Leveraging Laptops:
Effective Models for Enhancing Student Achievement

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EXECUTIVE SUMMARY

The purpose of the *Leveraging Laptops* program was to develop effective models for enhancing student achievement through the integration of laptop computer tools for teaching and learning in the classroom. The program and the research involved 440 teachers across subject areas in 47 K-12 schools in 11 districts. It is estimated that the program directly reached over 20,000 students during the project period. Data on the program's impacts were collected using classroom observations twice during the year in each school, student achievement results from over 40 classrooms, a survey of the teachers, and interviews with district project coordinator.

The findings indicate that positive changes in teaching practices and student learning were realized as a result of the infusion of professional development, support, and access to classroom technology. In numerous cases the results of Florida's *Leveraging Laptops* evaluation far exceeded national norms in terms of the types and amount of student-centered teaching practices observed. Evaluation results demonstrate that *Leveraging Laptops* funding has served as a catalyst for positive changes related to both teaching practices and student achievement in the 11 participating districts.

- Instructional practices shifted from traditional teaching strategies to ones that are student-centered and engage learners in meaningful use of computers to enhance learning.
  - Significant increases were observed related to the following student-centered strategies:
    - Student attention, interest and engagement
    - Project-based learning
    - Teachers acting as facilitators and coaches
    - Cooperative/collaborative learning
    - Independent inquiry/research
    - Academically focused class time
    - Computers used as a learning tool
    - Using computers to support critical thinking skills
  - Significant decreases were observed related to teacher-centered, traditional practices:
    - Independent seatwork
    - Direct instruction
    - Computers used as a delivery tool
    - Using the computer to support lower-level thinking
- 78% of teachers completing classroom inquiry investigations documented changes in student achievement including test scores, higher level thinking skills, retention, and transfer of learning.
- Nearly 60% of the inquiry teachers documented an increase in conditions that support learning: enjoyment, motivation, engagement, on-task behavior, and positive school experience.

- Students developed 21st Century Skills such as collaboration, computer skills, workforce skills, abilities as producers, communication skills, leadership abilities, innovation and creativity.

Recommendations for Policy, Practice, and Research

For the Florida Department of Education and state policymakers:

- The changes observed as a result of the 2006-2007 EETT funding to eleven small, medium, and large districts are possible in classrooms across Florida. State budgets that are constructed to support the expansion of such initiatives statewide beyond the scope of single-year projects will result in educational experiences designed to prepare students for continued education and for the global workforce of coming decades.
- Instructional materials policies should be revised to include technology-related materials that support innovative districts in ensuring that appropriate technology is available to students, in particular students who do not have access to these resources outside of school.
- Systematic educator professional development such as the experiences provided through the Florida Digital Educator program should receive continued support.
- Broad-scale research efforts into the real effects of innovations in classrooms such as this research should continue and should be structured to facilitate longitudinal data aggregation. Such coordinated efforts will magnify the benefits of both funding to districts and the research data across the state.

For teachers, administrators, and school district staff:

- Based on the significant changes in teaching practices and student performance that occurred in the spring of the project year, it is reasonable for educators to have high expectations for teaching and learning with the infusion of professional development, support, and technology. Each of those three elements is necessary and must be integrated together in ways that work toward achieving school, district and state goals.
- The first year of a major change in teaching is a year for learning by teachers, administrators, and students, and it is likely that, given sustained professional development and support, the changes observed in classrooms will continue and probably magnify as teachers refine their practices and students acquire and apply technology and information skills to their academic work.
- The types of twenty-first century skills developed in this project have limited presence on current standardized tests. Teachers, administrators, and school district staff who value the benefits of integrating technology should recognize that increases in student motivation, engagement, and other affective traits that have been seen in association with project-based, community-based, and other important forms of learning may not lead to improvements in all skills as they are assessed on current standardized tests.
- Students who are new to using technology for educational purposes and students who struggle academically may need specific instruction on how to learn with technology. Students who use school computers outside of school need guidelines and information about policies for caring for their computers.

For parents and community leaders:

- Notable improvements in student performance were observed in districts that included rich community partnerships and where students had laptops for home use. Schools and students need these strong relationships in order to maximize the effect of the teachers' efforts and the technology.