e., Gateway Project-NCTL, STEM)

2.4

Commit to refining policies and protocols related to students' information (i.e., Digital Citizenship and Internet Acceptable Use Agreement, Civil Rights training, annual disclosure notification to parents and guardians regarding FERPA and PRPA, Data Warehouse access monitoring)

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## NETP GOAL 3 TEACHING: IMPROVE LEARNING THROUGH CONNECTED TEACHING

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*Professional educators will be supported individually and in teams by technology that connects them to data, content, resources, expertise, and learning experiences that enable and inspire more effective teaching for all learners.*

3.1 Design, develop, and adopt technology-based content, resources, and online learning communities that create opportunities for educators to collaborate for more effective teaching, inspire and attract new people into the profession, and encourage our best educators to continue teaching.

3.2 Provide pre-service and in-service educators with preparation and professional learning experiences powered by technology that close the gap between students' and educators' fluencies with technology and promote and enable technology use in ways that improve learning, assessment, and instructional practices.

3.3 Transform the preparation and professional learning of educators and education leaders by leveraging technology to create career-long personal learning networks within and across schools, pre-service preparation and in-service educational institutions, and professional organizations.

3.4 Use technology to provide access to the most effective teaching and learning resources, especially where they are not otherwise available, and to provide more options for all learners at all levels.

3.5 Develop a teaching force skilled in online instruction.

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## DOVER SHERBORN GOALS ALIGNED WITH NETP TEACHING GOAL

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3.1

Expand the use of learning management systems to create online and blended learning platforms. The Cognite/Aspen platform piloted during the 2011-2012 school year will be in place for all teaching faculty by 2013

3.2

Technology Integrators throughout the school system will engage in professional development and collaboration aimed at increasing and standardizing best practices

Identify and provide time for content/grade level teachers to collaborate with and to support colleague teachers with technology integration

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### 3.3

Expand internal technology related professional development opportunities (i.e., in-service days, institutes)

Define specific technology needs among faculty and staff and embed those needs in an articulated training schedule that is reviewed annually

### 3.4

All classrooms will be outfitted with Interactive White Board (IWB) Technology by 2015 and teachers will be trained in a common platform (i.e., Easiteach)

Expand the use of and training for Assistive Technologies (AT) following the Universal Design for Learning (UDL) model

Device acquisition will be considered with an array of options (i.e., netbooks, laptops, desktops, iPads, iPods, tablets) based on discrete needs assessment

### 3.5

Provide teacher training in creating course content in online and/or blended learning platforms (i.e., Project ABLE, TEC Online Academy, Cognite/Aspen pilot FY2011-2012)

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## NETP GOAL 4 INFRASTRUCTURE: PEOPLE, PROCESSES & TECHNOLOGIES FOR LEARNING

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*All students and educators will have access to a comprehensive infrastructure for learning when and where they need it.*

4.1 Ensure that students and educators have adequate broadband access to the Internet and adequate wireless connectivity both inside and outside school.

4.2 Ensure that every student and educator has at least one Internet access device and software and resources for research, communication, multimedia content creation, and collaboration for use in and out of school.

4.3 Leverage open educational resources to promote innovative and creative opportunities for all learners and accelerate the development and adoption of new open technology-based learning tools and courses.

4.4 Build state and local education agency capacity for evolving an infrastructure for learning.

4.5 Support “meaningful use” of educational and information technology in states and districts by establishing definitions, goals, and metrics.

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## DOVER SHERBORN GOALS ALIGNED WITH NETP INFRASTRUCTURE GOAL

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4.1

Monitor and increase broadband access and wireless infrastructure to support demand

Annually conduct surveys among parents/guardians and faculty/staff to determine outside broadband access needs

4.2

Evaluate and plan for inclusion of mobile/wireless devices for all students and educators by 2014 (i.e., Bring Your Own Device, BYOD, school system provided)

4.3

Evaluate and research open source options (i.e., Open Office, Google docs, GMail, cloud computing) for instructional and operational use

4.4

Orchestrate the migration of existing learning management systems/web-based curriculum resources (i.e., Quia, Wikis) to the Cognite/Aspen platform

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Identify the Cognite/Aspen platform as the school system's universal learning management system

Plan for Student Interoperability Framework (SIF) compliancy with the Department of Elementary and Secondary Education (DESE)

4.5

Use technology to enhance the school system's overall operations and processes with the tandem goals of efficiency and optimum teaching and learning. Enhancements are identified through a careful evaluation of current practices, and once adopted, enhancements are evaluated for effectiveness

Collaboratively approach system-wide technology integration and implementation with a vision towards meeting the learning needs of all students

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## NETP GOAL 5 PRODUCTIVITY, EFFICIENCY AND COMMUNICATION

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### Improving Learning Outcomes While Managing Costs

Our education system at all levels will redesign processes and structures to take advantage of the power of technology to improve learning outcomes while making more efficient use of time, money and staff.

5.1 Develop and adopt a common definition of productivity in education and more relevant and meaningful measures of outcomes, along with improved policies and technologies for managing costs, including those for procurement

5.2 Rethink basic assumptions in our education system that inhibit leveraging technology to improve learning, starting with our current practice of organizing student and educator learning around seat time instead of the demonstration of competencies.

5.3 Develop useful metrics for the educational use of technology in states and districts.

5.4 Design, implement, and evaluate technology-powered programs and interventions to ensure that students progress seamlessly through our P–16 education system and emerge prepared for college and careers.

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## DOVER SHERBORN GOALS ALIGNED WITH NETP PRODUCTIVITY, EFFICIENCY AND COMMUNICATION GOAL

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### 5.1

For the purpose of this plan as it relates to technology in our school system, productivity is best defined as optimally using scarce resources to meet stakeholders' (i.e., administration, faculty, staff, parents/guardians, students, community members) needs.

Evaluate current procurement protocols spanning three school districts to identify possible cost savings realized through volume purchasing (as one school system)

Reconfigure IT staff from building-based to skill-based in a system-wide model

### 5.2

Identify and embrace innovative approaches to master schedule building and to the actual delivery of course content (i.e, blended, online)

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Continue to expand technology infrastructure (i.e., IWBs, handheld devices, assistive technology) in support of more diverse teaching methods

Examine device/inventory deployment to make technology readily available (positioning laptop carts in optimum physical location for ease of use)

### 5.3

Develop online data tools providing immediate metrics as to student progress

Enact systems through which information about the use and efficacy of technology is shared with decision makers (i.e., annual survey, feedback from building-based technology teams)

Assess teaching methods involving technology (i.e., IWBs, handheld devices, AT)

### 5.4

Examine the individual student progress monitoring and reporting feature in Aspen

Incorporate a data reporting model using Aspen providing real-time data concerning student progress (“data dashboard”)

Monitor Aspen’s integration of the Cognite and Tetradata, the systems designed to identify a student’s strengths/weaknesses and suggest curriculum resources