CAPACITY BUILDING K–12

SPECIAL EDITION # 41

Literacy for a Connected World

*Join us in this **Capacity Building** monograph as we explore how technology can be used to support the development of literacy for a connected world.*

> *Our children, youth and adult learners will need ... [a] ... balance of skills to meet the opportunities and demands of tomorrow. To help promote this balance, schools must take advantage of the technologies that are connecting us to information and people around the world and around the corner. Our task is to modernize classrooms and support educators' efforts to bring innovation to learning.*[1]
>
> *Achieving Excellence: A Renewed Vision for Education in Ontario*

Today's literate learners need to integrate knowledge from multiple sources, including video, online databases and other media. They need to think critically about information that can be found nearly instantaneously throughout the world. They need to participate in the kinds of collaboration that new communication and information technologies not only enable, but also increasingly demand.[2]

In order to be successful ...

Today's literate learners must	So that they
develop proficiency in using digital tools	can choose the appropriate tool for their purpose.
build relationships with others and make cross-cultural connections	can develop their thinking in dialogue with others (with whom they both agree and disagree), work through disagreements and pose and solve problems collaboratively.
be able to organize, analyze and synthesize multiple streams of information	can find and critically evaluate information for accuracy and bias.
be aware of the ethical responsibilities and safety requirements of Internet use	can contribute safely and positively in complex global environments

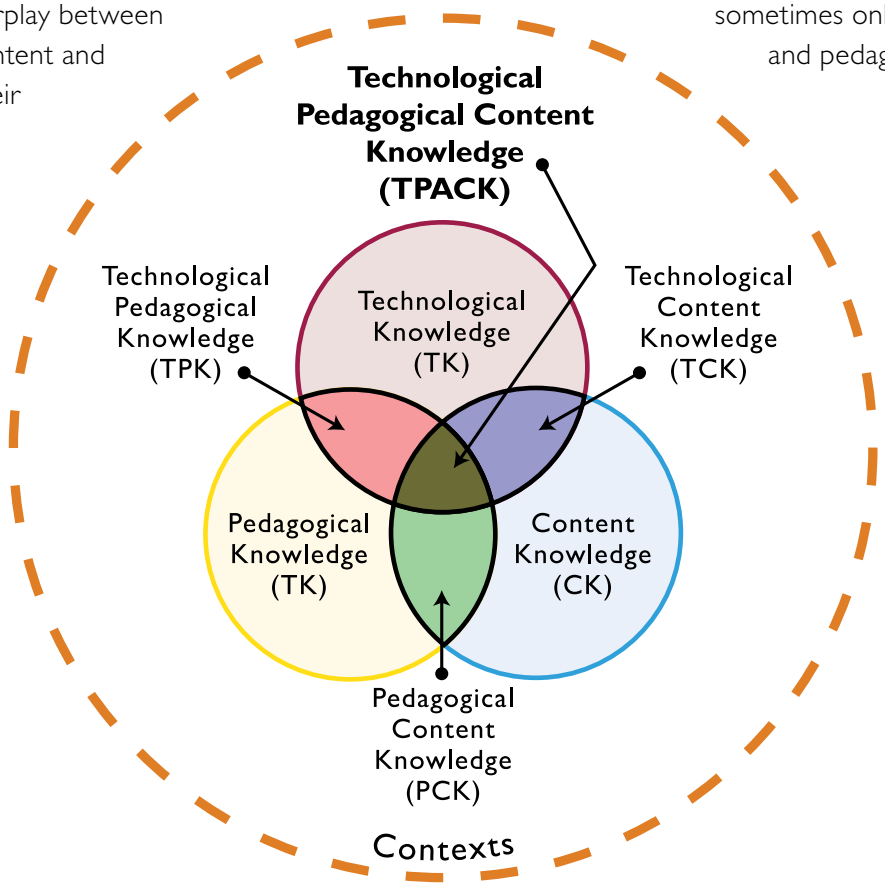
~ Adapted from the National Council of Teachers of English[3]

Using Technology to Optimize Learning for Students

Lee Shulman (1986) coined the term "Pedagogical Content Knowledge" (PCK) to explain that successful teaching requires not just knowledge of pedagogy and knowledge of content, but an understanding of the complex relationships between the two.[4] He defined PCK as knowledge of how to structure content to optimize learning for students, including knowledge of common misconceptions and difficulties students might have with the particular content, and teaching strategies that best support the learning of diverse learners in different contexts.

