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## Reaching Digital Learners through Laptop Initiatives

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The Friday Institute for Educational Innovation,  
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## Goal of the NC1:1 LTI Initiative

- 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.

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## NC1:1 LTI Project Description

- Every teacher and student received a laptop computer, and wireless Internet access was provided throughout the school.
- 18 1:1 pilot high schools (8 early college, 10 traditional).
- Approximately 9,500 students and 600 school staff.

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## Evaluation Timeline

Year One: Process Evaluation (1)      Year Two: Effects on Classroom and School (2)      Year Three: Outcomes (3)

Throughout the School Year: FI Evaluation Team works with the school's Technology Facilitator to collect data

Internal Professional Development      Teacher/Student Technology Use      Infrastructure

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## Map of 1:1 Pilot High Schools in NC

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## Critical Issues

- Student Learning Outcomes
- Technology Use for Instruction
- Leadership
- Infrastructure
- Special Needs
- English Language Learners

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### A Sample of Student Learning Outcomes

- 10-20% of students self-reported participating in an online course.
- Students agreed that the more teachers used technology in class, the more they are interested in and enjoy school.
- Students used technology at least weekly to complete tasks related to 21<sup>st</sup> century skills.
- Significant increases over time with respect to the proportion of students who reach Level III or Level IV on End-of-Course tests (based on data from Year 2 Evaluation).

### A Sample of Instructional Outcomes

- Frequency of technology use in class leveled out over time
- Students reported using laptops most frequently in English, Science, and Social Studies courses.
- Increased communication between school teachers, staff, administrators, and students and parents.

### A Sample of Instructional Outcomes

- Participating schools were only using a handful of the thousands of free Web 2.0 applications available.
- Technology helped teachers embed ongoing assessments into instruction to monitor student learning and adjust instruction effectively and efficiently.
- Teachers moved from assigning independent work to collaborative, project-based lessons.

### Future-Ready Student Outcomes

Students built life and career skills, such as self-direction, social skills, and responsibility.

Examples:

- "No Excuses" mentality: "Mainly it's a tool to help yourself; you're encouraged to work better and harder because you have the computer... and you can do what you need to when you need to."
- Technology Exposure: "We're exposed to technology that you're likely to use later, such as PowerPoint presentations for a meeting... a lot of workplaces now require you to know how to type, and if you don't know how, it's like not knowing how to read" (Corn, 2009, p. 78)

### Future-Ready Student Outcomes

Students built learning and innovation skills like creativity, critical thinking, and problem-solving

- Individual learning → Group learning (enhanced collaboration - group projects, discussion boards, and wikis)
- Multiple modes of writing (digital magazines, class blogs, and newsletters)
- Authentic learning (virtual field trips, online exchanges with guess speakers)

### Future-Ready Student Outcomes

Students built information, media, and technology skills

- Bridging the digital divide – all students having access to resources
- Accessing digital resources – online resources, electronic textbooks
- Improving technology skills - typing, file management, computer skills

### Sample of Standards and Assessments Outcomes

- Multiple methods of assessment – PowerPoint slide shows, movies, charts, graphs.  
[mismatch between those innovative methods and traditional assessment]
- More accessibility to electronic testing (e.g. ExamView) - particularly useful for students with special needs

### Sample of Learning Environment Outcomes

- Teachers reported improvements on student attendance and discipline.
- Students, teachers, and administrators reported students were more engaged and on-task.
- Evaluators observed high levels of sustained behavioral involvement, positive emotional tone, and exertion of effort and concentration.
- Student reported they enjoyed school more.
- Increase in online class enrollment in second year of implementation.

### Too much technology?

#### Some concerns Raised by Teachers

- Loss of basic skills like handwriting and math knowledge
- Dependence on technology to solve science problems
- Decreased academic achievement during first year of learning
- Distraction during class (particularly for special needs students)
- Overuse of similar assignments (e.g., multiple PowerPoint presentations)

### Conclusions

- Teaching practices and student learning are changing rapidly
  - More communication and collaboration
  - Assessment methods more diversified
  - Increased accessibility
  - Increased engagement
  - Transformed learning environment
  - Continuous professional development necessary

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