

Tewksbury Technology Plan 2009 – 2013

EXECUTIVE SUMMARY

The five-year plan for technology in the Tewksbury Public Schools, developed by the Tewksbury Technology Committee, will address the six recommended benchmarks identified by the Massachusetts Department of Education. These six benchmarks include: Vision and Mission Statement, Technology Integration, Technology Professional Development, Accessibility of Technology, Infrastructure for Connectivity, and Access to the Internet outside the School Day.

The committee envisioned scenarios representing significant, five-year technological improvements and recorded these in this report. Their composite vision led to the creation of a Mission Statement for the group:

Modern technology will be used to challenge, prepare, and raise expectations for the students of the Tewksbury Public Schools to insure that each student will become a productive member of society with a commitment to life-long learning.

This vision, developed during the first submission of the Tewksbury Technology Plan in 1997, was shared with a wide range of interested parties, from the school system, parent body, and community at large. Various school department personnel continue to conduct research into the current status of hardware, software, teacher and student attitudes, and technology funding. Based on the shared vision and an awareness of the present resources, the group developed the components of our new five-year Technology Plan. Significant aspects of this plan include, in priority order, an increase in the number of Type A/B computers for student use; significant professional development for all staff members; technology/curriculum integration; increased accessibility for all students; and an expansion to our communication system (i.e., email system).

The Tewksbury Technology Committee will evaluate this plan on a regular basis. The evaluation will consist of two components: review of present progress and revision of long-range goals.

I. Introduction

The Tewksbury Public Schools are located in Tewksbury, Massachusetts; a small suburban community located approximately 30 miles from Boston. Approximately forty-eight hundred students attend our five elementary schools, one middle school and one high school. In 1972, the school system witnessed the formation of the first Tewksbury Technology Curriculum Committee. This committee was responsible for developing a system-wide technology curriculum.

Our Technology Committee still exists, although the members have changed over the years. The committee is comprised of representatives from the Tewksbury Public Schools and representatives from each of Tewksbury schools and members of the community. The committee also has school administrators, teachers, the business manager, the network manager, and the assistant superintendent.

In the beginning stages of developing the new five-year Technology Plan, members were given the existing plan to review and discuss. It was clear that the task(s) for the upcoming meetings must focus on revision and/or creation of new components. Together, the committee agreed to focus on the six recommended benchmarks identified by the State. From this work the following goals were created:

<p>Benchmark 1a: <i>Commitment to Clear Vision and Mission Statement</i></p>	<p><i>Modern technology will be used to challenge, prepare, and raise expectations for the students of the Tewksbury Public Schools to insure that each student will become a productive member of society with a commitment to life-long learning.</i></p>
<p>Benchmark 1b: <i>Tewksbury Technology Teams</i></p>	<p><u><i>Tewksbury Technology SARC</i></u> <i>An advisory committee consisting of PreK – 12 staff members whose sole responsibility is to review, revise, and develop grade level curriculum. All grade level curricula must align with the MA Recommended PreK – 12 Instructional Technology Standards. This SARC meets on an as-needed basis.</i></p> <p><u><i>Tewksbury Technology Committee</i></u> <i>An advisory committee made up of administrators, Network Manager, instructional technology specialists, business manager, teachers and parents. This committee's sole purpose is to develop the vision, mission, budgetary resources, professional development, and evaluation process of the technology program for the Tewksbury Public Schools. It is the role of this group to articulate a strategy for maintaining a high-quality technology program for the TPS.</i></p> <p><u><i>Tewksbury Professional Development Technology Team</i></u> <i>This advisory team consists of TPS Instructional Technology staff members. Their primary goal is to gather information from staff through surveys and both formal and informal conversation. This information will be used to develop and prepare an annual listing of professional development offerings. These workshops/seminars can range in instructional time from one-hour to 35 hours per offering.</i></p> <p><u><i>Tewksbury Technology Steering Committee</i></u> <i>A sub-committee of the Technology Committee, this group is made up of administrators whose role it is to deal with the daily on-going operation of technology. This committee will identify areas of concern within the current technology community and works to resolve these issues. Ad hoc members may be added to supplement expertise when required.</i></p>
<p>Benchmark 1c: <i>Budget</i></p>	<p><i>TPS continues to commit monies for the purchasing, maintenance, and expansion of our technology resources. When viewing our mandated Technology Plan data, submitted to the MA DOE annually, the</i></p>

