

**Literacy21: Education in a Changing World
2010-2015**

LITERACY21 VISION and GOALS

Teaching and learning with new and emerging technologies will ensure that our graduates are prepared to be successful in the 21st century. Our technology plans in Watertown Public Schools are to build the foundation on which the school system can accomplish its vision and goals.

WPS Vision: *The Watertown Public Schools promote high achievement through inquiry, problem solving, collaboration, creativity and hard work. We provide students with a robust education so they will acquire, apply, and practice the knowledge and skills needed for self-actualization and life-long learning. All programs support diverse learning styles, civic interaction, global awareness, and personal success.*

WPS Strategic Goals:

- *Support High Academic Achievement*
The Watertown Public Schools will ensure that each student becomes an accomplished learner in the arts, humanities, mathematics, physical sciences and social sciences. The school system will provide all students with a learning environment that sets high expectations and stimulates thinking, problem-solving, inquiry, creativity, and hard work.
- *Foster Self Actualization*
The Watertown Public Schools will ensure that each student develops a capacity for life-long learning through comprehensive skill development, exposure to a broad universe of knowledge and disciplines, and support for a diversity of learning styles, future plans, and personal interests.
- *Promote Global and Local Citizenship*
The Watertown Public Schools will ensure that each student becomes informed about and participates in local and world affairs. Students will strive to understand people of different backgrounds and cultures and the interconnectedness of the contemporary world.

New and emerging technologies can enable innovative education and an excellent educational environment for all students. Our Literacy21 Plan is driven by four key concepts that are changing and improving teaching and learning:

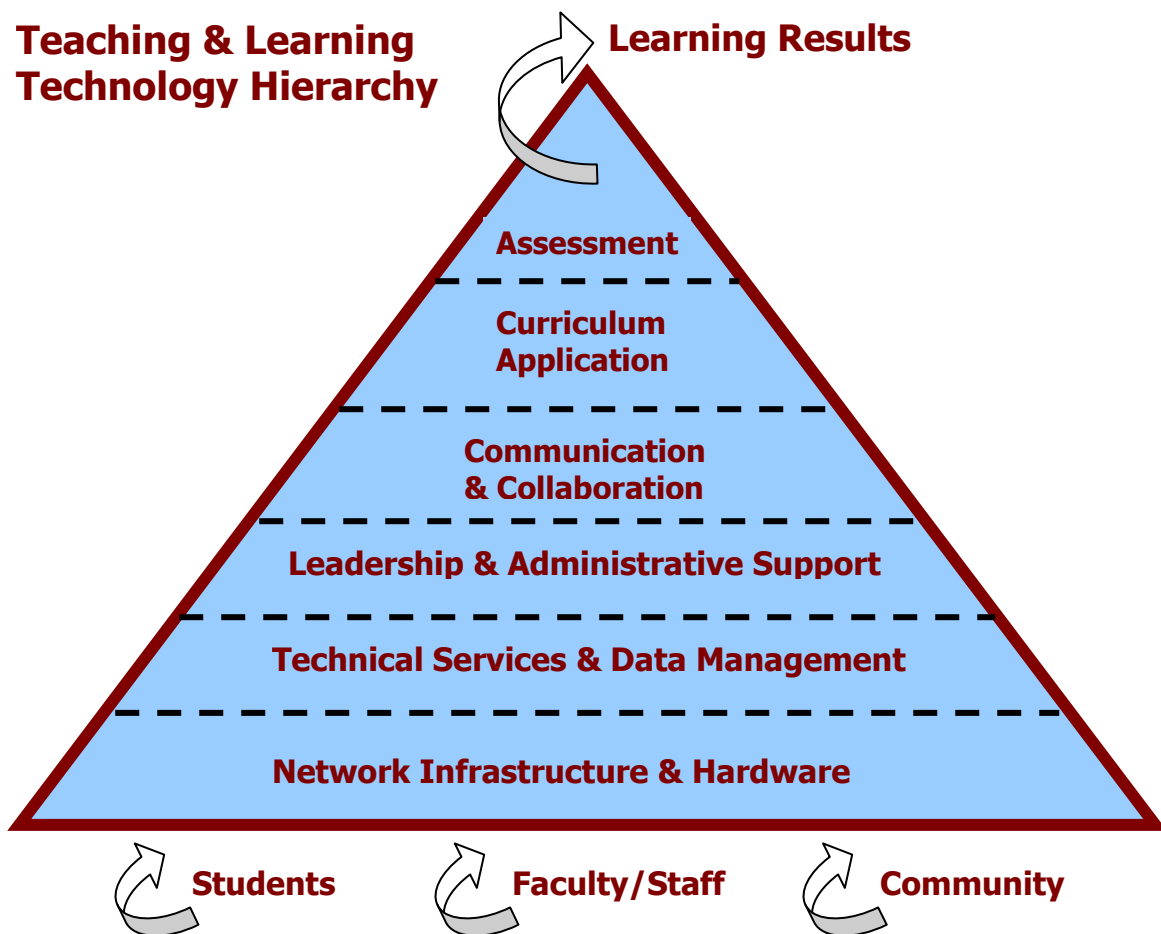
- The Internet is the invention.
- Students are creators and contributors.
- Teachers and students have a globalized curriculum where students talk with each other world-wide, and teachers share and learn from colleagues anywhere.
- Educators need professional community to think together and change and improve practice.

