Low Stress Designs and Approaches for Student Laptop Programs

Jim Heynderickx
Oregon Episcopal School
jim@oes.edu,
www.k12converge.com

In This Session

- My Background
- Questions for You
- Reality Check
- Stress Management
- The Low Stress Laptop Program
- What's the Pay Off?
- What does a laptop program evolve into?
- The Good News

A little history…

- I taught college level courses for about 10 years.
- My main focus was writing and then project-based learning with student publications.
- I created a successful 1:1 laptop program at Lowell School seven years ago that continues today.
- I am more critical of technology that enthused.
- I agree with Chris Moersch that real gains through technology are not measured by the type or amount of use, but the value of the opportunities made real. (See his LoTi Assessment program.)

A little history…

- I'm currently Director of Technology at Oregon Episcopal School (OES).
- I've never worked with a stronger group of faculty (Pre-K through 12), and funding for technology is strong.
- We're started a "second generation" laptop program for all seventh grade students this year.
- The majority of our faculty now maintain their own SharePoint websites, and we're moving toward 100%.
- Many of the faculty sites include password-protected discussion areas.

Questions for You

What are the main stress factors when you plan, implement and then maintain a 1:1 laptop program?

Questions for You

How can you tell when you, your tech staff, or the community itself is feeling stress from the laptop program?

Reality Check

- 1:1 Laptop Programs are a major undertaking, even in the best situations and with the best planning.
- I know of several laptop program planners who left their schools not long after implementing a 1:1 laptop program.
- I know of several laptop programs that were “discontinued,” in part because of uncontrolled stress factors.

Reality Check

- Many laptop programs have been “rushed” into existence.
- Laptop programs can “burn out” tech departments.
- Laptop programs are very “high profile,” and they can be career killers.
- Laptop programs are an evolutionary step in school technology, and not the “final program.”

Top Stress Factors at Private Schools

- Program costs
- Parent expectations
- Faculty adoption curves (for productivity and curriculum)
- Support and maintenance costs and time
- Worm and virus attacks.
- Reliability/Availability Frustrations (Batteries, outlets…)
- Student misuse and breakage issues.
- Overloaded network services
- Equipment storage and theft.
- Health and weight fears and concerns.

Top Stress Factors at Public Schools

- Most of the stress factors are the same, but add the following:
  - Increased standardized text score expectations.
  - Fluctuating budget allocations.
  - “Bargaining chip” debates about validity of program vis-à-vis other opportunities.
  - Sensationalized news reports about successes or failures of the program.

Stress Management

- Given the complexity of laptop programs, it's not hard to understand why many schools continue to pass on the idea, even as the costs of hardware and support services drop each year.
- I have seen programs where the benefits of the laptops were nullified by the problems caused by related stress factors.
- Not all stress can be avoided, but most causative factors can be planned for and de-powered.

The "Low Stress" Laptop Program

- I'm currently implementing my second 1:1 laptop program.
- "Low Stress" design elements are at the heart of the program plan.
- A central belief: this program needs to work in a positive fashion for everyone involved: students, faculty, parents, administrators and tech staff. None of these groups should "suffer" for the success of the program.

Step 1: Faculty First

- Laptop programs are not a way to “force” technology integration into the curriculum.
- The programs should be a response to a “pull” for technology, and not a “push” of technology.
- At OES, all full-time faculty were provided with wireless laptops starting four years ago.
- As a result, nearly all faculty achieved their “productivity gains” with laptops, and they moved on to greater use in the curriculum (based on their own positive experiences).
- In our middle school, this led to 119 computers for 170 students, and still the faculty couldn’t access the computers as often as they wanted.

Step 2: Killer Apps

- Before laptop programs are planned, there should be clearly defined reasons for their existence.
- In our middle school, the primary “killer apps” were
  - Writing and research in Humanities and English
  - Data collection, processing and presentation in sciences
  - SharePoint collaborative websites for online discussions in multiple courses.

Step 3: Faculty Involvement

- We presented multiple laptop program designs to the faculty early in the process.
- We defined core higher-order thinking skills as the primary objectives of the laptop program, with “organizational skills” as one of the most important.
- We shared school-owned and family-owned cost analysis, as well as Windows and OS X options.
- The faculty responded with questions and concerns about all the program options, the strongest being the cost issue.

Step 4: Cost-Critical Awareness

- To best respond to cost concerns:
  - The laptops would be funded entirely from the existing technology budget.
  - There is no cost or fee to Middle School families.
  - The laptops would be sub-$1000 iBooks for low cost and small form factor.
  - The software would be simple and universal (MS Office, Inspiration, Geometer's Sketchpad).

Step 5: Classroom Management

- By retaining ownership of the iBooks, we can set up students as “standard users,” who will be blocked from most system changes and software installs.
- We have warnings about music collections being lost when we re-image the iBooks, which we may do at any time.
- Games, movies and “music fests” in the hallways won’t be allowed. (This type of computer use culture has already been established.)
- We use Apple Remote Desktop 2 to monitor use (in real time) and distribute software.

