Tools or Toys: a Conversation About Wisdom in a Wired World

John Myers[1]

[1] Ontario Institute for Studies in Education, University of Toronto, Toronto, Canada

Abstract

Teaching and learning are more reliant than ever on technological tools and platforms, including—but not limited to—YouTube, tools from the Microsoft Suite such as PowerPoint, and Google. This paper describes a model for assessing the value of such tools, called FAB+D (Features, Advantages, Benefits, + Drawbacks). FAB+D is a rubric that I developed with teacher candidates between 2011 and 2017, and can be used by students and teachers alike to assess the technological tools that are becoming inextricable from our educational and pedagogical lives. The paper also raises, by way of conclusion, some ways that students might become more actively engaged in critically examining the technology being used in their classrooms.

Keywords: platforms, assessment tools, education technology

1. Assessing Technology in the Classroom

I have wanted to engage in a conversation like this ever since I came to the Ontario Institute for Studies in Education (OISE). In 1982-3, I led a curriculum team of grade five teachers for a unit in Social Studies for the Toronto School Board: *Technology and You*. An unstated motive for this work was a fear of what the new world of technology would bring. In the mid-1980s I saw examples of marvelous use of tech in the Social Studies classroom, such as simulations through programs like Tom Snyder Productions' *Decisions, Decisions*. The decisions students made used a five-step critical thinking protocol in which 1) situations were identified and analyzed; 2) goals were determined and prioritized; 3) options were considered; 4) decisions were made; 5) consequences were examined. I also worked with former teacher and retired principal, Marnie Taylor, who created and analyzed historical census and street directory data

from the Toronto and Ontario archives—a twentieth-century version of what Jean Talon did in New France!

In the nineteen-eighties the Ontario Ministry of Education was under the leadership of Bette Stevenson, a strong advocate for "computer literacy." To that end she stated, "It is now clear that one of the major goals that education must add to its list of purposes is computer literacy. The world of the very near future requires that all of us have some understanding of the processes and uses of computers" (Manger 267). Among the initiatives was an Ontario-made computer called the ICON which was pushed on secondary schools but fell out of favour by the late 1980s as PC and Apple products took over. When I came to OISE in the mid 1990s and realized that I was likely to stay awhile, I worked with and encouraged a number of teachers in the Honour Specialist course to explore the use of computers and the emerging potential of the Internet. Some of this work was published in *Rapport,* the magazine of the Ontario History and Social Science teachers Association (OHASSTA).

In a recent session on Twenty-First Century Learning sponsored by the Toronto chapter of Phi Delta Kappa (October 15, 2013), TDSB Superintendent and Doctoral candidate Karen Grose posed four questions for educators to consider when teaching in a wired world:

1. How are we promoting creativity in our classrooms, schools, school districts and our workplaces?
2. Are we implementing or are we innovating?
3. How are we using technological tools to transform learning?
4. Are our students genuinely engaged in their learning? Are we genuinely engaged in our learning?

Technology has changed how the world and individuals interact. There are concerns in the United States, Canada and elsewhere that society is moving towards more single-person households and spending less family time doing joint activities. In fact, research suggests that society is moving out of a formal cooperative structure to a focus on the individual (Putnam, 2000). The change is due in part to technology. Interactions can be conducted through various types of exchanges: voice based, digital, text, or images. Culture is changing and students have different knowledge and experience than their teachers. So in addition to using technology to promote learning school curricula, educators also need to recognize the impact technology has on everyday life and think about how we prepare students to function in this changing environment. The following chart outlines some of the changes we are debating.

Arguments for Embracing the Virtual World	Arguments for Slowing Adaptaion
Linking the world can promote peace and democracy as people can see more easily the possibilities for a better life.	People can use the anonymity of a social network to engage in cyber bullying—or worse.
Scientific and technological collaboration can spread ideas more quickly; networked communities lead to global synergy as we can build on each other's work more easily.	If the history of weapons technology is evidence, the wired world needs much more wisdom to learn to be responsible and productive in social networking.
People in isolated areas can connect with the outside world as well as family and friends due to mobile technology.	It is very difficult to have a face-to-face conversation when you are listening to music on an iPod or smartphone.
Ebooks and educational software can teach 21st century skills.	Technology is only a tool; the killer app of the 21st century is still a good teacher.

