



Technologist



Scenario

I teach the same course in the same way and want to learn how to use and incorporate technology for the benefit of my learners.

<https://www.youtube.com/watch?v=Dsx58vO3J0E>

Overview



Educators often find themselves standing at the crossroads between innovative use of technology as trendy or as evidence-based practice. This module will guide you as you select, use, and integrate technologies in a way that supports, facilitates, and enriches learning experiences.

Outcome

Use technology tools effectively to address specific learning challenges.

Objectives

- Reflect on your digital literacies for teaching.
- Explore ways in which technology integration can address learner-centered challenges.
- Use the SECTIONS framework to choose among technology tools for teaching and learning.
- Create a technology-enabled learning activity using a design-thinking approach.



Digital Literacies for Teaching

Digital literacies are complex and nuanced, and there are myriad of ones to consider. Using technology tools effectively to address specific learning challenges is just one aspect of digital literacies for teaching. These literacies encompass the abilities to locate, use, summarize, evaluate, create, and communicate information while using digital technologies and web-based platforms. They also include the expertise to engage safely, responsibly and ethically in online communities and networks.

What does digital literacy mean to you? How would you define digital literacy?

Explore the definitions of digital literacy that are linked below:

- [JISC Guide to Developing Digital Literacies](#)
- [All Aboard: Digital Skills in Higher Education](#)
- [The Government of British Columbia Defines Digital Literacy](#)
- [Higher Education Academy: Digital Literacies](#)

As you are reading the definitions, take note of ideas or competencies that resonate with your sense of what digital literacy is so that you can come up with your own definition.

Developing digital literacies is an ongoing process. These modules are a starting point; they include resources and a set of challenges and activities, that are part of a never ending process as we extend our digital literacies for teaching.

Extend Activity



What is your definition of digital literacies for teaching? Share and discuss your definition with your colleagues (and with students).

Write a short blog post about your definition of digital literacies for teaching. Share the link by sending a tweet to @ontarioextend with the hashtag #oextend.

Design-Thinking Approach

To get you started, we're going to use the process of design thinking. Design thinking taps into a designer's toolkit to engage users in creating and experimenting to spark new ideas and then

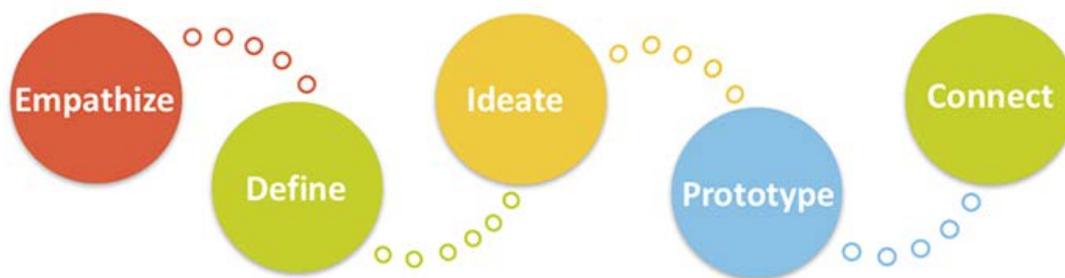


use feedback to improve those ideas. The core principle of design thinking is that it is human-centered –the people who will benefit from the product or solution are directly involved in its design.

In educational contexts, using the design-thinking approach can be helpful because it focuses on involving learners in finding a solution to a known problem or challenge, in a collaborative and iterative way.

There are various [methodologies and approaches](#) to design-thinking. In this module, we will follow the path of Empathize, Define, Ideate, Prototype, Connect and Test.

Technologist Module Design Thinking Process



“Technologist Design Thinking Process” by Joanne Kehoe is licensed under [CC BY 2.0](#)

If design thinking is new to you, watch this video, “What is Design Thinking?”

<https://commons.wikimedia.org/wiki/File:DesignThinking.ogv>

EMPATHIZE with your learners



Design thinking starts with empathy. When you design something that is going to be used by someone else—a lecture, an activity, an assessment—you must first understand what that



person needs. For example, when architects design a building, they put aside their own desires and think about what the users of that building need.

Extend Activity

This exercise asks you to empathize with your users—your learners—to identify a challenge that could be solved through the purposeful use of technology in your curriculum.