<i>(Operational budget, staffing, federal, state, and private resources)</i>	<i>data emphasizes the importance placed on the use of technology in our schools:</i>
Benchmark 1d: Evaluation <i>The district evaluates the effectiveness of technology resources / monitoring of progress towards the stated goals</i>	<i>The Tewksbury Technology Teams will evaluate all aspects of our Technology Plan annually. Staff and administrator surveys, expended budgetary resource information, and year-to-year comparisons (i.e., increase/decrease in professional development offerings) will be monitored for progress.</i>
Benchmark 2: <i>Technology Integration</i> <i>Interactive Whiteboards</i> <i>Classroom Response System (data collection)</i>	<i>As outlined in our new five-year strategic plan, we believe that technology is an integrated tool to promote and extend student learning on a daily basis. The goal is to continue to find new ways to use technology -- and to help students use it – that doesn't take time away from core subjects.</i> <i>The changing role in educational technology is a continuing discussion. Technology is no longer a separate curriculum area but rather a tool to be used in all curricula areas which follow the guidelines of Massachusetts Educational Reform and the Curriculum Frameworks.</i> <i>The infiltration of interactive whiteboard technology has impacted the way in which many of our educators deliver instruction. We are hopeful that our district will continue to embrace this technology and dedicate monies to the purchase of additional boards.</i> <i>Computers are a central component of the classroom environment, linking classrooms to other classrooms, home, community, and globally. The utilization of web-based software will be expanded to support and enrich the core content area of mathematics.</i>
Benchmark 3: <i>Technology Professional Development</i>	<i>In order to ascertain the levels of "technological comfort," a survey will be distributed to all members of the Tewksbury Public School community. Based on the results, our Tewksbury Professional Development Technology Team continues to develop and coordinate a comprehensive training program to address the needs of our staff.</i> <i>Mentoring programs, where teachers help other teachers will be organized.</i>
Benchmark 4: <i>Accessibility of Technology</i>	<i>All students will have equal access to appropriate technology tools. Access will be available before, during, and after school hours.</i>
Benchmark 5: <i>Infrastructure of Connectivity</i>	<i>Infrastructure includes: maintenance, hardware, and the network. Maintenance is system support. It is crucial that there be sufficient system maintenance and timely upgrades as part of this plan. Hardware includes student, teacher, administrator, and multipurpose workstations. The network links all computers in Tewksbury to software file servers, other workstations throughout the district, and to the Intranet and World Wide Web, enabling local and global communications.</i> <i>Sufficient resources will be identified to maintain and expand the district infrastructure. Appropriate support for school-based infrastructures will be established and a level of service that will ensure the regular maintenance of all equipment will be determined.</i>
Benchmark 6 a: <i>Access to the Internet outside of the School Day</i>	<i>Access is available through extended day, after school, challenge programs, extra-help, clubs, and other extra-curricula programs in accordance with the Acceptable Use Policy.</i>