Libraries are out of date so let's have more access to technology in every classroom. We can better use the funds and new space.	The library as an "information hub" is a place for all media under the guidance of a skilled professional.
Access to information is growing exponentially.	How can people make sense of information without talking it through with others?
People can meet online, then in person, fall in love and marry.	You can't hold hands, hug, and kiss on the internet.
Social media is easy and cheap to use in classrooms in many productive ways.	Students might not be "on task" when they use their mobile devices.
Learners of all ages now have access to a universe of information.	While "fake news" has existed throughout history, its power, real or perceived, dominates every news cycle. The world of information is a swamp with hidden areas of quicksand.

So is technology a tool for learning or a toy that distracts? The teacher education classes I held from 2011-17 provided an opportunity to further explore the role of Information, Communication, and Media Technologies (ICMT). We published some of their work in *Classnotes*, an informal newsletter for my students' school advisers. We called the model we used for our analysis in our "Tools or Toys?" investigations the F.A.B. formula:

- Features—what it is; how it works
- Advantages—what it does; we aimed this at teacher use
- Benefits—the value; this section was aimed at student learning

We added a "realistic" addendum based on experience: the "D—Drawbacks," or challenges to implementation. Rita Gravina from Bishop Strachan School and I introduced this approach at the November 2011 OHASSTA Conference based on classroom work in our session, *21st Century Thinking in History and the Social Sciences Using New Media.* We see the FAB+D as a template that could assess any technological innovation schools are asked to examine. I used PowerPoint as an example to demonstrate the FAB+D model in 2011.

F- Originally designed for the MAC and called "Presenter" (1990), it is a long-standing presentation program. http://office.microsoft.com/en-us/powerpoint/ and http://www.actden.com/pp/ offer overviews of its many features and they get regular updates.
A- ease of use compared to overheads and drawing on the chalkboard; additional features can add variety to structured presentations through the use of colour, animation, sound, etc.
B- the advantages for teachers also benefit students + students can focus on key ideas and can learn these principles in preparing their own classroom presentations
D https://www.youtube.com/watch?v=MjcO2ExtHso and
 http://power-points.blogspot.ca/ show the drawbacks unless you Keep It Simple, Stupid! (KISS principle).

What Teachers Say

- Pessimistic view: http://okasaki.blogspot.ca/2008/01/why-i-dont-use-powerpoint-for-teaching.html. In this blog post, educator Chris Okasaki describes in detail his opposition to PowerPoint as a teaching tool.
- Optimistic view: combining a phrase with a picture that connects to students emotionally + a little interaction helps the message stick. A provocative proposition or key question can also promote critical discussion. For example, in a history class, "Turn to your neighbour and discuss the truth of the following: 'Jazz could only have been invented in the United states'."

Tips

- Plan your presentation *off* Powerpoint to avoid the paralysis of too many choices. Do not let the technology control your messages.
- Make sure people can easily read/view slides with simple, clear messages.
- Do not read aloud to the audience: have them read and react/interact.

*NB: All of the above sites accessed January 11, 2019.
Going Further (these are no longer active but I included them as our exemplar)
http://www.slideshare.net/paulwill/powerpoint-for-teachers
http://www.web-conferencing-zone.com/powerpoint-presentation-tips.htm
http://www.heathbrothers.com/madetostick/

We also assessed "quality of learning" through a rough standard consisting of nine elements that research has indicated promote meaningful learning:

- Did the use of technology promote an environment for learning through a) setting objectives and providing feedback, b) reinforcing effort and providing recognition, or, c) Cooperative learning?
- Did the use of technology help students develop understanding through a) cues, questions, and advance organizers, b) nonlinguistic representations, c) summarizing and note taking, or d) assigning homework and providing practice?
- Did the use of technology help students extend and apply their knowledge (both declarative, i.e. "knowing that," and procedural, i.e. "knowing how") through a) identifying similarities and differences, or b) generalizing and testing hypotheses? (Dean et al, 2012)

This work is ongoing and these days, given the controversies around social media and its use, relevant. Indeed, the nature of communications technology could be a unit or course theme for history, social science, law, economics, philosophy, and more areas under the Social Studies umbrella.

