FLO MicroCourse

From Digital Literacy to Digital Fluency

Student book

*You will find the same content here as online.

Contents

Start Here

Why this course was created?

This course came about from my years of teaching with and supporting instructors who are hesitant to try new educational tools to help facilitate learning in their classrooms. I was asking myself why some instructors were open to trying new educational tools while others would not. Through conversation, I found that it was because of self-efficacy, otherwise known as mindset, or the "can-do" attitude, towards educational tools. In other words, we have to reflect on our own mindset before we can advance our current level of digital literacy to become digitally fluent.

Ida K.R. and Ove E. Hatlevik from the University of Oslo's Department of Teacher Education and School Research discuss ICT (information and Communication Technology), or "educational tools", and found that "self-efficacy beliefs regarding ICT instruction, as research in self-efficacy in other domains has demonstrated, are likely to influence the effort they invest in planning for and delivering ICT instruction, their persistence with students who struggle and their resilience in the face of the inevitable snafus and breakdowns that accompany any pedagogical innovation, and even more so an innovation involving the use of technology." (Hatlevik & Hatlevik, 2018, p. 2) In other words, all instructors experience challenges with educational tools in their classroom, but it is how these challenges affect our progress. Maintaining a positive can-do mindset, or self-efficacy with these tools can lead to digital fluency.

Also be aware that "educational technology encourages the development of stress and anxiety in teachers…[T]here has been a lack of studies that analyze the different strategies to control these feelings among teachers, feelings that can have an impact on the exhaustion of their students." (Fernández-Batanero, Román-Graván, Reyes-Rebollo, & Montenegro-Rueda, 2021, p. 10). The researchers also mention that the use of educational tools can cause an "increase in anxiety and stress levels, as well as symptoms of exhaustion or depression in teachers, results that are consistent with numerous other studies" (2021, p. 10). Comfort levels with using educational technology vary greatly between instructors so take small steps towards your goals of becoming digitally fluent. But, do take those steps.

Why is it so important now to improve your digital literacy? The return to campus has demanded more flexibility in the way courses are offered to students. "Technology, whether synchronous technologies for audio, or videoconferencing, or asynchronous technologies for anywhere, anytime learning, can support the work of teachers in enabling learning." (What's next for Teaching Online in Colleges and Universities in Ontario?, 2020). Many courses are being offered in a hybrid format while others are being delivered in the hyflex format. Both formats require a high degree of comfort with technology to adjust to the way courses are being offered. Using educational tools can make it possible for students to enjoy a similar learning experience whether online or face-to-face and improving your digital literacy will help you achieve these classroom learning experiences.

This FLO course looks at how our cognitive biases might negatively affect our digitally literacy and how we as instructors can recognize these biases so we can better manage them. When we do that, we can improve our level of openness to seek out, assess, and adopt educational tools in the hybrid and online classroom that can help facilitate learning.

Terminology

What are "educational tools" in the context of this FLO

I am using the term "educational tools" to refer to software applications that support learning. I feel the term "app" refers to the simple application software we download on our phones, which is very limiting to the range of educational potential. "Educational tools" can also include hardware such as wireless presenters, document cameras, smartboards, etc. but this FLO course is limited to software making it more accessible to a much wider audience.

Clarifying "Digital Literacy"

The *Handbook of Research on Literacy and Digital Technology Integration in Teacher Education* discusses the definition of "digital literacy": "The definition as to what constitutes digital literacy is a contested area and there is no one set definition" (Keengwe & Onchwari, 2020, p. 30). Therefore, the define of "digital fluency", or "Being Digital" is:

> Students and staff will use digital technologies effectively to improve the flexibility, efficiency and timeliness of communication, administration and facilitation of relevant learning tasks. Traditional learning methods will be supported, supplemented or replaced by the most effective digital resources, content and tools and new opportunities for engaging students with the global community (Fox, 2019, p. 10).