Matthew Koehler and Punya Mishra (2006) have built on Shulman's work to define the interplay between technology, content and pedagogy.[5] Their model – Technological Pedagogical Content Knowledge (TPACK) – offers a way to think about what educators need to know in order to integrate technology effectively in classroom instruction.

You may find the TPACK model helpful as you begin to explore with your school team what knowledge you may need to acquire and how you might plan with all three domains in mind to provide an enhanced student learning experience. At every moment in time, educators are actually involved in a complex "dance," deciding what is best for that student, given the content to teach. Sometimes you do want to be using only pedagogy and content, sometimes only technology and pedagogy!



Components of the TPACK Model

Technological Knowledge (TK)

Includes:

- how to use digital technology platforms and tools (such as document presenters)
- how to adapt to new technologies and use them in educational settings

For example, an educator might be comfortable using technology to track student assessments, to maintain a course calendar and to present content to students using presentation software with a projector or document camera.

Technological Content Knowledge (TCK)

Includes:

- how to use particular technologies to support or influence particular content.

For example, what reading skills are necessary for digital content and how do they differ from the skills necessary for reading traditional print? How is writing different when you are using Twitter? What publishing skills are necessary when using a digital storybook software? Educators need to know how content is actually influenced by technology.

Technological Pedagogical Knowledge (TPK)

Includes:

- how to use specific technologies to impact teaching and learning

Educators might consider how to use technology to improve formative assessment practices – for example, how to use polling software to provide descriptive feedback remotely in real time. If technology is used to improve formative assessment practices, then it is not related to the specific content so much as to the pedagogy of assessment.

Technological Pedagogical Content Knowledge (TPCK)

Includes:

- how to synthesize all the knowledge bases connected to pedagogy, content and technology to design learning situations that meet the unique learning needs of students in specific contexts.

For example, how might an educator use a learning management system to differentiate a reading task for students? When considering the location of an interactive whiteboard in the classroom, ask, Who will be using the whiteboard the most? Why? How will it support learning?

> “Because technology has increased the intensity and complexity of literate environments, the 21st century demands that a literate person possess a wide range of abilities and competencies, many literacies.”
>
> National Council of Teachers of English[6]

Reading, Writing and Publishing Today

Reading, writing and publishing in today's world requires understanding how technology can support the literate learner's access to information and his or her ability to create and share content. The impact of technology on these traditional literacy skills is explored in a bit more detail below.

1. Accessing and Curating Information

To be successful in today's world, students need to access, select, categorize and share information, all of which require critical thinking. Educators can facilitate the development of this skill cluster by teaching students how to critically use a search engine, and how search engines differ in the ways they organize information. They can also teach students how to use curation tools for the information they gather. Content curation is the finding, organizing, annotating and sharing of relevant digital content.

Tip: There are many digital tools that allow you to bookmark, group and annotate digital content so that you can share it or refer to it later. Conducting a search on "curation tools" will provide you with many options and how-to videos.

You may wish to visit "November Learning" to learn more about how to support students in navigating and using the plethora of content on the Internet.

2. Creating Content

Educators have long recognized that creating content for a relevant purpose and a real audience can have a profound impact on student motivation. As content creators today, students have almost limitless opportunities to access wider audiences for varied purposes. Yet, this requires that educators consider where the work will be published and for whom. Will student work be posted in a virtual learning environment, to a school website or elsewhere?

Connecting purpose and audience to form and style becomes a critical component of literacy instruction.

Both word processing and presentation software have changed dramatically over the years; most now include the ability to embed live hyperlinks, images and graphics. With the advent of web-based word processing applications (like Google Docs), the ability to collaborate simultaneously on live documents has become possible as well. It is not uncommon today to find students collaborating on a document with students from other classes, cities or even countries. Educators can provide students with ongoing feedback while the document is being created rather than waiting until there is a finished product, making formative assessment practices more timely and helpful.

Tip: Software applications that were once only for individual use are now adding cloud-based options which support opportunities for collaboration and feedback on digital documents.

