

## Promising Practices and Implementation Tools

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**3. District(s) Where Implemented: Natick Public Schools**

**4. Lever Addressed and Title of Promising Practice: Professional Development – 1:1 Computer Initiative for Grades 8–12**

**5. How This Practice Reflects District’s Mission and Core Values:**

Natick Public Schools is committed to providing the greatest education possible for every student. The district leadership recognizes the generation we are currently educating is “like no other” before it. The impact of technology on students, “digital natives”, demands that we teach students in different ways, compatible with how we learn differently, through the digital medium. The brain is wired differently and we think, receives and processes information differently. Student output from learning is also different and the district leadership in Natick reflects this thinking in its vision and mission. Based on research on this topic, successful work being done in other districts, and the vast power and potential of technology tools to enhance learning; Natick embarked on a 1:1 Computer Initiative in their effort to address the evolving learning needs and styles of today’s students. (Visit NPS website: HYPERLINK "http://www.natickps.org/districtinfo/forstudents/onetoone.cfm"<http://www.natickps.org/districtinfo/forstudents/onetoone.cfm> for links to research cited) The district visited school systems in New York, Maine, North Carolina and New Hampshire to see 1:1 programs in action to help inform the process of implementation.

**6. Goals of this Practice:**

The goals of the initiative focus on increasing students’ proficiency in

FOUR Twenty First Century skills – **critical thinking, communication, creativity and collaboration**. 80% of Natick High School seniors go on to college and technological literacy is a critical component of being prepared for this. Curriculum content has not changed significantly, but the prioritization of these skills in learning is evident across disciplines.

## **7. Description of this Practice and How it Addresses Criteria for this Level:**

### **Roll out of computers for all students:**

- (a) In the first phases of implementation, parents attended mandatory orientations to learn about the commitment involved, both financially and in terms of safe and appropriate use of the computers. The Grade 8 machines were funded through the Operating Budget and the district, in moving forward, needs to show the community proof of the success and benefits of the program on student learning in order to have buy-in for a Lease-to-Own Program. The current arrangement in terms of funding the hardware is a one-time endeavor, expected to last 5–6 years. District plans to build a new high school coincided with the inception of this project, and funding the 1:1 was included in this building project. Families pay an annual fee of \$75 to cover expenses and repairs. Protection devices against theft are installed and the machines have filters. Parent sign a three-tier contract to cover these. Machines are inspected regularly and carefully maintained. Since the inception of the program, there has been a 7% damage rate, which is considered low, and attributed to the meticulous preventive and preparatory work that was done regarding responsible use and care of the computers. There were a few cases of students' abusing the technology but insignificant given the numbers of students and scope of the work.
- (b) In embarking on this initiative, the district leadership knew the first line of approach needed to be teacher preparation. "Computers can either be a tremendous tool for learning or a \$2,000 pencil", asserts Dr.

Sanchioni, Superintendent of Schools. Making it a powerful tool for learning meant equipping teachers so they were completely prepared to maximize the benefits of digital learning for their students. Five years ago, all teachers involved received laptops, and professional development and training was provided to equip teachers to use laptops as a teaching tool. In the early phases, training, in PLC's, was offered. Teachers learned how to create websites, record homework and grades to increase their comfort and familiarity with the tool. Later training included IWorks, iTunes, iMovie, iPhoto – and other apps for the classroom. Teachers were trained in the basic tools. Later in the process, once all teachers had been trained in the foundations of laptop use, training was discipline and curriculum specific.

(c) At the outset, the Superintendent presented the vision for this initiative to the whole district. Most trainings were then building-based, and phased in by grade level. Natick Public Schools is extremely proud of its “Learning Organization”. Most of the training was done by Natick faculty and staff. Outside consultants were employed to help prepare the district's trainers – the goal was to build internal capacity rather than rely on expertise outside the district for the long term.

(d) Along with learning how to integrate technology into the classroom, teachers worked in their PLC's to construct lessons using the framework of the four Twenty-First Century Skills mentioned above.

(e) The Natick Department of Technology did the hardware training and, over the two-year period of more intensive training, Department Heads helped to select curriculum matches to the technology that could be used.

(f) Natick's evaluation of teachers now includes use of technology as one of the important measures of teacher performance.

**Criteria Addressed within this Practice:**

The 1:1 Computer Initiative addresses components of the Common Core of Professional Knowledge and Skills.

Professional development offerings provide substantive training in pedagogy in the use of technology in the classroom that is sustained and ongoing. This is a direct response to the evolving needs of students as learners in “the digital” age. It is also a response to teachers’ and administrators’ varied experiences and needs. Teachers must be prepared to teach differently to support the different ways in which students are thinking, learning, and showing/communicating what they know.

