

21ST CENTURY LEARNING: iPADS IN THE ELEMENTARY CLASSROOM



Using an iPad tablet for a classroom learning activity

Mobile computing devices like the iPad are finding their way into elementary school classrooms in growing numbers. In her research on the impact of technology on learning, Julie Mueller started with the simple question, “how are teachers using it to teach and how are students using it to learn?”

When Julie Mueller, assistant professor in Laurier’s Faculty of Education, and Eileen Wood, professor in the Psychology Department, set out in 2010 on their investigation into “Mobile technology integration in elementary and higher education: Impact on pedagogy and learning outcomes,” they began with an examination of the use of BlackBerry® devices in the Laurier MBA program and iPods in Waterloo Region District School Board elementary schools.

Today, Mueller and her graduate students are finishing up the Social Sciences and Humanities Research Council of Canada Standard Research Grant funded research by expanding their knowledge mobilization plan to bring suggestions for using mobile devices to teachers in local schools.

While the initial intent was incorporating iPods in an educational setting, time and the development of mobile devices marched on and iPads became a focus of the project.

In fact, iPads became an integral part of their research both as the subject and as a tool for the researchers themselves.

This was an important part of the project as “integrating technology is problem-solving. Learning to problem solve and be innovative about technological solutions was the real task of our research,” said Mueller.

Working with psychology graduate student Karin Archer and part-time Master of Education student Raegan White, Mueller set out to look at the difference between using mobile tablets as an individual device and using them as a tool for self-directive learning that will “allow students to take control of their learning—with, of course, a knowledgeable teacher supporting them.”

A number of observations have emerged from their research.

The tension between iPads as personal devices and classroom tools became obvious. Students don’t need to be taught how to use the technology. That is already part of their world. Students do need guidance in using the technology responsibly, however. “This is another reason we need to teach digital citizenship in our classrooms,” said Raegan White.

According to Mueller, there are “multiple points of learning with mobile devices. You can’t use them for absolutely everything in the classroom, but that’s OK.”

The potential contribution of mobile technology to learning, they concluded, is supporting the development of self-regulation, a key component of student assessment in Ontario elementary schools.

STUDENT USE OF MOBILE TECHNOLOGY

During the study, what did they discover students did with mobile technology? They discovered four broad uses:

- *Research*, using the iPad as a resource tool for information and figuring out questions;
- *Backchanneling*, using an in-class live stream that allowed them to follow while the teacher read aloud, asking and answering questions, and making observations;
- *Gaming*, during free time, of course, which involved the challenge of playing with peers; and, as a
- *Curriculum resource*, using dictionary, music, math, and French apps.

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IMPACT OF MOBILE TECHNOLOGY IN THE CLASSROOM

What was the impact of this use of iPads as classroom tools on students' learning? First, they found searching for information easier and broader. Second, students valued the ease of access and portability of the devices.

And finally, using the iPads as tools was enjoyable, resulting in students that were more engaged and motivated. "It makes learning more fun."

Building on evidence that effective teachers have differing levels of "experience, knowledge, and comfort" with technology integration, their research concluded that the teacher's role was to "understand all three: the technology, the pedagogy (what kind of learning is happening), and the content that is available."

Right from the beginning, the investigation happened in actual classrooms.

Within the Waterloo Region District School Board's "computers across the curriculum" program, Mueller and her team were involved in a pilot project that brought iPads into a few schools. Since then, the school board has rolled out iPads in every school in the district.

A PRACTICAL GUIDE FOR CLASSROOM TEACHERS

From their experience with local teachers integrating iPads in their classes, they realized the need for a practical guide that they could share with the school board.

"There are so many apps out there. Teachers are gung-ho and have often done a lot with iPads on their own, but it's hard to know where to start in the schoolroom setting," said research assistant Karin Archer.

"Teachers need a theoretical base for making sound pedagogical choices, too, not just a list," said Mueller. "It can't be just about the tool—it has to be about the pedagogy," added White.



Julie Mueller, Karin Archer, and Reagan White with their iPads and teachers' guide.

"I like to see a practical outcome to research. This study was done collaboratively with the school board, and we discovered that they were asking the same questions that we were. Integrating our conclusions, we've developed a theoretical framework for the use of mobile technology that has informed the practical applications we are recommending," said Mueller.

As they communicate their research results, among the book chapters and journal articles that are stock in trade for academics, they have produced the practical guide they recognized the need for.

This summer, they completed "Put their learning in their hands: a guide to iPad implementation in the classroom."

The guide helps teachers through the process from the opening point of evaluating their own knowledge of and comfort with the technology, to practical information on setting up iPads in an educational setting, to recommendations for applications that have proven to be useful in the classroom.

"This is 21st century learning, combining creativity, critical thinking, communication, and collaboration."

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