3. Sharing Content

Technology has changed the way we tell and share our stories. Digital storytelling combines the traditional art of telling a story with digital technologies which provide the opportunity to add computer-generated images, graphics, audio and/or video. Some educators are using screen-cast applications, video production platforms and storybook applications with their students to create digital stories to share with local and global audiences. As with publishing and presenting software, educators must consider the explicit skills that need to be developed for successful digital storytelling, as well as where and for whom their students' work will be published.

Educators are taking advantage of the many blogging platforms available today and using them in creative ways with their students. Some have a class blog that they use to share information, links, resources and assignments with students. Others are using class blogs as a shared writing activity with their students to connect with classes around the world to exchange information and ideas. Still others set up individual blogs for each of their students to make their thinking visible as they reflect on their learning.

Blogging is proving to be a very powerful way of engaging students in writing and communicating. Having readers comment on their blog can be very motivating and even empowering for students. The feedback from an authentic audience can inspire students to become better writers.

Tip: Blogging is a great way to share ideas, information and media with parents and to create discussions with both classroom and global audiences.

For examples of classroom blogs:

- A classroom blog that includes links to student blogs http://mscassidysclass.edublogs.org/
- A classroom blog that includes success criteria for commenting on one another's blogs http://globalgrade3.cbeglobalearning.ca/
- "QuadBlogging" that matches up classes from around the world https://youtu.be/w8J8Jrr_eq4

Literacy has always been a collection of cultural and communicative practices shared among members of particular groups. As society and technology change, so does literacy.
(from: http://www.ncte.org/positions/statements/21stcentdefinition)

- What "communicative practices" are unique to our current society and how do you support the development of those practices in your classroom?
- What skills do your students need to be "literate" in the 21st Century?
- How can you use technology in the classroom to help students develop those skills?

Networked Learning

Today's students immerse themselves in social media, demand instant feedback, create avatars of themselves, design their own apps and video content, create mash-ups of their favourite songs and design their own websites.[7] Yet, as tech savvy as they appear, they are not always using technology and the information it gives them access to wisely or safely.

Sometimes our instinct as educators is to block Internet usage and ban personal devices from the classroom, but as digital innovator and Canadian Education Association president Ron Canuel suggests, this might actually leave our students more vulnerable to manipulation in the digital world. Rather, he says that should we think about technology like the sun and sunscreen … "mitigate the risks, but don't avoid it entirely as it provides too many benefits." Before embarking on the use of technology in the classroom, it is important that students are explicitly taught the importance of responsible Internet usage, including how to represent someone else's work while respecting licensing and copyright laws.

Networked Learning is learning that happens through the connections we make with other people and information. In a networked learning community, all members support one another's learning.

- With whom can I network my students to support their learning?
- How might networked learning lead to student ownership and engagement in their learning?
- What learning networks (either digital or not) am I involved in? How do they support my own learning?

A good digital citizen is someone who:

- uses effective strategies to search for information (e.g., keywords, narrowing a search)
- uses credible online resources (e.g., databases, encyclopaedias, e-books)
- evaluates and reflects critically on information/resources/sites
- respects intellectual property of others (e.g., paraphrases and gives credit)
- utilizes appropriate licensing options for personal creations (e.g., Creative Commons)
- communicates appropriately according to the audience (e.g., conventions, voice, form)
- contributes positively to the local and global communities
- identifies and responds appropriately to online issues (e.g., cyberbullying, sexting, etc.)
- develops a positive reputation and digital footprint
- implements precautions for online security (e.g., passwords and settings)

Adapted from the Ontario Software Acquisition Program Advisory Committee (OSAPAC).[8]

Capitalizing on Digital Tools

1. Why this learning for this learner at this time?

As educators become more knowledgeable about how technology can support learner needs, they grow to understand that our focus remains on the learner, and not on the technology. So before thinking about a tool, we must always ask ourselves: why this learning, for this learner, at this time?

When we've answered that question, we can then begin to consider what technology might support the learning.

2. What is my role in the learner-centred classoom?

The learner-centred classroom encourages students to have voice and choice in their learning. Students learn from one another and generate knowledge and content together. The educator's role shifts from that of disseminator of information to that of facilitator and skill-developer. Rather than providing students with content knowledge only, the educator's role is to teach students how to access, think critically about, synthesize, use, create and share content. Students are also encouraged to ask questions and tackle real problems in innovative ways.