Step 6: Manage Obsolescence

- Other laptop programs have had real problems with students becoming “bored” or dissatisfied with laptops as they become 2 or 3 years old.
- We plan to buy a new set of iBooks for the eighth grade each year, and shift the older iBooks down a grade each year. This means that students would move to newer laptops every year, and the oldest students would always have the latest gear. (Something to look forward to).
- The 75 fourth-year iBooks will be used in the Lower and Upper School, and as loaners to the Middle School,

Step 7: Minimize Maintenance

- I've worked with iBooks since the very first "clamshell" model.
- In my first 1:1 program, I was amazed by how well the iBooks held up to home and school use by fifth and sixth graders.
- Compared to the hundreds of Dell Latitudes I've worked with, the iBooks were more than an equal choice in terms of maintenance.
- It was far easier to set up on-site repairs (no-questions-asked parts and shipping boxes) than with Dell.
- Also, we could worry less about worms and viruses, and NetRestore offered imaging options that were more simple and direct than Ghost or Altiris (and free, at that).

Step 8: Parent Involvement

- We created a 17 page FAQ about the laptop program and shared it will parents at the announcement of the program. (See URL on handout.)
- This document answered nearly all of the initial concerns of parents, and the meetings we held with parents after the announcement were positive and supportive.
- One concern: would the laptops be used too much? Answer: we wouldn't mind decreasing the total amount of weekly home and school computer use by students, but increasing the quality.
- Another concern: the weight of the laptops. Answer: we want to move to CD or online textbooks as soon as possible. One science textbook weighs the same as an iBook.
- A core element of (and for) the laptop program must be meetings with parents about the laptops and their best use at home. These sessions need to be ongoing.

Step 9: Implement Slowly

- “All at once” implementations for three or more grades can be extremely stressful.
- In the Middle School, it is possible to implement one year at a time.
- Doing a “pilot year” (with exit strategies) can reduce stress all around, and build evidence in good faith.
- In the Upper School, it is possible to implement one course at a time– some courses can require laptops, while others do not. The students can choose which they want to take.

Step 10: Share Progress

- Parents and faculty need to be “kept in the loop” about the progress of the laptop program.
- During the first year, a monthly newsletter about the program isn’t a bad idea, especially if it can be written by a parent volunteer.
- This newsletter should go to all parents and all faculty, because everyone is going to be thinking about the program whether they’re directly involved or not.

Step 11: See the Big Picture

- In the Lower School, moving sets of iBooks are replacing fixed labs.
- In the Upper School, we have a “laptop friendly” environment, and 25 percent of US students currently bring their own laptops to school on a daily basis.
- During finals week, 40 percent of students may bring their own computers to school. We also have 50 boarding students with their own computers on our network.
- In the Upper School in the future, we are planning to support increasingly higher percentages of laptops brought from home, both Macs and PCs.
- College and universities do not distribute fleets of laptops. Students will be on their own, and we will support them through this transition of individual choice and support.

Step 12: Assess, Assess, Assess

- As for assessment, we created a baseline measurement using Chris Moersch's LoTi evaluation tool. (See URL on handout.)
- We'll continue to use this tool each year to measure the level of technology integration (with a focus on higher order thinking skills).
- We will also use online Zoomerang surveys of students and parents and faculty for ongoing assessment of the program.

A Final Note…

- The laptop program has to work for the technology department.
- It can't "kill the staff" with overwhelming support needs.
- It can't "label the tech program" as an insensitive, bullying entity.
- It shouldn't be regretted or subjected to ongoing "word on the street" criticism.
- No matter what happens, be transparent about planning, successes and problems.

So What's the Pay Off?

- Given the complexity of all this, there needs to be a solid, rewarding payoff.
- If you don't have improved use of computers for writing, research and communications, you're doing something wrong…
- In addition, math and science can use laptops in excellent ways.
- Just as important, however, is creating a "laptop culture" in the school and home that really uses the systems as tools and not toys.

What's Next?

- Like all technology programs, laptop programs are simply another evolutionary step.
- Each year, students become more competent with using and maintaining technology.
- Upper School students are now capable of choosing, using and maintaining their own computers.
- In the near future, Middle School students will also become responsible for their own tools.

What's Next?

- In the long run, schools will provide services instead of hardware.
- Subscription databases gain more depth and value every year.
- Internet 2 opens entirely new forms of online interaction.
- Software grants to students (for high end software) may make more sense than computer labs.
- If you think about it, high end software can be fully explored in fifty minute periods, but exploring and using it at home makes much more sense than another 3 hours of IM.

The End of Laptop Programs?

- The end is sooner than we think, and some (or most) schools will by-pass the “laptop program” phase entirely.
- Think of the possible value of the $350 Nokia 770 Internet tablet for browsing: how long can any of us say “they can’t come to school.”
- The Benson Foundation Report about the Sustainability of the current infrastructure is correct– it is failing. What will replace it will be more student-centered, owned and maintained.

The Good News

- The good news is that laptop programs are laying the foundation for the distributed technology future.
- It's reassuring that this is a transition step, and that our work in this area may change radically in the next three to five years.
- Schools are research institutions, not corporations with fleets of computers for mobile professionals.
- I like the idea of a more collaborative and individualistic technology environment at schools, instead of a "we decide, you use and we maintain" environment.

Our MS Laptop Program Survey

- We just did a survey of faculty, parents and students about our MS laptop program (in its first year, 7th grade students only):
- 88% of parents recommended we continue the program
- 91% of students recommended we continue the program
- 100% of faculty recommended we continue the program

Questions and Discussion

- What is the path for schools with little or no technology budget?
- What will be the impact of online courses?
- Is the digital divide getting worse?
- What happens if China implements a 1:1 program in even a few districts?
- Is it possible for laptops to become a negative stress factor for students?
- How much meta-data about students is useful, and how much is too much?