STRATEGIES

Technology is the foundation on which we are creating a more effective and rich educational environment. Literacy21 sets the stage for how technology is continuing to help improve teaching and learning. These are the educational strategies we focus on to improve learning results:

- Instructional Practices: A variety of multi-media, instructional practices meet the range of student learning styles and nurture creativity.
- Assessment: Assessment of student work, beyond standardized test scores, so that it is ongoing, timely, and formative, informs instructional practice and program planning.
- Curricular Resources: Ubiquitous access to digital curricular resources and collaborative environments affords enriching and timely content.
- Professional Development: Ongoing, embedded, and collaborative professional development affords more opportunity for learning about and sharing best practices.
- Communication: Online communication provides opportunity for better communication with parents and the community (both local and global).

Litearcy21 2010-2015 addresses each component of the WPS Teaching & Learning Technology Hierarchy.



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The Network Infrastructure and Hardware, and the Technical Services and Data Management components are the foundation for this hierarchy of teaching and learning. They support the Teaching and Learning initiatives: Leadership and Administrative Support, Communication and Collaboration, Curriculum Applications, and Assessment.

The Literacy21 2010-2015 plan is a continuation of the previous four years, where the emphasis in particular has been and will continue to be:

- 1) 1x1 access to technology and digital resources for students and faculty/staff
- 2) professional development for curriculum and technology integration for teachers and administrators

Continuing to invest in robust access to digital tools and curricular resources along with strengthening educator development will ensure the efficacy and success of current projects and those on the horizon. Digital tools typically include:

NETWORK INFRASTRUCTURE AND HARDWARE TECHNICAL SERVICES AND DATA MANAGEMENT	
District-Wide	
<p>Accomplishments 2005-2009 and ongoing</p> <ul style="list-style-type: none"> • Laptop carts for students • Laptops for teachers • Projection devices in classrooms • Other peripherals • Server upgrades • Network upgrades (wireless) <p>Underway</p> <ul style="list-style-type: none"> • “Cloud Computing” – 1X1 Access • Improved wireless • Server and Network upgrades • Laptop/Netbook carts for students • Projection devices in classrooms • Student Information System • Data (Assessment) Information System • School and Town planning • Various handheld devices and peripherals 	<p>On the Horizon...and beyond</p> <ul style="list-style-type: none"> • First Class upgrade • Online Course content management system • Technical Services office relocation • Staffing reallocation and expansion • Laptop/netbook cart, and peripheral, expansion for students • School and Town coordination • Auditorium multimedia system upgrades • Teacher laptops, administrative computers, student laptops, repair and maintenance • Repair, maintenance, and sustainability of existing infrastructure • Server and network upgrades • Phone System

