

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

LITERACY21

Literacy21 is predicated on the five main goals of the 2010 National Ed-Tech Plan formally called “Transforming American Education: Learning Powered by Technology.”
<http://www.ed.gov/technology/netp-2010>

- I. Using educational technology to fundamentally change the learning process by making it more engaging and tailored to individual student needs and interests.
- II. Using ed-tech to develop a new generation of assessments.
- III. Connecting teachers with their peers and experts so they are always up-to-date on the resources available to them.
- IV. Building infrastructure that lets schools support access to technology in and out of the classroom.
- V. Harnessing the power of educational technology to increase school district productivity and student achievement.

Teaching and learning with new and emerging technologies will ensure that our graduates are prepared to be successful in the 21st century. Called “*Literacy21: Education in a Changing World*” our technology plan in Watertown Public Schools is to build the foundation on which the school system can accomplish its vision and goals.

DISTRICT VISION and STRATEGIC GOALS

In January 2010 the School Committee voted to adopt an updated vision and strategic goals. http://www.watertown.k12.ma.us/wps/documents/VisionandStrategicGoals_1-1-10.pdf

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

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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 enable innovative education and an excellent educational environment for all students, teachers, and administrators. Technology opens doors to learning. Our Literacy21 Plan is driven by four key ideas that are transforming 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

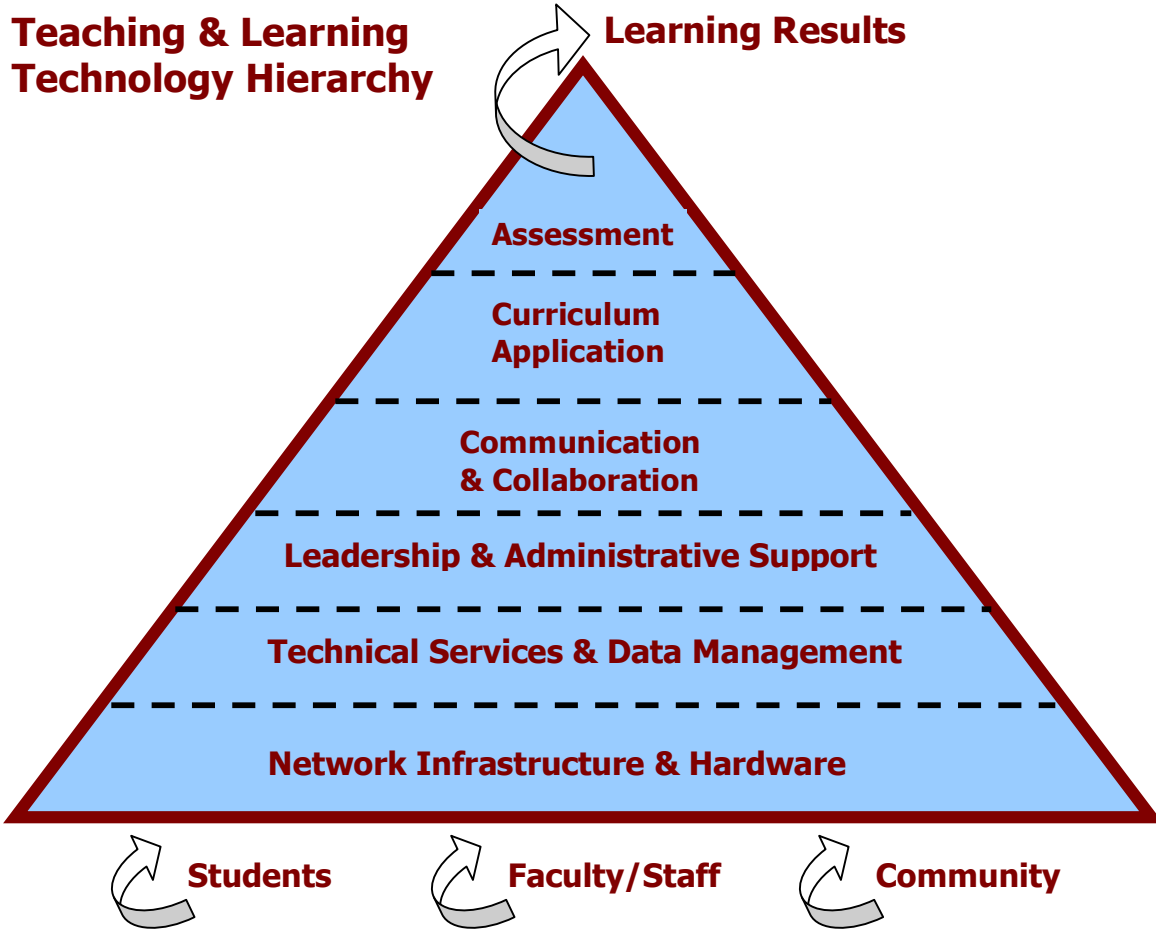
Technology is the foundation on which we are creating a more effective and rich educational environment. Literacy21 sets the stage for how technology is continuing to improve teaching and learning. These are the educational strategies we focus on to improve student learning:

- **Assessment:** Assessment of student work, beyond standardized test scores, so that it is ongoing, timely, and formative, informs instructional practice and curricular planning. Use of online-adaptive, and virtual assessments are in their beginning stages.
- **Curricular Resources and Instructional Practices:** Ubiquitous access to digital curricular resources and collaborative environments affords enriching and timely content that creates a blended (both online and in-person) learning environment. A variety of multi-media, instructional practices meet the range of student learning styles, personalize learning, and nurture creativity.
- **Professional Development:** Ongoing, embedded, and collaborative professional development affords more opportunity for learning about and sharing best practices. Teachers learn in online professional learning communities and participate in webinars and other online professional development seminars and courses.
- **Communication and Collaboration:** Online communication provides opportunity for better communication with parents and the community (both local and global).

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Literacy21 2010-2015 addresses each component of the WPS Teaching & Learning Technology Hierarchy.



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

This 5 year, Literacy21 2010-2015 plan has grown out of a previous technology plan that was supported by the \$1million in funding from the Town over FY09 and FY10.

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DIGITAL TOOLS AND CURRICULAR RESOURCES

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 - Digital tools typically include:

NETWORK INFRASTRUCTURE AND HARDWARE TECHNICAL SERVICES AND DATA MANAGEMENT	
District-Wide	
<p>Accomplishments 2005-2010 and ongoing</p> <ul style="list-style-type: none"> • Laptop carts for students • Laptops for teachers • Projection devices in classrooms • Other peripherals • Technical Services office relocation • • Server upgrades • Network upgrades (wireless) • Auditorium multimedia system upgrades • Laptop/Netbook/iPod carts for students <p>Underway</p> <ul style="list-style-type: none"> • School and Town planning • • Cloud Computing (software as a service) • 1X1 Access • Server and Network upgrades • Projection devices in classrooms • Student Information System • Data (Assessment) Information System • Repair, maintenance, and sustainability of existing infrastructure 	<p>On the Horizon...and beyond</p> <ul style="list-style-type: none"> • First Class upgrade • Learning management system • Staffing reallocation and expansion • Laptop/netbook cart, and peripheral, expansion for students • School and Town coordination • Teacher laptops, administrative computers, student laptops, repair and maintenance • Repair, maintenance, and sustainability of existing infrastructure • Server and network upgrades • Phone System • Various handheld devices and peripherals • Projection Devices (Document Cameras)

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TEACHING & LEARNING	
District-Wide	
<p>Underway/Accomplishments</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 (Lowell, Cunniff, Middle school) ▪ Teacher Supervision & Evaluation process and tools renovation to include 21st Century learning ▪ iRead (iPod Touches) ▪ K-12 Measures of Academic Progress (MAP) ▪ 21st Century and Curriculum Renovation 	<p>On the Horizon</p> <ul style="list-style-type: none"> ▪ Bolstering the Arts ▪ K-12 World Language ▪ Learning Commons (Hosmer and High School) ▪ Assistive Technology – Universal Design for Learning plan ▪ Online and Blended Professional Development ▪ Student Assessment Portfolios ▪ MEPA Online Testing ▪ Credit Recovery/Academic Support Online Resources ▪ Virtual Assessments
High School	
<p>Underway/Accomplishments</p> <ul style="list-style-type: none"> ▪ Engineering by Design course ▪ FIRST Robotics ▪ Journalism and Community Media course ▪ Online Student News ▪ ArMedia course ▪ Medical Science course ▪ Web 2.0 course ▪ Virtual High School ▪ CAD Lab upgrade ▪ 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"> ▪ Foreign Language renovation ▪ Bio-Medical Science course ▪ Measures of Academic Progress expanded ▪ Online (hybrid) course content management system ▪ Learning Commons ▪ Nu Vu (MIT Collaboration)

