

# Executive Summary: Evaluation Study of the Progress of the North Carolina 1:1 Learning Initiative (Year 1)

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September 8, 2008



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## Executive Summary

The Friday Institute for Educational Innovation at NC State University conducted an evaluation of the first year implementation of the one-to-one (1:1) learning pilot initiative, which involved seven Early College High Schools (ECHS) and one traditional high school with a total across the eight schools of approximately 2000 students and 200 school staff. In these schools, every teacher and student received a laptop computer and wireless Internet access was provided throughout the school. The goal of the initiative is to use the technology to improve teaching practices, increase student achievement, and better prepare students for work, citizenship, and life in the 21<sup>st</sup> century.

A group of comparison schools, similar in type, size, student demographics, and student achievement on the prior year English and Algebra I End-of-Course tests were selected to provide comparative data from schools not implementing 1:1 programs. Many of the comparison schools had a significant amount of technology available for instructional purposes.

This first year evaluation focused on the schools progress toward implementing the 1:1 environment and the barriers, successes, and lessons learned in the early stages of implementation. A combination of teacher and student surveys, focus groups and interviews, classroom observations, and analyses of existing school-level data was used. At the time of this report, the 2007-2008 School Year (SY) End-of-Course test and other student outcome data collected by NCDPI were not yet available.

The implementation of the 1:1 program proceeded on different timelines for the traditional high school and the ECHSs. In the traditional school, the steps required to prepare the teachers, the technology support staff, and the school infrastructure took place prior to the start of the 2007-2008 SY, so students were able to receive their computers in September 2007 and the evaluation considers this the first full year of implementation. The ECHS schools, on the other hand, were first informed of their involvement in the 1:1 pilot in September 2007, so that teachers did not receive laptops until November 2007 and students until March or April 2008. Data about classroom use in these ECHS schools are therefore limited to the last months of the school year.

In the first year these schools appear to have implemented the critical building blocks of an effective 1:1 computing environment. Teachers received professional development in important areas and had time to acclimate to their laptops before students received theirs; school infrastructures, policies, and staff were put into place; parents were informed about the 1:1 initiative and agreed to their responsibilities; students appear to have been relatively well prepared to receive and use their laptops; technology facilitators played an important role in helping teachers integrate these new technologies into the instructional life of the classroom; and students and teachers have begun using the computers in a wide variety of ways to support teaching and learning.

With this progress, many lessons have been learned that can inform future work at the 1:1 pilot schools and other schools that may implement 1:1 environments in the future. The largest overall lesson is that *laying the groundwork for students to receive their laptops takes time*. Preparing teachers to integrate the technology into instruction and preparing all the other essentials for a successful 1:1 initiative (e.g., getting the wireless infrastructure in place, developing the needed policies and preparing for their implementation and enforcement, engaging parents, hiring technology facilitators and technicians, and acquiring the necessary software and hardware to go with the laptops) needs to be done before a school is ready to

distribute student laptops. Teachers and administrators agreed it would be best to plan to distribute student computers at the start of a school year, so the planning and preparation have to begin during the prior school year.

Other key lessons from the year one evaluation include:

- *Ongoing professional development is imperative.* Professional development needs to be continuous and directly meet the needs of teachers as they become more proficient at using the technology to enhance teaching and learning.
- *Defining the appropriate balance between student safety, acceptable use, and access to web-based resources is difficult.* While very complex, it is also important to find ways to meet student safety needs, set acceptable use requirements, and avoid viruses, spyware, and hacking, without overly limiting what teachers and students can access and do with the computers. Models of how to create the right balance are needed.
- *Classroom management strategies and tools require further exploration.* Teachers continue to look for guidance on classroom management in 1:1 classes, but have found that the technology solutions offered to them have limitations and, in some cases, did not function as claimed and were not worth using. Further attention needs to be directed to classroom management strategies and how they can be best supported with technological tools.
- *Skilled Technology Facilitators play a significant role in the success of technology integration into classroom practices.* The important role of onsite technology facilitators to help teachers and students use the technology to improve learning, established in prior research, was once again confirmed.
- *Careful short- and long-term budget planning is important to the success and sustainability of the 1:1 initiative.* Many resources are needed to support the use of the computers, ranging from displays to printers to specialized equipment for science experiments to content-specific software. Budgets need to be planned to include these resources and their immediate upkeep and support, as well as long-term costs of replacing hardware and supplies (e.g., expensive projector bulbs, ongoing software licenses, replacement of obsolete, damaged laptops).
- *Attending to the details makes all the difference.* Having ways to plug-in computers and charge batteries, make printer supplies available, establish email class lists for teachers, backup teacher and student machines, respond promptly to technical problems, and address the many other day-to-day needs of making the use of 1:1 laptops go smoothly in classrooms is essential for successful use of the technology to improve student learning.
- *Broad-based engagement of key stakeholders can facilitate sustainability of the 1:1 initiative.* It is important for schools to engage representatives from the school, district, college partners, business partners, and the community to help inform planning; guide decision-making; provide support to the students, teachers, staff and administrators; and support the sustainability of the 1:1 initiative.