There are literally over 100 competencies that fall under the label "digital literacy" (BC Ministry of Education, 2021). This FLO course focuses on those that will help us facilitate learning with educational tools, which are:

1. Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs.
2. Select digital tools or resources to use for a real-world task and justify the selection based on their efficiency and effectiveness.
3. Exploit technological potentials in order to represent and solve problems.
4. Transfer current knowledge to learning new technologies.
5. Learn how to work with any new digital technology by trying it out, and using its internal guidance and help.
6. Adapt smoothly to new technology, and learn how to use them, and integrate them into his/her environment.

Learning outcome

By the end of this FLO course, you will have a better understanding of your approach to learning and adopting educational tools, feel more confident in adapting them to facilitate learning, and improve your digitally fluency with regards to educational tools.

How can educational tools enhance learning?

Please review the resources in the recommended readings to answer this question.

When do we know we are digitally fluent?

To be digitally fluent would be similar to how comfortable we are with wrist watches (Jones & Hafner, 2021, p. 4). Before mobile telephones with built-in digital timekeepers became so pervasive, few technologies seemed more like 'extensions' of our bodies than wristwatches. Sometimes people even think of watches as extensions of their minds. Consider the following conversation: A: Excuse me, do you know what time it is? B: Sure (looks at his watch). It's 4:15. In this example, B acted as if the time was in their brain and not in the watch. The watch and the brain are like one.

The watch example is the way educational tools can be viewed once digital fluency is achieved. Using [Jamboard](), for example will be like using chalk on a chalkboard. Digital tools will simply be an extension of your hand.

These days, becoming digitally fluent is more about overcoming psychological barriers than it is about overcoming technological barriers, which is why we will include in this FLO course a module on cognitive bias.

5 steps in 5 days overview

This FLO will cover a step a day. Review each step/day:

Step 1: Create and reflect

We kick off with an activity. This activity asks you to learn a new educational tool and reflect on your mindset before, during, and after creating an activity or ILO (instructional learning object) using a recommended set of educational tools.

Step 2: Read, reflect, and write

We look at our cognitive biases that may hamper our ability to become digitally fluent. We will meet synchronously today where a guest speaker will join us to talk about his journey towards digital fluency.

Step 3: Overcoming your cognitive bias(es)

Day 3 looks at how we can overcome any biases that are uncovered and brought to our consciousness.

Step 4: Assessing digital tools

We will use a digital tool assessment rubric to help find out if an educational tool will do what you expect it will do. Your findings (thumbs up or down) will be shared in a blog or a vlog for others to benefit from.

Step 5: Create and reflect

We conclude by doing activity 1 again to see how you have harnessed any biases when trying new educational tools. It is very difficult to become digitally fluent with an I-can't-do-it mindset.

Day 1: Assess your current mindset when adopting a new digital tool

Activity 1: Examining your current approach to adopting educational tools

Let's begin by examining just how we approach new technology and closely analyzing how we feel while learning a new educational tool. We will uncover any biases that we can later harness or let go of to allow us to become more open and welcoming to new educational tools. When we adopt this new mindset towards new technologies, we become more digitally literate because we become more open to discovery and exploration and less critical with minor setbacks.

Instructions

Step 1

Select an educational tool that you are unfamiliar with from our *Recommend an educational technology to this FLO community* Padlet in the Start Here section, or from the list below . Remember, **you do not have to present any of your content, you are just asked to reflect on the process by noting down your thoughts in Step 2.**

- Possible educational tools that you can choose from: Canva (i.e. present an assignment instruction using Canva)
- Mentimeter (i.e., create two activities in slides, such as a word cloud and a Likert scale poll)
- Lumi (H5P) (i.e. Make a fill-in-the-blank activity)

Familiar with the above or looking for a challenge? Try one of these:

- peerScholar https://app.peerscholar.com/Login
- WeVu https://www.wevu.video/free-signup/
- Canvas LMS (Instructure) https://canvas.instructure.com/login/canvas

The objective is to set up a learning activity. For example, in peerScholar, set up a self and peer assessment for students to submit a research assignment. For WeVu, set up an item where students can upload a short presentation so their peers can comment on them. In the Canva LMS, set up the shell of a course and create one discussion forum.

