Fostering Student Success in Online Courses

**Mayi Arcellana-Panlilio, Patti Dyjur
and Alysia C. Wright** | Editors
TEACHING ACADEMY

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UNIVERSITY OF CALGARY | TEACHING ACADEMY

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About the
Teaching Academy

The Teaching Academy is a community of instructors who have received a University of Calgary Teaching Award in recognition of their exemplary contributions to teaching and learning. The members of the Teaching Academy form a dynamic community of teaching and learning scholars from different ranks and disciplinary backgrounds, positioned to engage in and cultivate educational leadership at the University of Calgary. The collective depth and diversity of backgrounds and experiences allow engagement with the entire breadth of the teaching and learning community on campus, encouraging the free flow of ideas in a vibrant and dynamic network of educators and educational innovators. The Teaching Academy operates as a working group of professionals interested in supporting the development of teaching and learning expertise at the University of Calgary.

As demonstrated in this guide, the Teaching Academy is committed to communicating the importance of engaging and inclusive online courses that offer students positive and productive learning environments.

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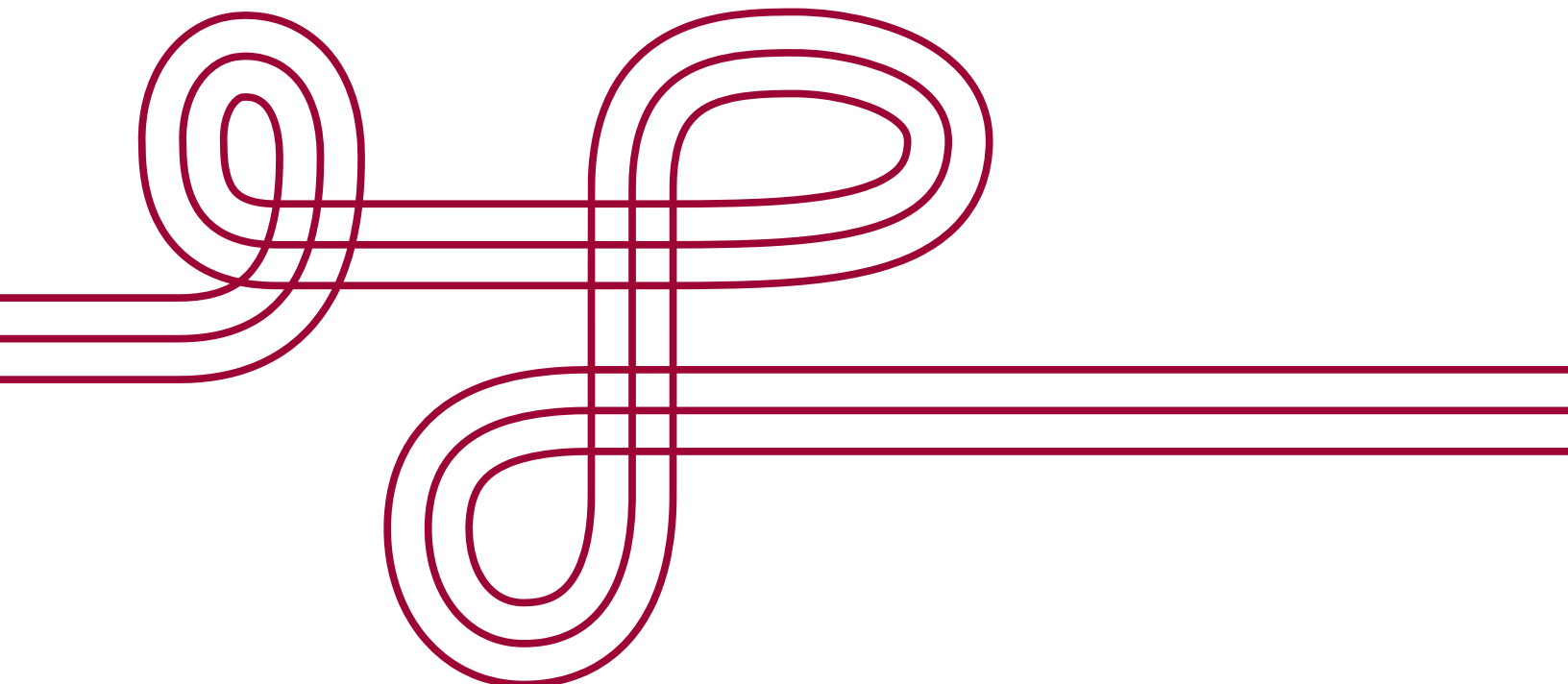
Table of Contents

Foreword

As Senior Director of the Taylor Institute of Teaching and Learning (TI), it is an honour to introduce readers to this TI Guide. The pandemic had a disruptive impact on teaching and learning in higher education. For many, the transition to online learning presented enormous challenges, individually and collectively. Many of us sought immediate strategies to support student learning and success in an online context. We experienced many successes and failures along the way. This Guide provides an inspiring collection of scholarly reflections and approaches to supporting meaningful course learning opportunities for students and postsecondary educators, in online environments.