Following are some observations—based on the experiences of over two hundred teacher candidates from over two hundred schools in Ontario—regarding the usefulness of the FAB+D model and the "rough standard" for judging quality of learning, as well as how technology is being used as a tool in the classroom.[1]

1. The FAB+D formula is clear to student teachers and anyone else, perhaps including senior high students, wishing to assess the quality of any innovation. Among the "toys"

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[1] The work was done between 2011-17. As you read further, ask yourself: is this perspective outdated, or are the issues still the same?

we applied the formula to were Youtube, Poll Everywhere, Facebook, iPad, Prezi, Whiteboard, Blogs, Wikipedia, Twitter, Podcast Moodle, Timetoast, Edmodo, Kahoot, Livebinders, Padlet, Google Maps, Google Classroom, and many more, including APPs and content-relevant websites.

2. Our "rough standard" regarding the question of quality also seemed to be clear. Most teacher candidates found easy connections to one or more of the learning elements. The quality standard offered a purpose for the use of any technology and helped teachers connect instruction to outcomes. Their students also seemed to be able to reflect on the learning goals of the work they were doing and chart their progress towards achieving the learning goal. The anonymity provided in some applications allowed reticent students to share ideas and reflect on their learning and the learning of others. Google Classroom was but one way to enhance quality feedback and cooperative group learning.

    a. The use of tools for displaying visual information (nonlinguistic representations) was widespread. Teacher candidates frequently noted the superiority of getting students to summarize and prioritize visual information through note-taking over fruitlessly trying to copy everything from a slide.

3. Schools and school districts both encourage the use, yet constrain the impact, of technology through issues of hardware, software, school/district policy and the resources in the wider communities served. Access to platforms was still an issue in 2017 and seemed to persist even last year when speaking with teachers both in Ontario and British Columbia.

4. A majority of my teacher candidates and their school associate teachers welcomed and embraced the use of ICMT. Some remained uncomfortable. A few were skeptical and stayed that way—self-confessed "luddites". Most saw tech as a "two-edged sword" and not a magic bullet (As Michael Fullan said recently, "A fool with a tool is still a fool" [Fullan, 2014]).

5. The number of Apps in wide use has grown exponentially and their exploration over the years has resulted in hundreds of pages of data in the form of teacher and student experience. It is also clear that Google and its various manifestations have assumed a dominant position in school districts around the Greater Toronto Area (GTA).

6. Surprisingly, from three years of teaching a course on assessment, the use of technology as an assessment tool was not a major topic of research by my students based on their first year of practicum supervisions or course work at OISE. Perhaps some of the glitches when Ontario tried online testing with its province-wide Educational Quality and Accountability (EQAO) dampened enthusiasm and interest in this development. In October 2016 the online version of the provinces' grade 10 Literacy Test was cancelled. EQAO is pursuing work in this area, including administration of online testing and using tech to help special needs students adapt.

7. The issue of classroom distractions was noted but not extensively explored. When I talk to graduates who now teach full time, it is often a major issue. I noted it even 20 years ago teaching about tech in my Honour Specialist History course. Perhaps student teachers have too much on their plate in a four-week practicum to see it as a huge issue at the time, though they reflect on it later to me.

8. In 2010 I worked with a group of middle school students in New York State, exploring emerging issues in technology. Even then, students were most concerned about cyberbullying. Yet when they surveyed a hundred teachers and school administrators,

the adults had to be prompted to recognize the issue, as it did not jump to mind. To what extent, I wonder, has this changed?

My own interest in technology in the classroom has spanned nearly 4 decades. As I leave the formal world of teacher education, I offer my conclusions and wishes. History teaching and learning to think intelligibly about the past are more than blessed with an array of online resources for any course and any lesson. I am comfortable with how we approach the study and investigation the impact of ICMT in schools, at least within my curriculum area. Principles such as Design Down, Know Thy Impact (Hattie, 2012) are guides to my learning and teaching with or without tech.

