

# Digital Literacies

## Laptops and Inspired Writing

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For the last seven years, our team has been investigating learning and literacy practices in K–12 classrooms across the United States where all the students have laptop computers. We have found that the greatest impact of individual laptop use is on student writing. When students have daily access to Internet-connected laptops, they conduct more background research for their writing; they write, revise, and publish more; they get more feedback on their writing; they write in a wider variety of genres and formats; and they produce higher quality writing (Warschauer, 2006).

In spite of these benefits, K–12 schools have been slow to adopt one-to-one laptop programs, largely because of the cost. Fortunately, a wide range of new low-cost and free tools are available, all of which make the introduction of K–12 laptop programs more feasible. Of course, even with a more sustainable infrastructure, laptop programs still need to be grounded in solid educational principles to succeed.

One of the districts we have recently investigated provides a potent example of how to build a writing-centered, one-to-one program that is both sustainable and educationally effective. Littleton Public Schools (LPS) is a suburban school district near Denver, Colorado. Approximately 18% of its students are ethnic minorities, mostly Hispanic, and many of those students are English learners.

LPS has long emphasized student writing as a critical component of learning across the curriculum. Two years ago, the district introduced an educational reform called Inspired Writing that deployed laptop computers to support writing instruction. The program has gradually expanded to provide individual laptop computers to students in all English language arts classes from 5th through 10th grades and has started to gain national attention for its innovation and impact (Gabriel, 2010).

### New Low-Cost Tools

In our earlier research on laptop programs (see Warschauer, 2006), schools employed Windows-based or Macintosh computers costing roughly \$1,000 each, with commercial software adding to the costs. LPS chose to use small netbook computers costing less than \$280 per unit. Our interviews and surveys found that students and teachers like the netbooks, and their small size made them easy to fit on students' desks or move around the classroom. With a six-cell battery, the netbooks run all day at school without needing charging.

**“Computers open a door from the classroom to the world.”—Jessica**

The netbooks were outfitted with a customized version of the Linux Ubuntu operating system developed and shared for free by the Saugus Union School District in Santa Clarita, California (community.saugusd.org/swattec/page/Linux+on+Netbooks).

The operating system is easy to navigate and highly stable, and it comes accompanied by a wide range of free educational software, such as Open Office.

Most recently, LPS has implemented the free cloud-based Google Apps districtwide so that all students can write and store their written work via Google

Docs and communicate via Gmail. Classes throughout the district also use social media for writing, with tools such as Blogger, PBworks, and Twitter adapted by individual teachers or schools. An LPS blog allows students to comment on districtwide issues and provides links to recent feeds from local schools.

## Authentic Writing

All these tools could be distracting rather than beneficial if they were not accompanied by the appropriate pedagogy. LPS’s instructional program focuses on developing effective and powerful writers by exposing students to the intricacies of diverse genres, modeling good writing in those genres, and providing students with ample opportunities to write in these genres on topics of their interest and share their work with others (see summary of writing curriculum in Littleton Public Schools, 2009).

Students talk about writing, write, and comment on others’ writing for a substantial amount of time during almost every school day, and they use new forms of social media to do so. We witnessed students publishing their writing on blogs and wikis, discussing others’ writings through written chat tools (e.g., CoveritLive.com), and writing collaboratively via real-time text tools (e.g., TitanPad.com).

Much of this collaboration and communication occurred within the classroom, school, or district, but sometimes it involved contact with outside experts. We learned that even only one outsider—such as a professional or author recruited through personal

contact of an individual teacher—who communicates with a school occasionally via blogs or Skype can have a big impact, as students became more motivated to write for an authentic outside audience.

## Student Voices

Perhaps the best way to understand the impact of the Inspired Writing program is through the voices of the districts’ students. As part of our research project, we analyzed the content of 391 blog comments voluntarily written by LPS students in 2009 and 2010 in response to questions about the Inspired Writing program. Using a bottom-up coding scheme and qualitative data-analysis software, we identified six themes expressed in the student blogs, each of which indicates the value students place on learning with laptops at school.

The first theme of “Tools for Better Writing” refers to how laptops helped students to draft, revise, and publish their work. Students pointed to the benefits of spelling, grammar, and formatting tools; the ease with which they could edit work; and how writing by keyboard helped them to avoid fatigue and to stop worrying about handwriting. A student named Tristan wrote,

Having laptops in the classroom has been an amazing experience coming into my first year of high school. I’ve actually enjoyed writing more, because personally, in the past, I haven’t been able to write for very long without my wrist starting to hurt. Having a laptop, the pain has ended, and my writing has improved so very much within just this year, whereas in middle school my levels of writing stayed just about the same.... I’ve written my best essays, poems, summaries, anything, you name it, this year.

(This and all other student writings in this article are from published blog comments available at [bit.ly/nysAl](http://bit.ly/nysAl) and [bit.ly/9jOEfT](http://bit.ly/9jOEfT).)

The second theme of “Access to Information” refers to the ease with which students could find online information to assist their writing, learning, and contributions to society. As a student named Jessica wrote, “Computers open a door from the classroom to the world.... Instead of remaining ignorant to the issues that spread all over the world, students can educate ourselves in order to make a difference.”

The third theme of “Share and Learn” refers to the value that students perceived from sharing their work with peers in their classroom or the public at large, sharing that strengthens their sense of authorship and ownership. As ninth grader Carolyn wrote, “The pressure of knowing that the whole world is going to see everything that I write and post online makes me want to do my absolute best.... The laptops have helped me write like I never have before.”

The fourth theme of “Self-Directed Learning” refers to the benefits students get from learning that is individualized, differentiated, and under their own control. A number of students described how such individualization helped them cultivate their sense of autonomy. As ninth grader Laura wrote, “I have learned responsibility and I have also learned that thinking outside the box isn’t just going further than the question asked; it’s finding things out for yourself and challenging the system that is given to us.”

The fifth theme of “Remaining Relevant in a Technological World” refers to students’ perception of digital media in relation to their future. As Melissa, a high school student, wrote,

There are very few jobs left that do not require knowledge of computers in some way. In colleges, students will be required to type up their papers, fill out online applications, and use the Internet to complete research papers. If schools are to prepare students for success in today’s world, they must spend money on computers. Otherwise, students will be unable to compete for places in colleges and for jobs in the work force.

The final theme of “Engagement With New Media” refers to the great enthusiasm that students expressed about writing and learning with laptops. A student named Lupita wrote,

I used to not like writing but now I keep looking at the time and inside I am saying, “Is it time for writing yet?” If you don’t believe me come visit us.... You have to see it to believe it because your eyes will pop out.

Lupita is right. Our eyes did just about pop out when we saw how passionately she and other LPS students were writing when provided access to laptops, wireless networks, social media, and a forward-looking pedagogy.

## Lessons Learned

The particular digital tools available for the classroom will evolve over time. Smartbook computers—based on the form factor of laptops and the processing chips of cell phones—may prove to be a better alternative for schools than netbooks. Or, future versions of the iPad tablet and other slate computers, especially when combined with external keyboards, may provide an ideal combination of e-reader plus writing device. Online resources for writing, publishing, and networking will surely evolve as well. Nevertheless, the lessons from the Inspired Writing program in Littleton will be important to keep in mind, whatever new tools emerge. We need to view our students not only as learners but also as real writers with something important to say and provide them the opportunity to write daily for an authentic purpose and audience using individual and flexible forms of digital media.

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