Step 2

Write down the learning process as you complete Step 1. Use these questions to guide your reflective process, or review more questions in this reflective toolbox.

1. Pre-Reflective Questions
   a. What do I hope to achieve?
   b. What do I know that might help me achieve this?
   c. How will I know if I'm not achieving this?
   d. What am I feeling?
   e. How might these feelings influence my practice?
2. Post-reflective Questions
   a. What did I learn?
   b. How, specifically, did I learn it?
   c. Why does this learning matter, why is it important?
   d. Were there other ways I could have reacted/thought/felt?

Step 3

Log your reflective answers in the class journal "Reflective journal for Activity 1".

Does this experience remind you of a similar time you tried a new digital tool for learning? Did this experience reinforce your bias to using digital tools in the classroom? For example, if the past experience was neutral then did this experience reinforce your bias that adopted digital tools is neither exciting or stressful?

In Day 2, we will connect your reflections with some common cognitive biases. Bringing these biases to the forefront can help you better understand how you can improve your digital literacy by adopting new educational tools into your classroom.

Day 2: Outlining relevant cognitive bias

Now that you have changed your mindset to a can-do mind set and want to feel more comfortable in adopting new methods of delivery content and engaging students, let us now look at another barrier to become digitally fluent: Cognitive Bias.

Keep in mind the biases outlined below are inherit in all of us. These are being mentioned because they must be addressed so that we can overcome these psychological barriers that prevent us from expanding our set of digital tools to enhance learning in your classroom. The biases below directly impact the ability to comfortably explore, assess, try out, and adopt new technologies into teaching.

Biases that can impede or assist in adoption

Many biases affect our approach to learning new technologies, or even using existing ones, which is why we must take time to reflect on past experiences to bring to the surface the biases we have for or against technologies before we can move on.

Review some common biases (Cherry, 2021) that may have a direct impact on becoming more digitally literate.

Projection bias

The projection bias is a self-forecasting error, where we overestimate how much our future selves will share the same beliefs, values and behaviors as our current selves, causing us to make short-sighted decisions.

Be mindful about this bias when considering new apps. Why are you feeling hesitant? Was it a flashback to a failed attempt at using a Kahoot? Can you foresee yourself in the same awkward position? Visualize how the activity will run when the digital tool you choose performs flawlessly. How does that feel? Visualize a positive response of your students. Are you getting eager to try it out? Don't you wish the class was sooner than later?

The pessimism bias

The pessimism bias refers to the tendency to overestimate the likelihood of negative events while underestimating the likelihood of positive events. This attitude of expecting the worst is a prominent cognitive feature of depression and can have considerable ramifications on both a personal and societal level.

Retrospective impact bias

People display retrospective impact bias when they overestimate the intensity and duration of an emotional reaction to a past event. This can lead to errors in decision making because it can lead people overestimating how an event positively or negatively impacts their wellbeing.

The Impact Bias

Impact bias, a cognitive bias, is the tendency to overestimate the intensity or the duration of future emotions and states of feeling. This overestimation can occur for both positive and negative feeling states.

Now that you have reflected on a past event, let's look at the future. What is the worst that can happen? What is the worst outcome of a failed activity?

Outcome bias

Outcome bias arises when a decision is based on the outcome of previous events, without regard to how the past events developed. Outcome bias does not involve analysis of factors that lead to a previous event, and instead de-emphasizes the events preceding the outcomes and overemphasizes the outcome.

Rosy retrospection

Rosy retrospection refers to our tendency to recall the past more fondly than the present, all else being equal. It is a cognitive bias that runs parallel with the concept of nostalgia, though the latter does not always directly imply a biased recollection.

