

DOES LAPTOP USE IMPROVE STUDENT LEARNING?

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My school's recent decision to acquire laptops was prompted by a logistic need to transform our current computer lab of desktop computers into a classroom. It was also felt that by acquiring laptops, we would be better able to integrate technology across the subject areas. While laptops will indirectly help improve our logistic needs and directly aid with technology integration, a pervasive question remains--will laptop computers also improve the academic achievement of our students?

The discussions that led to our decision to purchase laptops revealed a number of important issues. These issues will no doubt enter into your own discussions if and when your school is ready to acquire such technology.

The portability which laptop computers offer is a two-edged sword. While we considered the freedom they would provide for both teachers and students to move around the classroom, there is the unfortunate possibility that they could easily be stolen. This would compromise an already limited budget and the equitable access to the technology in our school.

With greater access to laptop units, students would also have an increased risk of dropping them or spilling something on them. This could very well increase maintenance and technical support costs. Concerned for their shelf life, we now had to decide what age/grade levels would be best suited to using the laptops.

The purchase of our new laptops would also require us to replace our existing cable network with a wireless system. As we soon learned, the reliability of a wireless network can be problematic—particularly when gaining access to the internet. Could this pose more of a disruption, as well as a distraction, for our students?

While these concerns can be addressed, the important question remained of whether utilizing laptops as an instructional tool would really improve student learning?

The answer to this question was not very reassuring after learning that the Liverpool Central School District in New York had decided to phase out laptop use in their schools. After adopting a one student use per computer for several years, school officials claimed that the laptop systems were “educationally empty and worse” (Winnie Hu, 2007).

The reasons school officials gave for their decision were related to students using laptops to exchange answers on tests, download pornography and hack into local businesses. To add insult to injury, it was reported by teachers that, when there is a one-to-one relationship between students and laptops, the box gets in the way, causing a distraction to the educational process (Hu, 2007).

The Liverpool School District, much like many other school districts, spent millions of dollars to acquire and maintain laptop technology. While the budget for my school laptops pales in comparison, it would seem like such a waste to spend it, without realizing the educational benefits for our students.

As I further studied the implications of laptop use in the classroom, I was reminded that there are usually two or more contrasting sides to any issue. Arriving at the right decision requires asking some key questions.

Why does laptop use in some schools fail? What made it fail in the Liverpool School District? Did the school district spend big dollars to acquire the technology without adequately planning for how they would be used by students? Were teachers ready to use the technology? Were teachers provided with sufficient training in their use? Did the school develop and implement policies and procedures for laptop use? How would the absence of such protocols affect the effective use of laptops in the classroom? Were laptops allowed to replace good pedagogy—the Teacher? How well were students supervised when using their laptops? Though not exhaustive, these are some important questions that need to be answered. If adequately addressed, I believe that laptop usage in schools can have a positive impact on students' academic achievement.

While the experience of students using laptops in the Liverpool School District was not positive, many schools have found that the use of laptops is greatly enhancing student learning and education outcomes. What factors contribute to the difference in these successful schools? I believe the answer lies in how well schools plan for laptop use and their integration.

In their quest to determine the effect of laptop usage on student achievement, Gulek and Demirtas (2005) followed 259 middle schools in the United States. Their research results indicate there was a statistically significant difference in English, math, writing achievement and grade point average between those students who used laptops and those who did not. These differences significantly increased each subsequent year that students were involved in their school's laptop program.

This comprehensive research undertaking further concluded that laptop use in schools benefit both teacher and students in the following ways:

Student outcomes:

- Laptop students spend more time engaging in collaborative work
- Laptop students participate in more project-based instruction
- Laptops lead to more students writing and to writing of higher quality
- Laptops increase access to information and improve research analysis skills
- Laptop students become collaborators (interact with each other about their work)
- Laptop students direct their own learning
- Laptop students report a greater reliance on active learning strategies
- Laptop students readily engage in problem solving and critical thinking
- Laptop students consistently show deeper and more flexible uses of technology
- Laptop students spend more time doing homework on computers

Teacher outcomes:

- Teachers who use laptops use a more constructivist approach to teaching
- Teachers who use laptops feel more empowered in their classrooms
- Teachers who use laptops spend less time lecturing

Seventh-day Adventist schools who might be considering purchasing laptops and those who already use them can benefit from the research and experience of other schools. Without doubt,

there are issues of concern related to security, reliability and durability with acquiring the technology. However, with adequate planning for integration, teacher training, high teacher involvement, ample time for student growth, acceptable use policies and improved supervision of students, laptops can enhance the academic achievement of our learners.

Many Adventist schools foster innovation, creativity, autonomy and independent research in their students. As indicated by the work of Gulek and Demirtas, the use of laptops can make a difference in each of these areas. Our schools are already in a privileged position to embrace the technology.

Resources:

Freiman, V., N. Lirette-Pitre, D. Manuel, S. Blain, M. Cormier, C. Essiembre, and B. Jacinthe (2007). "Impact of individual laptop use on middle school mathematics teaching and learning: Implementation of problem based learning scenarios." Retrieved July 3, 2009.

Gulek, J. C. and H. Demirtas (2005). "Learning with technology: The impact of laptop use on student achievement." *Journal of Technology, Learning, and Assessment*, 3(2).
Téléaccessible à l'adresse : <http://www.jtla.org>

Hu, W. (May 4, 2007). "Seeing no progress, some schools drop laptops." Retrieved online July 5, 2009 from <http://www.nytimes.com/2007/05/04/education/04laptop.html>.

Locsin, A. (2009). "Pros and cons of laptop computers." Retrieved online July 10, 2009 from http://www.ehow.com/about_5057178_pros-cons-laptop-computers.html.