Best Practices for Implementing a

1:1 Laptop Program

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Executive Summary
In August 2012 Orange County Public Schools will be joining an increasing number of school districts that have adopted a 1:1 laptop program in order to improve student outcomes. A review of the literature reveals that some, but not all, 1:1 laptop programs have improved student outcomes. Variation in outcomes is largely attributable to how the programs are implemented. Key components of this implementation should include a high-quality professional development program, adequate technological infrastructure and support, and leadership in attaining stakeholder buy-in for the program.

Background: Orange County Public Schools to start a one-to-one laptop program
A 1:1 laptop program alters the school environment by having every individual student possess and use a laptop. Such programs have been around for over a decade, but adoption of such programs has ramped up, and 1:1 programs are generally viewed in a favorable light as a research has documented a general trend of improving educational outcomes (Holcomb 2009). There are now six states with one-to-one laptop programs as well as over 30 districts throughout the country. Orange County Public Schools in North Carolina began program implementation in
April 2012 when 6th-12th grade teachers received their laptops and plans for professional development. In August of this same year all 6th-12th graders will receive their laptops. The following year, 4th-5th grade teachers and students will go through this same process.

**Implementation plays a large role in the success of a one-to-one laptop program**

There is a gap between the research on effective one-to-one laptop programs and schools having successful 1:1 laptop programs. Implementation is the key in connecting the “science” to the “service.” If a good program is implemented poorly the expected positive outcomes may not be realized. Implementation is important for determining whether the staff are fully prepared, whether the technological and support infrastructure is sufficient, and whether there is adequate buy-in of administrative, teacher, parent, and student stakeholders.

A review of the scientific literature and interviews with three directors of technology of North Carolina districts provided guidance on how to implement a successful, sustainable one-to-one laptop programs. For the implementation of Orange County Public School’s one-to-one laptop program, the core implementation components are the *professional development* program for teachers, the *technical and support infrastructure* for the teachers, and attaining *stakeholder buy-in* for the one-to-one laptop program.
Recommendations for Orange County Public Schools
The following recommendations are based on results from the literature review and interviews with directors of technology.

- *Possess a high-quality, ongoing professional development program:* Sam Morris said that professional development “is the most important money that [districts] will spend in the process [of implementing 1:1 laptop programs].” Successful implementation hinges on the execution of the teaching staff, so the professional development of the teachers is a core component of implementation. The professional development should consist of training throughout the summer and school year that provides adaptive and continual development for teachers. Knowing how to the technology is important, but the training should focus more on the pedagogical shifts that realize the full potential of the laptops. Non-punitive evaluations should provide constructive feedback for teachers as well as collect data to improve the professional development program. Professional development should be enhanced through the use of teacher leaders and collaborative communities. “The most effective professional development is job-embedded, student-centered, collegial, ongoing, and metacognitive” (Holcomb 2009).

- *Institute an adequate technical infrastructure and support system:* Reliable technical infrastructure and readily available technical support are crucial keys in implementing 1:1 laptop programs (Penuel 2006). Without adequate electrical supplies, network access points, and internet bandwidth, teachers are unable to fully realize the potential of the laptops. Pilot programs are an
excellent means of determining what is adequate. Technological support for teachers should be localized at the school level, and managed at the district level in order to provide just-in-time assistance. Districts should maintain close relationships with external organizations such as laptop vendors in order to best leverage their resources.

- **Develop stakeholder buy-in through supportive leadership and culture:** Sam Morris said, “It all depends on leadership.” School administration should guide the implementation of a 1:1 laptop program by focusing on improving student achievement and selling stakeholders on the potential of the program. The administration needs to be inclusive and supportive of key stakeholders, especially teachers. Policies that include teachers in decision making, alignment of program objectives, pedagogical practices, and teacher expectations in evaluations, and dispersing leadership through the use of teacher leaders and collaborative learning communities help create a supportive, innovative culture. A 1:1 laptop program with such an environment, high-reaching standards and objectives, and provides adequate support removes many of the highest barriers to technology integration (Ertmer, Ottenbreit-Leftwich et al. 2012) and will see higher rates of user acceptance and usage behavior (Venkatesh, Morris et al. 2003)

**Conclusion**

It is not enough to copy a successful one-to-one laptop program. In order to improve student achievement, successful implementation combining multiple
implementation components, which includes excellent professional development, technical infrastructure and support, and community buy-in, is crucial.

References