Use a little rosy retrospection as you reflect on a time you incorporated a new educational tool into your teaching. Remember how well it went? Remember how you wanted to tweak it to make it even better for your next group of students?

Availability Heuristic bias

The availability heuristic
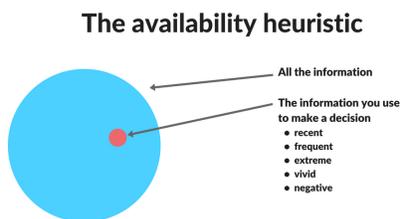
"We tend to overestimate how likely something is to happen based on how easily we can remember the same thing happening previously." If students couldn't give their responses to a Mentimeter poll once then we tend to believe that technology is always sending my class off the rails. Because the memory of the failed attempt is such a powerful memory it is the first to come mind. Technology will not be available when we need it.

Activity 2: Check and reflect on your biases

Activity 2 asks you to reflect on your experience in Activity 1 and connect biases to that experience. For example, if you wrote that you felt a anxious that the activity you have created might not be well received by your students, you might have outcome bias. Outcome bias may exist because a class held in Collaborate Ultra had constant disruptions because of connection issues and the only option was to cut the class short. In reality however, many instructors experienced problems in synchronous classes because online courses went up 1800% in the first months of the pandemic and servers could not handle the traffic. It was not in the lack of preparation, it was something beyond our control. Feel confident with educational technology to continue your journey towards digital fluency.

Choose a bias that you feel may be *hamper* your ability to become digitally fluent and at least one that you feel may *assist* you in your journey. Include:

- What the bias is
- Describe the experience that connects to the bias
- How might you overcome these bias(es)?

Record these in the course journal by adding a new topic, **"cognitive bias(es) that help/hinder my journey to digital fluency"**

Synchronous session (Day 2 Tuesday)

We will meet online to discuss our progress and review the content we have covered and what how we will conclude this FLO.

Activities

List of activities

1. Do you learn by how to video, (show the results in the synchronous session)
2. Mentimeter scale of preference and efficacy. If available, I prefer to use the follow
   1. Preference and efficacy x y graph
      - How-to videos
      - PDF tutorial
      - Workshops
      - 1 on 1s
      - Learn by doing

Day 3: Four ways to overcome your biases

Here is a list of four methods that you can use to overcome your own biases.

1. *Reflect on past decisions*
    If you've been in a similar situation before, you can reflect on the outcomes of those previous decisions to learn how to overcome your biases. An example of this is budgeting. We tend to underestimate how much money we need to budget for certain areas of our life. However, you can learn how much money to budget by tracking your expenditure for the last few months. Using this information from the past, you can better predict how much money you'll need for different financial categories in the future.

2. *Include external viewpoints*
    There is some evidence that we make better decisions and negotiations when we consult with other people who are objective, such as mediators and facilitators (Caputo, 2016). Therefore, before making a decision, talk to other people to consider different viewpoints and have your own views challenged. Importantly, other people might spot your own cognitive biases.

3. *Challenge your viewpoints*
    When making a decision, try to see the weaknesses in your thinking regardless of how small, unlikely, or inconsequential these weaknesses might seem. You can be more confident in your decision if it withstands serious, critical scrutiny.

4. *Do not make decisions under pressure*
    A final way to protect yourself from relying on your cognitive biases is to avoid making any decisions under time pressure. Although it might not feel like it, there are very few instances when you need to make a decision immediately. Here are some tips for making a decision that can have substantial consequences:

    o   Take the necessary time to ruminate.
    o   List the pros and cons.
    o   Talk to friends or family members for advice (but remember that they may have their own biases).
    o   Try to poke holes in your reasoning.

Activity 3:

Write an email to your future self explaining any bias(es) that you have found that you have. Write a paragraph explain how you will reduce the bias(es) following the four methods above.