Create an empathy map following these steps:

- Gather information from and about your learners. You may already have useful information that you have gathered through feedback from course evaluations, emails, and other communication, but ideally, you'll create a specific method of gathering feedback for this exercise. You might do this through conversations or other forms of communication.
- Ask your learners what they think, feel, say, do, see, and hear. What do they have difficulty understanding or doing in your course?
- Reflect on the feedback you've collected from your learners and begin sketching your empathy map. You can do this on paper or in a Word document, or we've developed an [Empathy Map Template](#) with fields for the above guiding questions. Note that while you do not need to be logged in to your Google account to view this template, you must be logged in to make a copy to work on.
- Go into the File menu on the Google document and make a copy of the file. Rename the file for yourself and complete the template.

[Here is an example of a completed Empathy Map.](#)

After your Empathy Map is complete, try to get additional feedback in one of the following ways:

- seek out a colleague within your department/disciplinary area to discuss with him/her. See if there are shared concerns, or perhaps strategies they might suggest that you have not considered.
- Circle back to your learners to make sure what you've captured accurately reflects their experience. This could involve a conversation with one or more of the group you interviewed.



DEFINE your learner challenge

The Define step is about narrowing in and identifying a problem, or in our case, a challenge, based on what you know and have discovered about your learner. This is key to the design process as it is the focal point that you use to build your solution. It's tempting to start BIG, but it's actually more productive and yields better results if you start with something small.

Make sure that the challenge that you have identified is clearly defined.

Using principles from [d.school](#), a design thinking institute based out of Stanford University, a good learner challenge is one that:

- Provides focus and frames the challenge
- Inspires you and others around you
- Informs how you will evaluate subsequent ideas
- Captures the hearts and minds of your users
- Helps you focus on developing concepts and plans that meet the needs for most of the people that matter (in other words, you can't design something that is 100% perfect for 100% of all involved!)

Hopefully you will be able to easily define your learner challenge once you've created the empathy map. If not, use the map to find patterns that point to an opportunity. If you're still coming up blank, challenge your assumptions. Ask yourself, "What if?" and "How might I?"

Example: "Currently, I ask students to write a short research paper, and this exercise receives lukewarm response. How might I reimagine this activity through the use of technology?"

Or it may be that there is a concept that students tend to have trouble with? Is there a topic or a problem that they could use extra examples about?

Once you define your challenge, write it down and put it front and center. You'll be using this for the next steps of the design thinking process.

Extend Activity





Add your challenge to the Padlet: [Learner Challenge Bank](#). You can do this anonymously; sharing ideas may help other spark more ideas!

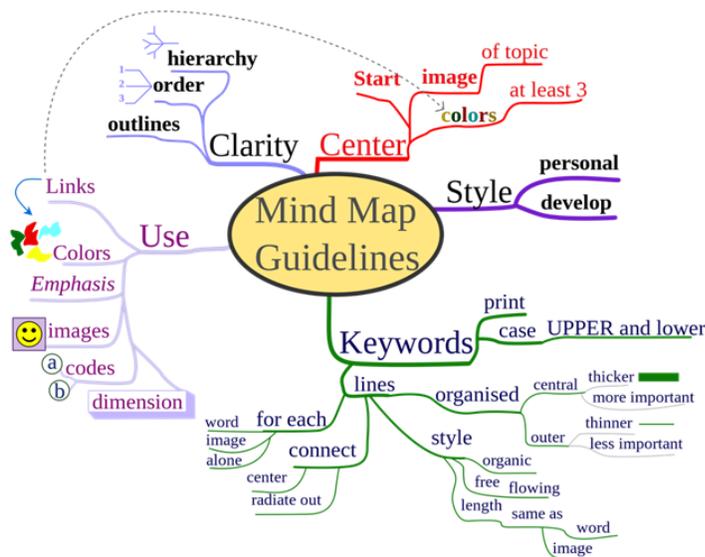


Ideate

Now it's time to ideate: to form and build the ideal features and characteristics of how using a technology could address your learner challenge. The best way to approach this is to build a list of possibilities by asking yourself, "how might I?"

We suggest you do this by [mind mapping](#). You can use our [Learner Challenge Mindmap Doc](#) or another online mind mapping tool such as [Mindmeister](#), [MindMup](#), [Coggle](#), [Canva](#). Other tools you might consider using to ideate are [Padlet](#) and [Prezi](#). Or you might simply choose to sketch it out on paper.

[Mind mapping Example](#)



“[MindMap Guidelines](#)” by [Nicoguaro](#) is licensed under [CC-BY-SA](#)



Choosing a Technology Tool

Next comes the work of selecting a technology to help you build a "creation" that will help you address the challenges your learners are having in understanding a concept, or any other challenge you have identified.