Benchmark 6 b: <i>Access</i> <i>By the year 2003, every district will have achieved at least a 5:1 student to computer ratio of modern, fully functioning, Internet enabled computers and devices.</i>	Chart 1		
	<i>NOTE: While all schools have computers, there is a higher concentration of Type A/B computers at the secondary level. Computer equity is one of the components of this technology plan. Below please find numbers to support this objective:</i>		
2006/2007 (Data submitted to DOE for SY06-07)			
	School	* Computers	Students
	Loella F. Dewing	55	625
	Heath Brook	43	473
	North Street	50	363
	Louise Davy Trahan	44	397
	John F. Ryan	204	766
	John Wynn Middle School	265	816
	Tewksbury Memorial High School	377	1179
	Ratio	1	5.82
<i>Currently, Tewksbury Public Schools has a student to computer ratio of 5.82. (If the calculation were to include all computers, not just Type A/B computers, our ratio would be 3.48. All calculations provided by the DOE.)</i>			
<i>* Please refer to the Massachusetts Department of Education for specifications regarding classifying Type A/B/C computers.</i>			

II. Vision Statement:

TPS staffs are asked to integrate technology into their instruction on a regular basis. Teachers and students will draw on electronic and print resources around the world to locate and retrieve relevant data and information to support their activities.

The Internet enables students to access, evaluate, synthesize, and integrate a vast range of data, and to communicate with others all over the world. An interactive learning environment will be created through ongoing technological growth, access and training. Through this medium, students can join the global classroom. They can go beyond finding information. Students will be able to validate their data and present their findings in new and creative ways.

Our role as an educational institution is to support and guide students and teachers as they learn these new technological applications and skills.

A major obstacle to technology/curriculum integration is an insufficient supply of equipment as indicated by the MA DOE. Our present level of equipment continues to hinder technology integration across grade levels. With the expansion of our Email system, teachers will enhance their ability to communicate and share information with students and other teachers. Through this communication, teachers will make effective use of technology and, in the process, substantially change their roles and pedagogical strategies.

In addition, we envision that technology integration throughout the Tewksbury Public Schools will help students and staffs become active, self-directed, life-long learners. Viewed as a productivity tool, not an end in itself, we believe that technology will be an integral part of the way students, teachers and administrators work, teach and learn. Actively and ethically approaching these innovations will enable members of our school community to become responsible contributors in the global community.

III. Tewksbury Professional Development:

Staff development requires ongoing teacher support and technical assistance. We provide our staff with ready access to facilities, directed training sessions and collaborative support. Our staff development sessions will continue to emphasize available equipment, will begin as new equipment is installed, will address professional as well as student learning needs, and will be evaluated to regularly ensure that it is effectively supporting our curriculum.

A system-wide professional development technology team will coordinate training and support. A schedule of after-school workshops, in-service training sessions, and summer training sessions will be developed stressing newly acquired hardware, software, and current trends in curriculum integration. Other technological training and educational opportunities available on-line or in the surrounding area should also be included on the calendar.

Each elementary school has a computer aide, an Appendix B position, who handles the daily computer concerns, trouble-shooting, and basic computer needs of each school. In addition, we have two full-time Technology Aides and a system-wide K-4 Instructional Technology Specialist. Each Technology Aide services two elementary schools.

Our upper elementary school has two full-time Instructional Technology Specialists responsible for the implementation of our Grade 5/6 technology curriculum. These two individuals service the whole school population. Over the course of two (2) years, all upper elementary school students receive an enhanced technology curriculum.

Our middle school has three (3) full time computer specialists responsible for the implementation of our Grade 7/8 technology curriculum. These individuals service the whole school population. Over the course of two (2) years, all middle school students receive an enhanced technology curriculum. There is also a computer aide, Appendix B position, who handles the daily computer concerns, trouble-shooting, and basic computer needs of each school.

The high school has four (4) staff members that provide computer instruction. The high school curriculum presently consists of Desktop Publishing, Research and Report Prep, Web Design & e-Commerce, Visual Basic Programming, C++ Programming, Computer Applications 1 & 2, Engineering & Design Tech 1, 2, & 3.