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TEACHING & LEARNING	
District-Wide	
<p>Underway</p> <ul style="list-style-type: none"> ▪ Classroom Sites (TeacherWeb) ▪ Curriculum Mapping in Google ▪ Technology-In-Practice professional development (T-I-P) ▪ ThinkFinity ▪ MyLearningPlan ▪ Assessment/Data professional development ▪ Fit, Fun, for Life - Physical Education Program (PEP) ▪ Learning Commons plan ▪ Teacher Supervision & Evaluation process and tools renovation to include 21st Century learning 	<p>On the Horizon</p> <ul style="list-style-type: none"> ▪ K-12 Measures of Academic Progress (MAP) ▪ Bolstering the Arts ▪ K-12 World Language ▪ Learning Commons ▪ Assistive Technology – Universal Design for Learning plan
High School	
<p>Underway</p> <ul style="list-style-type: none"> ▪ Engineering by Design course ▪ FIRST Robotics ▪ Interactive Journalism course ▪ ArMedia course ▪ Virtual High School ▪ Foreign Language renovation ▪ 6-12 Curriculum Coordination (Math, Science, English, Social Studies) ▪ Naviance ▪ Measures of Academic Progress for EPP students 	<p>On the Horizon</p> <ul style="list-style-type: none"> ▪ Newspaper renovation ▪ Web 2.0 course ▪ Media Studio expansion ▪ Bio-Medical Science course ▪ Measures of Academic Progress expanded to 9, 10, 11 grade ▪ Online (hybrid) course content management system
Middle School	
<p>Underway</p> <ul style="list-style-type: none"> ▪ Online student newspaper ▪ Curriculum renovation ▪ Language! Pilot for Language-based classes ▪ 6-12 Curriculum Coordination (Math, Science, English, Social Studies) ▪ Virtual Science Assessments ▪ Robotics/Engineering enrichment 	<p>On the Horizon</p> <ul style="list-style-type: none"> ▪ Media Studio ▪ Measures of Academic Progress ▪ Language! expanded

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Elementary Schools	
Underway <ul style="list-style-type: none"> ▪ MAP ▪ World Language planning ▪ Online Newspapers ▪ Reading Curriculum renovation ▪ Writing Curriculum renovation ▪ Adaptive PE ▪ FableVision Live-Wire project ▪ Educational Technology Teacher role definition 	On the Horizon <ul style="list-style-type: none"> • Science Curriculum renovation • Social Studies Curriculum renovation • World Language Curriculum development • SugarLabs

CURRICULAR DIGITAL RESOURCES

Curricular digital resources include, but are not limited to: digital media authoring tools, graphics programs, probeware with GPS systems, publishing software, media production software, advanced web design software, communication and collaboration management systems.

To implement these projects, we use the following digital resources and online applications:

District Productivity Resources	Description
Barracuda Contribute EASY IEP FirstClass iPass Microsoft Office TeacherWeb	- E-mail filtering system - Web content - IEP creation & management - E-Mail, Conferencing, Calendaring, Collaboration, Voice Mail - Student Information System - Productivity suite of tools - Web content creation and management

Elementary Resources	Description
Alexandria Audacity Blogspot Finale Notepad Glogster Google Docs Google Earth iLifeMdeia creation InfoTrac Issuu.com	- Library - Audio Recording - Web 2.0 - Music Composition - Web 2.0 - Web 2.0 - Virtual Atlas - Media creation - data base - Self Publishing

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Lego Cad	- Cad Lite
Massachusetts Newstand	- data base
Microsoft Office	- productivity
Movie Maker	- video production
Paint.net	- Drawing and Photo Editor
Photo Story 3	- Slideshow
Picassa	- Photos sharing
Polar	- Phys Ed
Scratch	- Programming
Sketch-up	- CAD Lite
Skype	- Global Communication
Teacher's Domain	- Video content data base
TeacherWeb	- Web content management system
Thinkfinity	- Content and lesson data base
Voicethread	- Web 2.0
WikiSpaces	- Web 2.0
World Book Online	- Encyclopedia

Secondary Resources	Description
Adobe CS3 Suite	- Graphic/web design software suite
Bib me	- Library Resources
Bloom's Criticism	- data base
CQ Researcher	- data base
Culture Grams	- data base
Discovery Streaming	- data base
Easy Bib	- Library Resources
EduBlog	- data base
Final Cut HD	- Video Editing
Gale Virt. Library	- data base
Gizmos	- online simulation
Grolier Online	- data base
Grove Dictionary of Art	- data base
Kurzweil Language!	- Text to speech
Literary Reference Center	- data base
Logic Express	- Composition tool
Noodle Tools	- Library Resources
Reader's Guide Select & Current Issues	- data base
Rosetta Stone	- Language Instruction
SolidWorks	- CAD Software
Student Resource Center	- data base
Turn it In	- Plagerism Detection
Virtual High School	- Online high school
Wilson Biography	- data base