Ask yourself these questions: How your own progress is going? What tangible evidence you have to back up your claims? What more has to be done?

Use the delay delivery feature of your email to send the message in six months.

Day 4: How to assess an educational tool for fit

Now that we have checked our biases and are we have adjusted or at least become more aware of our mindset we can begin assess educational tools to add to your toolkit. Once you find a potential tool, it will be assessed for how well it can help support your learning activity.

Activity 4: Assess a tool and share your results in a blog

Now that we have checked our biases and are we have adjusted or at least become more aware of our mindset we can begin assess educational tools to add to your toolkit. Once you find a potential tool, it will be assessed for how well it can help support your learning activity.

Instructions

1. Add a new topic in this blog/vlog.
2. Outline an activity you would like to do in your online, F2F, or hybrid course.
3. Describe an educational tool that will help facilitate that activity.
4. Use the attached "Rubric for eLearning Tool Evaluation" rubric to help you assess the merit of this tool.
5. Present your final choice here in a 200-word blog/vlog explaining your rationale. Will you use it? Why or why not?

Day 5: Assess your new relationship with digital tools

Today we will go through Activity 1 again only this time you have to advantage of being more aware of your mindset going into the activity. You are better aware of your bias(es) (Day 2) and now know have some techniques to harness the biases (Day 3) so new educational tools can be approached with a mindset for success.

Activity 5: Activity 1 Take 2 – Assess your new mindset when adopting a new digital tool

Let's conclude this FLO by examining how you have approached new educational tools and reflect on your current mindset. How has our self-efficacy improved? Let's continue to work on any biases that can limit your journey towards digital fluency. Remember, when we a can-do mindset towards new technologies we become more digitally literate because we become more open to discovery and exploration and less critical of minor setbacks.

Complete Activity 1 again but use a different educational tool and you do not need to post any of your reflections.

Instructions

Step 1

Select an educational tool from the list below that you are unfamiliar with. If you have used all of them then select another educational tool on your own. Remember, **you do not have to present any of your content, you just have to reflect on the process by noting down your thoughts in Step 2.**

- Canva (i.e. present an assignment instruction using Canva)
- Mentimeter (i.e., create two activities in slides, such as a word cloud and a Likert scale poll)
- Lumi (H5P) (i.e. Make a fill-in-the-blank activity)

Familiar with the above or looking for a challenge? Try one of these:

- peerScholar https://app.peerscholar.com/Login
- WeVu https://www.wevu.video/free-signup/
- Canvas LMS (Instructure) https://canvas.instructure.com/login/canvas

The objective again is to set up a learning activity like you did in activity 1.

Step 2

Write down the learning process as you complete Step 1. Use these questions to guide your reflective process, or review more questions in this reflective toolbox.

1. Pre-Reflective Questions
    a. What do I hope to achieve?
    b. What do I know that might help me achieve this?
    c. How will I know if I'm not achieving this?
    d. What am I feeling?
    e. How might these feelings influence my practice?
2. Post-reflective Questions
    a. What did I learn?

        b.   How, specifically, did I learn it?
        c.   Why does this learning matter, why is it important?
        d.   Were there other ways I could have reacted/thought/felt?

Step 3

Smile and say "I now have a can-do mindset and I'm ready to embrace new educational tools for the benefit of my students".

Recommended Readings

SAMR Model: A Powerful Model for Understanding Good Tech Integration
https://www.edutopia.org/article/powerful-model-understanding-good-tech-integration

A little about modern software
https://hkkseducation.com/2021/08/15/a-little-about-modern-software/

Digital Fluency at UMW – Further Resources
http://umwdtlt.com/digital-fluency-at-umw-further-resources/

Arrested (Professional) Development
https://modernlearners.com/arrested-professional-development/

An Analysis of Digital Education in Canada in 2017-2019
http://www.irrodl.org/index.php/irrodl/article/view/5108/5501

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