



## ***Implementing 1:1 Computing: More About Education than Device***

### **Developing A Vision and Plan for 1:1 Computing:**

Implementing 1:1 computing is like cooking the perfect meal: for spectacular results, you must conduct the process slowly and patiently, using the right ingredients at the right time...all while visualizing the outcome. In K-12 schools, *1:1 computing* connotes a child having his/her own device. ***Most school districts believe they are engaging in 1:1 computing when there is a ratio of one computing device, tablet, or phone for every child. Often, this concept is considered a silver bullet: "If the computer is present, education will occur."***

**In reality, 1:1 computing is a complex system grounded in a vision of educational accomplishment. This may include a cloud-based system that enables customized instructional resources to:**

- Deliver measurable, individualized instruction
- Provide teachers with ongoing professional development
- Link all instructional stakeholders (parents, students, teachers, and administrators) toward achieving outcomes

For 1:1 computing to be economically viable, the combined cost of instructional materials and devices must be close to, or ideally, what is presently spent on textbooks. Currently, schools are paying more for devices and materials for 1:1 computing capabilities; however, schools then own more of their intellectual property, thereby lowering overall, long-term costs. With this new trend, educational publishers must develop new pricing models and licensing options to be acceptable to schools and remain profitable. Although it will take some time for 1:1 computing to be economically viable for many districts, it will happen gradually in the next five years, and can be done now with open source materials.

### **Gathering the Necessary Ingredients:**

To understand effective implementation of 1:1 computing, observe the common characteristics of districts moving effectively in that direction.

The following attributes are present in all consortium districts making significant progress.

- **Start by focusing on instructional outcomes:** The process can take 3 to 5 years, so successful districts learn to keep their eye on the prize. For example, the Sunnyside district in Tucson, AZ, is focused on high school graduation rates. For the 5+ years they've used 1:1 computing, rates have grown from 67% to 87%.
- **Pilot all new activities:** Never begin with full-scale implementation. The process should be gradual over a 3-4 year based on where the academic need is and beginning with competent, enthusiastic staff who are very well supported. The Minnetonka, MN district utilized 1:1 computing in half the high school freshman classes before expanding to the entire freshman class, and eventually to the entire high school.



- **Build infrastructure that is robust, redundant, and practically bulletproof:** In Lake Charles, LA generators back up all instructional materials reside on the cloud and networks, creating a dependable network that garners stakeholders' trust.
- **Provide professional development:** This may include technology instruction coaches per school to provide long-term, consistent support to teachers on integrating subject matter into teaching with technology.
- **Pursue sustainability:** Successful districts include technology as part of their ongoing budget and plan for sustainability.
- **Empower the technology director or CIO:** These professionals are strategic both instructionally and technically and should be a member of the superintendent's strategic management teams.
- **Champion 1:1 computing:** In most cases, this is the superintendent's role—to secure resources and tout the program within the community. There should always be a strong PR campaign to support the effort.
- **Search for new materials and approaches continually:** There should be an ongoing search for new materials to implement and gradual improvement through training. This may include piloting different programs, from open source content to adaptive assessment.
- **Develop metrics to study progress:** As an example, Henrico County (VA) has a 4-year process with distinct metrics available to demonstrate gradual learning of new teaching skills.
- **Create policies:** Again, successful districts develop policies that require teachers to utilize digital curriculum and master technology skills.
- **Gradual Implementation:** The fastest way to wreck a major change like 1:1 teaching and learning is to implement it with everyone at the same time. Effective implementation requires stakeholders to have a strong desire to integrate the technology and see it as a beneficial addition, not as extra work. The major reason education technology implementation fails, is organizational resistance to the new process.

### Determining What is Missing:

There are certain roadblocks that can prevent 1:1 computing from becoming more common in the teaching and learning process, including:

- **Adaptive assessment:** This locates missing skills, provides materials to teach them and certifies competency.
- **Intelligent instructional materials:** These are needed to respond to particular learning needs.
- **Significant training and time:** The truth is, 1:1 computing creates a major change in the work process of teaching, and therefore requires a significant professional development and support investment.



- **The need for long-term, embedded mentoring:** This is the *strongest form* of professional development, as studies suggest that web-based instruction has not been as effective. Ideally, every school should have a lead teacher chosen for their pedagogical quality and technological knowledge who co-teaches with, or trains, other teachers about best practices for digital instruction.
- **The digital cycle:** This identifies how the piece gets from the source (e.g., teacher) to the subject (e.g., student) and back again through a host (e.g., learning management system).

### Avoiding Common Mistakes:

Even with all the right ingredients, motivated districts may still make missteps in the implementation process. Study the following to ensure you're not making implementation more difficult.

- **Having insufficient bandwidth:** The most common problem, is that districts lack sufficient bandwidth to implement and sustain 1:1 computing.
- **Being short-sighted:** Some districts view implementation as a short process and therefore implement too many systems at once, creating organizational resistance and inviting failure. Effective implementation is usually a 3-4 year process.
- **Lacking a goal:** If there is no outcome delineated at the starting point, efforts may become scattered or, worse, counter-productive.
- **Missing ongoing support roles:** Many districts fail to provide support at the school and curriculum levels to ensure ongoing program success.
- **Missing the target:** Some schools replicate the textbook model of instruction on a computer and thus don't benefit from the interactive, collaborative, and adaptive features of true 1:1 computing.

### Conclusion:

There are positive models for 1:1 computing that are driven by instructional needs, gradual implementation, sufficient professional development, and cost effective materials. With these ingredients, there is no doubt that 1:1 computing will continue to be a strong part of our educational future. The slow, meticulous process must be conceived educationally, and not just as a device for each student.

**The BLEgroup regularly produces thought leadership for smaller districts around the country...**

For more information and support contact:

Morgan Krieger  
Administrator  
[Morgan@blegroup.com](mailto:Morgan@blegroup.com)  
503.816.1953

Ed Freeman  
Partner + Director of School Services  
[Ed@blegroup.com](mailto:Ed@blegroup.com)  
303.514.5500

Eliot Levinson  
Founder + Managing Partner  
[Eliot@blegroup.com](mailto:Eliot@blegroup.com)  
804.580.2995