Professional development takes place in a variety of formats including PLC’s focused on general pedagogy, discipline-based instruction, lesson development and analysis, workshops, courses, and coaching.

The use of technology is a relatively new and important component of the district’s teacher evaluation system.

Teachers and administrators collaboratively plan professional development – both teachers and leaders are part of Natick’s professional “Learning Organization”.

Professional development aligns district-wide and individual school priorities. The Superintendent was clear and public in his commitment to the initiative across the middle and high school levels, resources were planned for and provided, and the needs of the schools and the teachers at each level are continually being communicated and met.

The district is using quantitative and qualitative indicators to assess the impact of Professional Development and the 1:1 Initiative on student achievement. Boston College researchers have been contracted to do this work. Additionally, students and teachers are formally surveyed about the initiative and data is being collected to inform ongoing work in this area at all levels of its implementation.

## **8. Applicable Grade Levels: Grades 8–12**

## **9. How this Practice Changed the District or School:**

Natick attributes the success of this initiative to (1) Strong vision and

commitment on behalf of the leadership to make this work. (2) Bringing and keeping teachers on board which included significant advance preparation and professional development (3) Devoting enough structured time and support – teachers were given training for five years prior to implementation, which included time for learning and reflection. Over a two-year period, all Professional Development was dedicated to this work. The district employed Education Leadership 21 as consultants and some administrators and teachers were sent to their conferences to be trained so they could train internally. (4) Building and using internal capacity and expertise already in the district for sustainability.

Grades 9–12 teachers are in their first year of implementation, and Grade 8 teachers are in their second year. Most teachers involved with the initiative are invested and making good use of the computers in their classroom. They are motivated because of the district's ongoing support and are seeing the positive effects of their work on students. The district continues offering support and training, formally and informally, to sustain the effort. Success depends on continual investment of time and the availability of support for teachers. For example, as part of the full implementation phase in Grades 8–12, the district runs a full Technology Day, once a year. Teachers select from a range of workshop options based on their interests and needs.

A Boston College Research Group was contracted to study the impact of the 1:1 Initiative on student learning. They are looking at test scores, honor roll and other measures of student achievement. The research is in its early phases and what has been reported so far in Grade 8 is: (a) an increase in the number of students on the honor roll (2) higher levels of engagement of students with their work (3) fewer discipline issues and (4) improvement in school attendance.

Natick teachers are surveyed twice a year about the project and this data is being analyzed. Student data collected indicates students feel better organized using computers than they did using paper and pen and they like learning in the hands-on manner afforded them by technology tools. Because the program is still in its early phases, evaluation data is still being gathered and analyzed and a formal report of the data findings and conclusions is planned.

There is a plan to survey parents too but this has not been implemented yet.

#### **10. Resources (time, money, materials) required for Successful Implementation:**

The 1:1 Computer Initiative has consumed Professional Development funds, time and resources for both implementation and ongoing evaluation of the program. Education Leadership 21 was contracted for training and a research group at Boston College was contracted to study the impact of the initiative on student learning. The research group is doing qualitative research and collecting data to use as indicators of the successes and benefits.

**All resources and tools related to the 1:1 Computer Project can be found by visiting the website below:**

HYPERLINK "<http://www.natickps.org/districtinfo/forstudents/onetoone.cfm>" <http://www.natickps.org/districtinfo/forstudents/onetoone.cfm>

Topics covered include:

HYPERLINK "<http://www.safekids.com/2013/05/07/massachusetts-town-invests-in-laptops-to-increase-student-engagement/>" Investment in Laptops to Increase Student Engagement

HYPERLINK "<http://www.metrowestdailynews.com/news/x2082726894/Boston-College-researchers-evaluate-Natick-laptop-program>" Boston College Researchers Evaluate Natick Laptop Program

HYPERLINK "[http://www.natickps.org/Departments/technology/laptopprogram/NatickSchoolBoard4\\_1\\_13bebell.pdf](http://www.natickps.org/Departments/technology/laptopprogram/NatickSchoolBoard4_1_13bebell.pdf)" Presentation of Natick/Boston College Study: 21st Century Teaching & Learning

HYPERLINK "<http://www.bc.edu/content/bc/research/csteep/natick21.html>" Boston College Laptop Study Overview

HYPERLINK "<http://www.natickps.org/Sanchioni%20EdLeader21%20Blog.pdf>" 4Cs, Project Based Learning & Technology

HYPERLINK "<http://www.pbs.org/mediashift/2013/01/4-tips-to-make-a-laptops-in-school-program-succeed009.html>" 4 Tips to Make a Laptops-in-School Program Succeed

HYPERLINK "[http://www.natickps.org/CASTLEBrief01\\_LaptopPrograms.pdf](http://www.natickps.org/CASTLEBrief01_LaptopPrograms.pdf)" What does the research say about School One-to-One Computing Initiatives?