You can start by looking at the list of common tools and approaches in this [“How To’s section”](#) which walks users through a DIY approach to common tool integration.

You may also want to look at [The Centre for Learning and Performance Technologies Tool Directory](#) which contains over 1,000 entries categorised in four main areas. Look for the [Top 200 Tools for Learning 2017](#). The [Common Sense Education Digital Tools](#), geared toward K-12, is also a handy resource for all educators and includes the ability to filter searches by a variety of criteria.

Take some time to check these sites out and consider which could fulfill the requirements you have identified as your learner challenge. in your learner challenge mind map. (Warning: This can take time as you may find yourself down the Internet rabbit hole!)

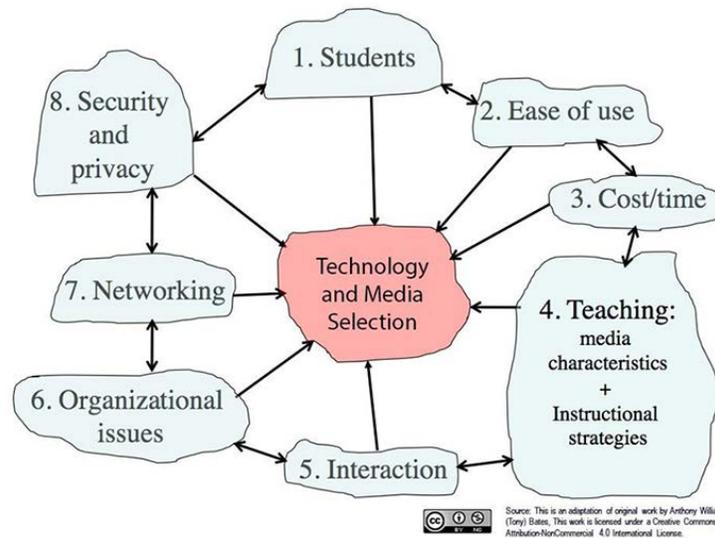
You may find it helpful to use the metacognitive technique called "Think Aloud" as you investigate various tools. With this technique, you literally think out loud and record your thoughts as you explore (e.g., "The interface is nicely designed, but I don't see the ability for peer comments, and that's an important feature I'll need."). Recording your thoughts by using a microphone and software like Audacity allows you to focus on exploring the tool without interrupting your thinking by taking notes.

Ideally, you already had a tool in mind, and find that it fulfills all your, and your learner's needs. Or, it may take more time and some trial and error before you find a tool that is suitable. Don't get disheartened – refer to the sites referenced in this section earlier for inspiration.

Using the SECTIONS Model to Evaluate a Tool

Now that you have selected the technology that you will integrate into your teaching and learning, it is good practice to assess its fit beyond your learner challenge definition, to include other factors around support requirements. A helpful framework to guide this assessment is the SECTIONS model, developed by Tony Bates and shown here. It is one of many frameworks that can help you make effective decisions about the choice and use of technology (and media) for teaching and learning.

It is important to note that while the design thinking around technology integration is learner-focused, it is also important to ensure that the tool you've selected is a good fit for your students, course, program and institution and the SECTIONS model can help with this.



[The SECTIONS Model](#)” by Anthony William Bates is licensed under [CC-BY-NC](#)

[Chapter 8 of the open textbook Teaching in a Digital Age](#), by the SECTIONS developer and author Dr. Tony Bates, provides a full description of the model.

Here is a [SECTIONS planning framework out of UBC](#) which may help provide additional details and guidance on its use.

After you’ve read a bit about the model, try your hand at the following quiz by matching the criteria to their definition and scope.

<https://quizlet.com/216075686/match>

Extend Activity



Part 1

Map your chosen technology to the SECTIONS model through our aptly-named [“Map your technology to the SECTIONS model”](#) exercise.



Once you have completed all of the steps, choose the “Export Text” button to save your work.

Refine your idea



Based on your consideration of the SECTIONS model, you may need to refine the ideas you’ve formed around your planned technology use. Take time to do so before moving on to the prototyping step.

Part 2

After you’ve selected your technology, circle back to our [Learner Challenge Bank](#) Padlet and your earlier post that described your challenge. This time, add a post that identifies what technology you selected and connect the two posts together. Full instructions are in the description of the Padlet.