One area that we did not explore (nor was it raised anywhere) was the phenomena of the "flipped classroom," a current flavor-du jour in some American jurisdictions. It is a form of blended learning in which students learn new content online by watching video lectures, usually at home as homework. Khan Academy has become a very popular advocate of this approach. Giving students homework in the form of application exercises and assigned problems is now done in class with teachers offering more personalized guidance and interaction with students, instead of lecturing (definition adapted from *Wikipedia*). Some small studies have suggested it is slightly superior to the traditional way of assigning homework in that more students may actually do the work. Early in my teaching of social science I had my high school students and my grade sixes watch TV shows of their choice to find examples of and applications for concepts and issues we were exploring in class. This helped me resist the temptation to brush aside the flipped classroom model as another silly idea. Could this diversification and exploration be worth sharing among teachers in a convenient way such as a blog or Facebook? *Rapport* has increasingly served as a useful forum for sharing ideas. I trust this trend to continue.

2. Continuing the Coversation with Students

For decades I have worked with Joan O'Callaghan who, like me, began as a classroom teacher and through a long and distinguished career wound up teaching English Language Arts curriculum and Instruction courses at OISE. We were both interested in looking at the world through the media—newspapers in the "old days" and "fake news" today. Joan and I have also used our complementary interests to conduct a number of national projects.

Much of what we know or learn about the use or misuse of technology in the classroom and beyond comes from the media. So it is important to learn how to analyze media treatment of technology—and of any issue. This can be made a component of the culminating end-of-unit task to be displayed or handed in, or used separately if a current event has attracted the class's interest. Joan's strategy of a "clipping thesis," assignment, which I now call "media file" when the work is all online, can be done for all subjects and grades from grade six and up. A version of the following assignment description, including question-generating strategies, appeared in the Perspectives Column in *Rapport 36* (2) February 2014, titled "Promoting Independent Learners."

1. Students either individually, in small groups, or as a whole class select a problem or issue in Canada today that they wish to explore (see snowball technique from the *Rapport* issue cited above)
2. They collect stories, pictures, or information about the topic over a three or four-week period from the local newspaper or other media, including appropriate and online sources approved by the teacher, national newspapers, news magazines, television and radio.
3. They prepare an analysis which might include aspects such as the following:

• Historical background of the issue (as reported in the newspaper and in the text);
•The perspective(s) taken by the newspaper or other media examined;
•A weighing of the different perspectives in order to arrive at a defensible   position on the issue in question.

Following are some of the topics and questions that students may use for developing "clipping theses" based on readings from their local paper and other media sources. The questions are applicable for Social Science, Law, and Philosophy courses as well as History and Geography courses and Social Studies in general.

Topic	Critical Question (s)
Good news / bad news	Do media reporting on tech news tend to show us at our best or at our worst?
Coverage of issues in technology	Are these reported as one-dimensional or are underlying complexities noted? Is the reporting positive or negative about the issue? Does the reporting change over time? If so how?
Tech addiction	Is it real or fake?
Tech in the classroom	What are the effects on learning? What evidence is offered to support the positions taken? Where do you stand and why?
Cyberbullying	Does the media give this the attention you think it deserves?
Role of Government	Should our provincial education ministry or school district have a policy on tech use in classrooms? In motor vehicles? Walking in the street? Can you justify your personal response?
Tech for Learning	What promising approaches has the media reported for using social media for learning? What evidence of successful learning do they contain?
Facebook	Does this platform promote critical thinking for democracies?
Google / Wikipedia	What place, if any. does Google have in doing research?
Social Media and the Truth	Under what circumstances, if any, can the online world be believed?

The clippings can be included as a portfolio or e-portfolio or cited in an essay on the topic and question. The clipping thesis assignment helps students go beyond the headline of an article to critically examine the story and the perspective from which it was written. In this way, we can teach students to develop the skills they need in order to be critical consumers of information. The "clipping thesis/media file" strategy can also help students to develop search techniques, in addition to just "Googling"; questions for any online investigation or webquest; and criteria for evaluating the usefulness of the website itself. The "clipping thesis/media file"

strategy helps teachers and students learn together. For example, the issue around the use of phones and tablets is not going away—so why not use the strategy have students help come up with a workable solution to the problem of mobile device use in classrooms? This way, students would use the very "tools" I have discussed to critically assess the values and dangers of technology in the classroom.

References

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