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PROFESSIONAL DEVELOPMENT

The Literacy21 plan is committed to ensuring that all educators receive high quality support to improve instruction and reach their professional potential. Investment in educator development for administrators focuses on strengthening instructional leadership and improving working conditions to better support staff. For teachers the focus is on programs and activities that foster more personalized instruction for each student, including use of new tools and strategies to differentiate instruction and improve communication and collaboration between teachers and parents.

The overarching themes of Watertown Professional Development are: Teacher-to-Teacher Collaboration, Data-Driven Instruction, and Curriculum & Technology Integration. The program includes four main components:

- Department/ Grade Level, (Content-based)
- District/School, (Student-centered)
- Technology-In-Practice, (Pedagogy-focused)
- Other Professional Development Formats

The program incorporates opportunities of varying formats for faculty to participate in: five full-day and two half-day professional days; workshops/seminars, task forces, collaborative action research, curriculum planning, lesson study, department professional development meetings, an Induction and Mentoring program, outside conferences, and graduate courses with tuition reimbursement. We use MyLearningPlan to manage our program and ensure that faculty has access to the opportunities that best suit their needs and professional goals. The entire program is published in a PD Handbook on our Professional Development website

[<http://www.watertown.k12.ma.us/wps/pd/index.html>].

In particular the Literacy21 plan will continue to implement and improve the Technology-In-Practice district-wide and department courses. Every educator is a learner in a T-I-P course, depending on their technology proficiency and interests. Educator proficiency is determined with an online self-assessment (“Watertown Talks Tech”), designed by the Professional Development Council. There are over fifteen courses, ranging from Emergent, to Proficient, to Advanced. For the extra ambitious, there are T-I-P extension opportunities. Each T-I-P course is curricular based and culminates with classroom teaching projects. Projects are typically showcased on teacher classroom websites, and in department, grade level, and faculty meetings. The T-I-P program details are on our T-I-P website [<http://teacherweb.com/MA/WatertownHigh/TIP/ap8.aspx>]

EVALUATION

The Literacy21 plan currently evaluates the use and effectiveness of resources through: faculty and student surveys, curricular services and programs usage reports, student

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performance assessments, and teacher T-I-P projects and various other curriculum and technology curricular projects. The faculty “Watertown Talks Tech” survey is on our T-I-P Professional Development website [<http://www.watertown.k12.ma.us/wps/pd/index.html>]. This spring (2010) we are also designing a student technology proficiency evaluation for Middle school students, and high school students newly arrived to Watertown.

FUNDING OPTIONS AND OPPORTUNITIES

Integrating technology into teaching and learning requires a proactive plan for lasting and effective technology integration. The School Department’s technology allocation for FY08-FY09 and FY09-FY10 was generously supported by \$1m appropriate from the Town of Watertown. The town appropriation enabled the district to accomplish almost all of the network infrastructure and hardware configuration necessary to support the district’s teaching and learning goals. Federal grants (NCLB Title I, Title II, Title III) contributed significantly to professional development and curricular resources. Furthermore, and also very significant, the strong partnership the School district has with Dell Computer helped reach appropriate and high levels of network, computer, and peripheral purchases.

Going forward to complete and sustain the Literacy21 plan the School district needs to allocate an appropriation from its operating budget and continue to seek appropriate grants. Sustainable technology integration will continue to require funding for network infrastructure, hardware, security, and staffing.

TECNOLOGY SPENDING PLAN FY10-FY15

(February 4, 2010 presentation)

- I. Overview: Hardware expenditures by year (real and expected)
- II. History: FY07-FY09
 - Hardware Needs for Students, Teachers, Administrative and Support Staff, Network Infrastructure
 - Staffing level
- III. Future: FY10-FY15
 - Types of Needs
 - FY10
 - FY11
 - FY12
 - FY13
 - FY14 & FY15

2010 TECHNOLOGY INFRASTRUCTURE REPORT: EVALUATION AND RECOMMENDATIONS

(By Craig Brenner, Managed Services Advisors, L.L.C.)