Prototype

Now it’s time to try out your chosen technology and design a prototype of your Technology-Enabled Learning Activity solution. Prototyping can sound daunting if you think of it in relation to engineering or lab work. But at its basic level, it involves putting a small tangible creation in front of your users instead of talking about abstract ideas. It can result in much richer feedback from the people that matter to you and your work. The basic steps are:

- Design
- Share
- Refine

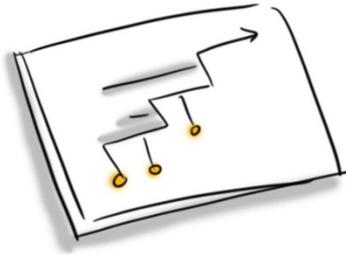
Experimentation and play are essential for getting to know a tool and discovering what works well within a design. But when it comes creating something entirely new, it’s best to approach it with a well-thought-out vision of what you want the result to be.

If you select a technology from one of the resources included in one of [The How To’s](#), you will have access to its guided lessons and activities that will help you get started. If you decide to explore new terrain through a tool or technology from another list you will have to do a bit more planning.



The [Technology-Enabled Learning Activity Planning Document](#) is an example of one way to map out the planning process, but you might want to develop your own planning notes based on your preferences.

Design



Now that you've mapped out a plan, how do you actually want to prototype? We suggest one of two ways:

- Dig in to the Tool
- Use Creative Materials

Dig in to the Tool

If you decide to take the leap and start working with the tool, keep in mind that this requires dedicated time. If it's your first time using the tool, go through any tutorials provided, or search for some online – undoubtedly there are others that you can learn from. Also reassure yourself that this prototype does not need to solve the learner challenge entirely – perhaps it is just one aspect of the challenge that you've uncovered. Start small. That's the whole idea behind prototyping – you create what is known as the “minimal viable product”.

Prototype with Post-it notes

You can always take a cautionary, but equally valuable approach by mocking up your prototype using post-it notes. Post-it notes can help you storyboard and prioritize the sequence of interactions that support the use of your technology. You can add steps in and move them around, and ultimately end up with a series of instructions that can help frame the activity for your learner.

Share

Share your creation activity with peers or learners and obtain feedback. Ask them the following:

- What worked?
- What didn't work?
- What questions do you have?



- Do you have any ideas for me to consider?

You may want to use the [Design thinking Feedback grid pdf form](#) – it's fillable or you can print it out.

Refine

Based on their responses, you can now take the necessary steps to synthesize that feedback in order to refine your technology-enabled learning activity. creation. And it's important to recognize that often it isn't practical or beneficial to fix every perceived issue from your users. You might want to take the feedback received, and prioritize it based on feasibility and how it works, to evolve the best solution for your learner challenge.



Connect to Your Curriculum

This exercise has you thinking about how you will integrate technology into your curriculum, now it's time to think about how you will, 'integrate this integration'. Just as an architect would envision users of a new building walking through it, you need to craft an implementation plan as to how your learners will progress through your tech creation as an activity technology-enabled learning activity.

You might want to storyboard the process, or create a checklist. Either way, map and clearly sequence the instructions you will give your learners. Make sure to indicate how the different elements fit together and link the activity to your learning outcomes. If you get to this point and cannot connect your technology creation/activity back to your course learning outcomes, it is cause for attention.

Extend Activity



1. Sharing your technology-enabled learning activity

- Write a reflective blog post that includes an explanation of the context and reasons why you choose to use a technology-enabled solution for your learning challenge. Include your process for empathizing and defining your learner challenge, the steps you took in



ideating and prototyping your technology creation as well as your planned implementation. Make sure to include a link or screenshot of the technology creation in your blog.

- Share a link to your blog and/or your creation via Twitter to [@OntarioExtend](#) and the #oextend hashtag.

2. Tool Exploration

As you have journeyed through the steps of the Technologist Module, you may have discovered some new tools, tips and tricks along the way. Is there a resource that should be added to the resources section of this module? Add it to our [EdTech Tools Padlet](#).

Pick a tool from The Great Tool List and send a Tweet to [@OntarioExtend](#) describing how it could be used in a teaching context.

Module Checklist



I have:

- Assessed my digital literacy for teaching.
- Identified a challenge for my learners.
- Mind-mapped and selected an educational technology to help address this challenge.
- Developed, obtained feedback and refined a prototype of my technology-enabled learning activity.
- Connected the technology to my curriculum.
- Shared my technology creation enabled learning activity.
- Reflected on the design thinking approach used to create a technology-enabled activity solution for a learning challenge.

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