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Middle School	
<p>Underway/Accomplishments</p> <ul style="list-style-type: none">▪ Online Student News▪ 6 – 12 Curriculum Renovation▪ Language! Pilot for Language-based classes▪ Virtual Science Assessments▪ Robotics/Engineering enrichment▪ Gizmos▪ Expand Measures of Academic Progress▪ Local Community Connections with Social Media▪	<p>On the Horizon</p> <ul style="list-style-type: none">▪ Media Studio▪ Language! Expanded▪ Online and blended Learning▪ Global Connections with Social Media

Elementary Schools	
<p>Underway/Accomplishments</p> <ul style="list-style-type: none">▪ MAP▪ World Language planning▪ Online Student News▪ Reading Curriculum renovation▪ Writing Curriculum renovation▪ Adaptive PE▪ FableVision Live-Wire project▪ Educational Technology Teacher role definition▪ Fasttmath▪ Gizmos▪ MEPA Online Testing	<p>On the Horizon</p> <ul style="list-style-type: none">• Science Curriculum renovation• Social Studies Curriculum renovation• World Language Curriculum development• SugarLabs• Learning Commons with Media Studio

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CURRICULAR 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
Contribute EASY IEP FirstClass iPass Microsoft Office TeacherWeb MyLearningPlan	- Web content - IEP creation & management - E-Mail, Conferencing, Calendaring, Collaboration, Voice Mail - Student Information System - Productivity suite of tools - Web content creation and management - Professional Development management system

Elementary and Secondary Resources	Description
Adobe CS3 Suite Audacity Bib me Blogspot Bloom's Criticism Chief Architect CQ Researcher Culture Grams Discovery Streaming Easy Bib Edmodo EduBlog Fasttmath Final Cut HD Finale Notepad Gale Virt. Library Gizmos Glogster Google Docs Google Earth Grolier Online Grove Dictionary of Art iLife Suite InfoTrac	- Graphic/web design software suite - Audio Recording - Library Resources - Web 2.0 - data base - Computer Aided Design (CAD) - data base - data base - data base - Library Resources - Online Course Management/Social Network - Math Instruction/Assessment - Video Editing - Music Composition - data base - online simulation - Web 2.0 - Web 2.0 - Virtual Atlas - data base - data base - Media creation/Movies/Podcasts/Slideshows - data base

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Issuu.com	- Self Publishing
Kurzweil Language!	- Text to speech
Lego Cad	- Cad Lite
Literary Reference Center	- data base
Logic Express	- Composition tool
Massachusetts Newstand	- data base
Mathematica	- Mathematics
Microsoft Office	- productivity
Movie Maker	- video production
Noodle Tools	- Drawing and Photo Editor
	- Library Resources
Paint.net	- Drawing and Photo Editor
Photo Story 3	- Slideshow
Picassa	- Photos sharing
Polar	- Phys Ed
Reader's Guide Select & Current Issues	- data base
Rosetta Stone	- Language Instruction
Scratch	- Programming
Sketch-up	- CAD Lite
Skype	- Computer Design (CAD)
SolidWorks	- Global Communication
StoryBird	- Self Publishing
Student Resource Center	- data base
StudentTurn it In	- Plagerism Detection
Teacher's Domain	- Video content data base
TeacherWeb	- Web content management system
Thinkfinity	- Content and lesson data base
Virtual High School	- Online high school
Voicethread	- Web 2.0
WikiSpaces	- Web 2.0
Wilson Biography	- data base
World Book Online	- Encyclopedia

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.

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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 & 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. All T-I-P courses are hybrid, meeting both face-to-face and online. We continue to encourage teachers and administrators to take (and teach) online courses.

Educator proficiency using technology to improve teaching and learning 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 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>]. In the near future we are also designing a student technology proficiency evaluation for Middle school students, and high school students newly arrived to Watertown.

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FUNDING OPTIONS AND OPPORTUNITIES

Integrating technology into teaching and learning requires a proactive plan for lasting and effective technology integration and adoption. The School Department's technology allocation for FY08-FY09 and FY09-FY10 was generously supported by \$1m appropriation 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, the strong partnership the School district has had 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 2011 presentation)

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