The level of technology infusion in the curriculum could be classified as moderate. We have begun to witness the staff using computer technology which moves beyond the simplicity of word processing. Appropriate software applications are now being used for instructional purposes, rather than enrichment activities. Additionally, numerous teachers are using computers to generate classroom materials, classroom webpages, webquests, and PowerPoint presentations. Many teachers are integrating the use of interactive whiteboards to enhance their curriculum and instruction. However, the challenge still remains - to increase the level of technology infusion in the curriculum.

IV. TEWKSBURY FIVE-YEAR TECHNOLOGY GOALS

Goal #1 To provide significant professional development to all instructional, administrative, secretarial, and school nurse personnel

Goal #2 To develop a TPS Instructional Technology adoption process (hardware, software, peripherals)

Goal #3 To extend the vision for the budgetary component of our 5-year Technology Plan

Goal #4 To compose our new TPS Technology Plan (2009 – 2013)

Goal # 1 targets and provides all the necessary training necessary to make all employees more efficient in their use of technology. As new software becomes available, professional development support will be offered to all appropriate staff members.

Goal # 2 addresses the necessity to heighten the awareness of TPS staff to abide by a process prior to the purchase and/or expansion of new technologies.

The targeted goals (# 3 & 4) have been identified as the priorities of our work. These goals will help to focus our work and be responsive to all aspects of technology across our district.

V. TECHNOLOGY DESIGN

In order to accomplish the educational goals of the Tewksbury Technology Plan, significant expenditures will be needed for hardware, networking, software, maintenance, professional development and staffing. The complete five-year plan will include the technological components needed to provide equitable student access throughout the system, to research data and collected data, and to communicate this data effectively. Teachers will be trained to use computers wisely and extensively.

The Technology Committee has identified five stages to phase in this ambitious plan. In the first phase, Year One.

Year One Budget - FY 08 - 09

Capital Funds for capital expenses, Year One, are included in our proposed Warrant Article – Submission date May, 08

Hardware, Furniture	
* 175 Type A computers (as outlined by the DOE) - Replacement	140,000
* 19 Interactive Whiteboards w/LCDs, cables, and Installation	60,800
Category Total	200,800
Software	
* Instructional, reference software licenses, various sites	8,000
Category Total	8,000
Personnel	
* Additional Contract work	30,000
* Network Analyst (Annual Audit)	4,000
* 1 Repair Technician	40,000
Category Total	74,000
Maintenance, Upgrades	
* Maintenance, Email Archiving	3,000
* Anti-virus / Anti-malware	10,000
Total Budgeted for Year One – Part A	295,800

Operating - (Annual) - Funds to support these programs are included in the FY 08-09 Proposed School Budget

Professional Development	
* Extensive Professional Development for Faculty and all TPS Staff, 300 @ \$100/person	30,000
Annual Operating Total – Part B	30,000
Total Budget – Parts A & B	325,800

Year Two Budget - FY 09 - 10

Capital Funds for capital expenses, Year One, are included in our proposed Warrant Article – Submission date May, 09

Hardware, Furniture	
* 270 Type A computers (as outlined by the DOE) - Replacement	216,000
* 19 Interactive Whiteboards w/LCDs, cables, and Installation	60,800
* 120 Data Response Remotes (i.e., Quizdom) – Formative Assessment	14,000
Category Total	290,800
Software	
* Instructional, reference software licenses, various sites	8,000
Category Total	8,000
Personnel	
* Additional Contract work	30,000
* Network Analyst (Annual Audit)	4,000
* 1 Consultant (SMS) – Central Console	5,000
Category Total	39,000
Maintenance, Upgrades	

* Maintenance	3,000
* Anti-virus / Anti-malware	10,000
Total Budgeted for Year One – Part A	350,800

Operating - (Annual) - Funds to support these programs are included in the FY 09-10 Proposed School Budget

Professional Development	
* Extensive Professional Development for Faculty and all TPS Staff, 300 @ \$100/person	30,000
Annual Operating Total – Part B	30,000
Total Budget – Parts A & B	380,800

