

Technology-Mediated Learning: Guest Editorial

Elizabeth Murphy, Professor, Memorial University of Newfoundland, emurphy@mun.ca

Technology-Mediated Learning is a broad term that encompasses the wide variety of uses of information and communication technologies (ICTs) in teaching and learning. Once upon a time and not that long ago, teaching technologies or tools were limited to chalkboards, books, pens and paper. Electronic tools might have included overhead projectors, televisions and tape recorders. These tools would have been primarily controlled by the classroom instructor and would “have tended to reinforce instead of reinvent existing norms” (Murphy & Rodríguez-Manzanares, 2014, p. 99). Thus, these tools would have merely afforded a very limited number of activities, primarily that of transmission and in one direction only - i.e., teachers use a chalkboard or overhead to transmit information to students who use pens and paper to receive the information. One-to-many broadcast mode with centralized control of the tools was the norm.

There is a well-quoted anecdote borrowed from Papert (1993) about surgeons and teachers who travel one hundred years into the future. Whereas the change in the operating room with its modern electronics bewilders the surgeons, changes in the classroom are hardly noticeable to teachers. That anecdote may have been relevant 20 years ago in 1993 but not in 2013. Campus classrooms at Memorial University of Newfoundland (Mun) are an example. Compared to a decade ago, the main floor of Mun’s university library has undergone a visible transformation. Instead of a passive space of row after row and shelf and shelf of books, the space has been transformed into an active Commons or learning hub. The Commons offers access to a broad range of electronic tools as well as to personnel who help students use these tools in support of their learning. Students’ broad access to tools is not only visible in the Commons. In corridors, classrooms and even cafeterias, students are using a wide range of complex electronic tools. All over North America, students are increasingly using technology in support of their learning. In fact, Bates and Sangrà (2011) observed that, in over 90% of post-secondary institutions, students are using online learning management systems.

The time-travelling professional on Mun’s campuses from 1993 to 2013 would be as bewildered as the surgeons who travelled one hundred years into the future. It is not only the prevalence of new tools that might surprise them but the ubiquity of tool use beyond the classroom. This increased use outside the classroom has been made possible by mobile technologies. Instead of the clumsy desktops of the 90s, students use portable devices that fit in the palms of their hands. These devices offer them access to software (often free) to support their learning and their social connectedness. Their notes may be stored in an online dropbox or a cloud. Their discussions may take place using online tools that organize threads. Their entire course may be available online so that they do not need to come to campus every day. More than ever before, students are connected, communicating and collaborating using powerful and empowering tools in and out of the classroom.

These new norms around tool use are paralleled by new forms of control. For example, students are less dependent than in the past on gaining access to information through an intermediary such as an instructor, professor or librarian. The new tools have also changed their communities by broadening them to include individuals who are geographically dispersed and diverse. Community members do not need to be in the same room to share ideas or knowledge: the tools they use are not dependent on physical place. The outcome of all this new technology in teaching and learning means that students are potentially more empowered and more in control of how, what and where they learn.

In a context of learning, the more tools students have at their disposal, potentially the better the outcomes. Of course, it is how the tools are used that is most important. A powerful tool is useless in the service of someone who does not see its potential or understand how to use it. Researchers determined long ago that merely putting more media into the hands of students does not make a difference. Use of media does not fundamentally change the activity of learning particularly when that media supports primarily or solely broadcast transmission. In 2013, the tools do not merely support the transmission of information in audio-visual formats to receiving students. The tools of this very early part of the new century make it easy for students to effectively produce information, share knowledge, and create and disseminate artefacts in diverse forms.

This issue on Technology-Mediated Learning highlights the potential of the new tools of this century to engage students in forms of activity that were not possible in the past. What makes this issue particularly “special” is that the majority of authors are former or present students of the Faculty of Education at Mun. What also makes it ‘special’ is its inclusion of different forms of writing including position papers, literature reviews and personal reflections. I would particularly like to draw readers’ attention to the first two items in this issue: the critical reflections by Smart and by Barnes. These reflections are in multimedia format in YouTube. The inclusion of this format is in recognition of the possibilities for new forms of representation and dissemination made possible by putting powerful tools for creation into the hands of students. The two critical reflections allow us to gain insight into the possibilities for the future of Technology-Mediated Learning. Smart describes the technology-rich, open, meaningful and student-centered learning of the future. Barnes describes the future’s “flexible, open and adaptive” learning institutions.

The inclusion of position papers is in recognition of the role technology can play in addressing common problems and meeting needs in teaching and learning. Lister’s paper argues in favour of reliance on distance education in rural high schools as a solution to the dropout problem among gifted students. Both Stokes and Barnes advocate for use of technology to improve opportunities for timely feedback and review during traditional face-to-face lectures. Manzer makes the case for providing support to struggling readers using technology-assisted reading. Blackmore explains how electronic games can support problem-based learning. Likewise, Saqlain’s and Young’s contributions to the issue also illustrate the role that technology plays in overcoming problems and meeting needs. Saqlain’s outline of the history of distance education and

e-learning in Newfoundland and Labrador illustrates how technology-mediated learning emerged in this province as a response to problems of distance. Young's study of students with learning disabilities highlights the role that assistive technology can play in supporting students with special needs.

Beyond technology's capacity to solve problems and meet needs are the opportunities it creates for new opportunities to emerge. Mawhinney's review of the literature illustrates how online assessment can help monitor student understanding, improve academic programs, and enhance student learning. Stevens provides insights into the types of opportunities that evolved in Newfoundland and Labrador as a result of the introduction of distance-learning technologies while Hewitt offers an enthusiastic personal reflection on how use of blogging enhanced teaching and learning with elementary school students.

Four papers in this special issue focus not on how technology solves problems but on the problems that can arise with its use. Barbour and Mulcahy examine enrollment trends in schools participating in online learning in Newfoundland and Labrador. The authors question whether a higher percentage of rural students enroll in basic-level courses at schools where academic-level courses are only available online. Vincent's paper takes aim at criticisms of online and distance learning for undermining academic integrity. Dolmont takes aim at those who argue in favour of greater controls over technology such as institutions and governments that practice Internet content filtering. To avoid causing problems, technology needs to be carefully integrated. That is essentially the premise of Barbour and Adelstein's study of high-school students' perceptions of effective online course design.

In closing, I'd like to thank the special edition co-editor Michael Barbour. Finally, thank you to all those who answered the call for submissions to this special issue and who took the time to contribute.

Works cited

- Bates, A. W., & Sangrà, A. (2011). *Managing technology in higher education: Strategies for transforming teaching and learning*. San Francisco, CA: Jossey-Bass.
- Murphy, E. & Rodriguez-Manzanares, M. (2014). *Activity Theory perspectives on technology in higher education*. Hershey, Pennsylvania: IGI Global.
- Papert, Seymour. (1993). *The children's machine*. New York: Basic Books, HarperCollins Publishers, Inc.