Many educators are breaking down their classroom walls and taking advantage of technology to connect their students to alternate sources of learning. The networked or connected classroom takes advantage of the fact that learning can and does take place at any time, anywhere. Students learn best when there are multiple opportunities to reinforce new concepts and the learning is contextualized.

Some educators are using learning management systems, or virtual learning environments, for students to have online discussions, to provide a space to publish content for an authentic audience, and to access and share digital content in a variety of formats from anywhere as needed, recognizing that the learning does not stop when the student leaves the classroom. Sharing content in a virtual learning environment gives students ownership over their learning as they decide when and what they need to access.

In learner-centred classrooms, educators are using video conferencing software to connect to experts in the field or other classrooms across the district, province or world, giving students opportunities to learn from one another, different cultures and experts they wouldn't otherwise have access to.

They are also using screen casting and video applications as a way to help students to explain and share their thinking with others. And increasingly, they are using collaboration tools that allow students to build content together and enable educators to provide ongoing feedback in real time throughout the process to support learning.

3. What if my school has limited access to technology?

Educators across the province are exploring the many ways technology can be used to support and enhance student learning; however, schools vary greatly in their access to technology. At one end of the spectrum, a classroom might have 1:1 devices with full wi-fi capacity, while at the other end, a classroom might have a limited number of computers for students to share. Schools with limited access to technology can introduce innovations. They might, for example, video-conference with an author or take the class on a virtual field trip.

Tips for Getting Started

Be Audacious

Students use a digital audio recorder (e.g., Audacity) to record monologues. When they play back the recordings, students determine how the changes in tone, emphasis and pace affect the meaning of the text.

Self-Publish Online

Have students collaborate in pairs on a writing task using publishing software. Post students' texts to a Learning Management System or a Wiki to share with another class. Have students exchange texts and give one another oral or written feedback.

Skype with an Author

Skype with an author or an expert to develop active listening strategies, including interview and questioning strategies.

Explore Mind Maps to Push Thinking

Students use mind map applications (e.g., Mindomo) to organize concepts for a unit of study. As they explore their topic, they continue to revise their mind map, adding in links, images and videos when appropriate. They can capture early and late versions of their mind map, and determine how their thinking about the topic has changed and what contributed to that change in understanding.

Create TED Talks

To support the development of oral communication skills, have students view selected TED Talks. Analyze the talks and determine point of view, presentation strategies, purpose, use of appropriate language and non-verbal cues. Then have students create their own TED Talk!

Compare Digital and Print Texts

For example, you might have students read about a current event from a newspaper article and compare it to an online article about the same event. What features of text are used to create meaning?

Endnotes

1. Ontario Ministry of Education. (2014). *Achieving excellence: A renewed vision for education in Ontario*. Toronto: Queen's Printer for Ontario. http://www.edu.gov.on.ca/eng/about/renewedVision.pdf
2. Jenkins, H., Purushotma, R., Weigal, M., Clinton, K., & Robison, A. J. (2009). *Confronting the challenges of participatory culture*. Cambridge, MA: MIT Press. https://mitpress.mit.edu/sites/default/files/titles/free_download/9780262513623_Confronting_the_Challenges.pdf
3. National Council of Teachers of English (NCTE). NCTE's 21st Century Literacies. http://www.ncte.org/
4. Lee Shulman (1986) cited in Mishra, P. & Koehler, M. J. (2006, June). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teacher College Record*, 108, 1017–1054. http://punya.educ.msu.edu/publications/journal_articles/mishra-koehler-tcr2006.pdf
5. Koehler, M. J., Mishra, P., Ackaoglu, M., & Rosenberg, J. M. (2013). *The Technological Pedagogical Content Knowledge Framework for Teachers and Teacher Educators*. Michigan State University, East Lansing, MI. http://www.matt-koehler.com/publications/Koehler_et_al_2013.pdf
6. National Council of Teachers of English (NCTE). 21st Century Literacies. http://www.ncte.org/
7. November, A. (2012). Who owns the learning? Preparing students for success in the digital age. Bloomington, IN: Solution Tree Press.
8. Ontario Software Acquisition Program Advisory (OSAPAC) https://osapac.ca/ccpalo/dc/

Other Helpful References

- November, A. (2009). *Empowering students with technology* (2nd ed.). Thousand Oaks, CA: Corwin.
- The principal of change: Stories of learning and leading – George Couros' blog, http://georgecouros.ca/blog/
- tpack.org

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