**Year Three Budget - FY 10 - 11
Capital Funds for capital expenses, Year One, are included in our proposed Warrant Article – Submission date May, 10**

Hardware, Furniture	
* 270 Type A computers (as outlined by the DOE) - Replacement	216,000
* 19 Interactive Whiteboards w/LCDs, cables, and Installation	60,800
* 120 Data Response Remotes – Formative Assessment	14,000
Category Total	290,800
Software	
* Instructional, reference software licenses, various sites	8,000
Category Total	8,000
Personnel	
* Additional Contract work	30,000
* Network Analyst (Annual Audit)	4,000
* 1 Consultant (SMS) – Central Console	5,000
Category Total	39,000
Maintenance, Upgrades	
* Maintenance	3,000
* Anti-virus / Anti-malware	10,000
Total Budgeted for Year One – Part A	350,800

Operating - (Annual) - Funds to support these programs are included in the FY10- 11 Proposed School Budget

Professional Development	
* Extensive Professional Development for Faculty and all TPS Staff, 300 @ \$100/person	30,000
Annual Operating Total – Part B	30,000
Total Budget – Parts A & B	380,800

Budget - Narrative Explanation

Software

In order to fully meet the Technology Plan initiatives, appropriate software decisions must be made at several levels. For example, additional instructional and communication software must be procured. This would include, for instance, software that would allow our staff to produce personalized classroom webpages. Upgrades to software may also be needed (i.e., multi-media software for our elementary students and research based software for our upper grades). *Funds for basic instructional software procurement are factored into the cost of each new computer purchased in accordance with this plan.*

Maintenance / Upgrades

Our plan includes a proposed replacement procedure. The district plans to replace computers every five (5) years. Realistically, we keep and use computers 6 to 7 years but our goal is to keep labs to the five (5) year cycle and move computers from the labs to the classrooms. We will continue to advocate for local funds, seek grants, and accept quality donations that meet the Department of Education guidelines in order to reach our replacement cycle goal.

Professional Development

The success of our plan is tied to the success of our training program. As mentioned earlier, teacher surveys will clearly define the needs of our staff. We have allotted approximately \$100 per staff member over the span of this plan. With this money, teachers will be supported in three crucial areas of training: 1) establish the vision or the potential power of technology, 2) provide training relevant to teacher needs and wants, and 3) individual mentoring and electronic support.

VI: MONITORING, EVALUATING, AND REVISING THE PLAN

Evaluation will be built into the planning cycle and not be an after thought. Evaluations will be performed at varying points in the planning cycle. The duration, detail and type of evaluation will depend on the benchmark being evaluated and the subsequent decisions that will be made which interact with that step.

Because education and technology continue to redefine themselves and each other, our Technology Plan must stay flexible, adjust to change and allow multiple options for action. Regular inspection of system functions and users' levels of satisfaction is necessary in order to determine developing problems or weakness. Periodic investigation of new technology will provide material for upgrade decisions.

The Tewksbury Technology Teams will use surveys, interviews, and observations to semi-annually evaluate the Five Year Technology Plan. Based on the semi-annual evaluation, the Tewksbury Technology Teams will make recommendations for change and inform all stakeholder groups of those changes. This will allow us to keep the plan current and the technological growth in the Tewksbury Public School System focused on appropriate use. This will also allow for the flexibility and adaptation in an ever-changing technological field.

Results of the survey and all other technology information that is pertinent to the evaluation process will be disseminated to the stakeholders for questions, review, and recommendations. The Tewksbury Technology Teams will prepare a formal detailed list of recommendations including necessary changes to be implemented and the associated cost on an annual basis.

The Tewksbury Technology Teams' process and timeline for ongoing, long-term planning will be through quarterly committee meetings. Subcommittee reports and input from stakeholders will be the focus of these meetings. The information and recommendations that are gathered at these meetings will be used as the basis for ongoing, continuous improvement, and long-term planning.