The Teaching Academy is a group of dedicated educational leaders who have received a University of Calgary Teaching Award. They are committed to sharing back their expertise for the broader benefit of the teaching and learning community. Through this guide, they share hundreds of strategies and approaches for fostering success in online courses. Each chapter is grounded in their wisdom of experience and research-informed practice, leaving readers with practical strategies and recommendations for strengthening their approaches to teaching and learning in their own local context. They've shared generously on a variety of topics in online learning such as: feedback, lesson planning, flourishing and well-being, ePortfolios, assessments, flipped classrooms, course-based research, large-class enrolments, and experiential learning.

As we continue to reflect upon our learnings from the pandemic, this Guide provides an artefact of our healing and growth. I encourage you to explore topics that most pique your interest and resonate with your experiences. This is a resource that you will come back to time and again. Most importantly, as an open-access resource, I encourage you to "pay it forward" by passing this Guide onto others, and sharing, using and adapting the strategies captured within!

Happy learning,

Dr. Natasha Kenny, PhD
Senior Director, Taylor Institute for Teaching and Learning
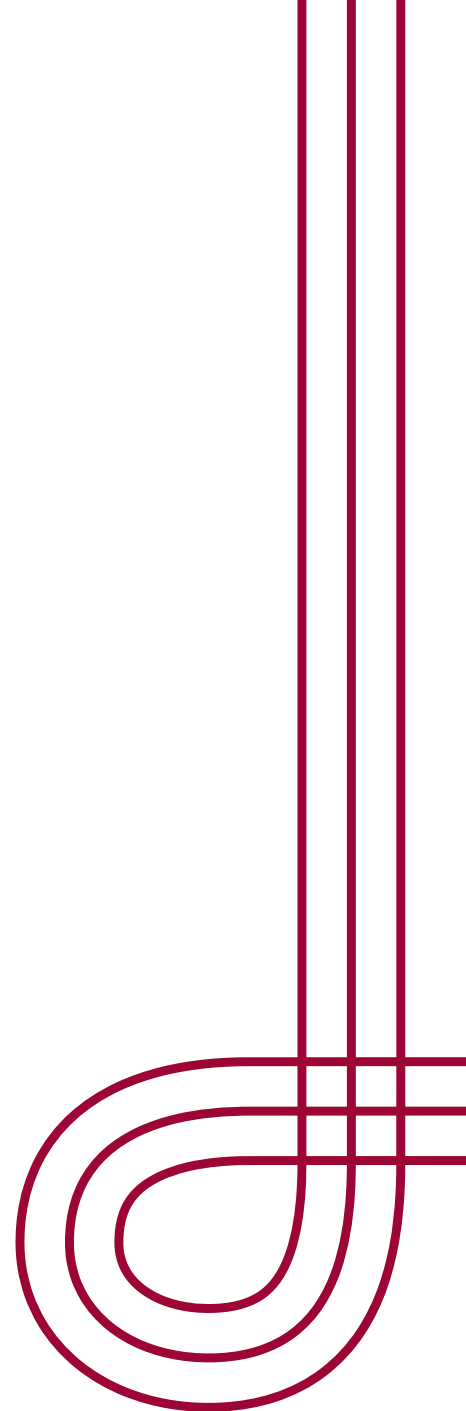
Introduction

Fostering Student Success in Online Learning is the Teaching Academy's third resource development initiative, following The Mentorship Guide for Teaching and Learning (2019) and Incorporating Universal Design for Learning in Disciplinary Contexts in Higher Education (2021). Developing these guides aligns with the Teaching Academy's purpose of supporting teaching and learning on campus, and given their availability as free, downloadable documents, these guides have the potential for farther reach and impact beyond the University of Calgary.

The call for chapter proposals for this guide went out in the fall term of 2021, after the University had completed a full academic year and some, of teaching online, a modality that became necessary University-wide because of the Covid pandemic. In September 2021, we were cautiously optimistic that things were coming back to normal, with students set to return to campus and appropriate safety measures in place. However, if the 2021-2022 academic year has taught us anything, it has made us realize that we have a new normal, where we might have to change modes of delivery on short notice, similar to the 3-day turn around we had in March 2020 to shift our winter courses to online teaching. And we were tested almost immediately, because in January 2022, we were teaching online again, then in-person from March, a near mirror image of the winter term of 2020.

These past two years have showcased our collective ability to trouble-shoot and problem-solve, and to respond to an emergency. But as we were brainstorming and reviewing ideas, we were convinced that this guide was not going to be about reacting to a crisis but focus instead on building on what we have learned to become intentional, pro-active, and ready. Thus, this guide, starting from its title of Fostering Student Success in Online Learning, is framed on an appreciative inquiry approach to online learning.

While appreciative inquiry's roots are in the business management world (Cooperrider and Whitney, 2001), with a so-called 4-D cycle of Discovery, Dream, Design, and Destiny/Delivery (Figure 1), it is applied in teaching and learning as a lens that focuses on discovering strengths and what works, on dreaming what might be, designing one's course accordingly, and delivering on those plans.
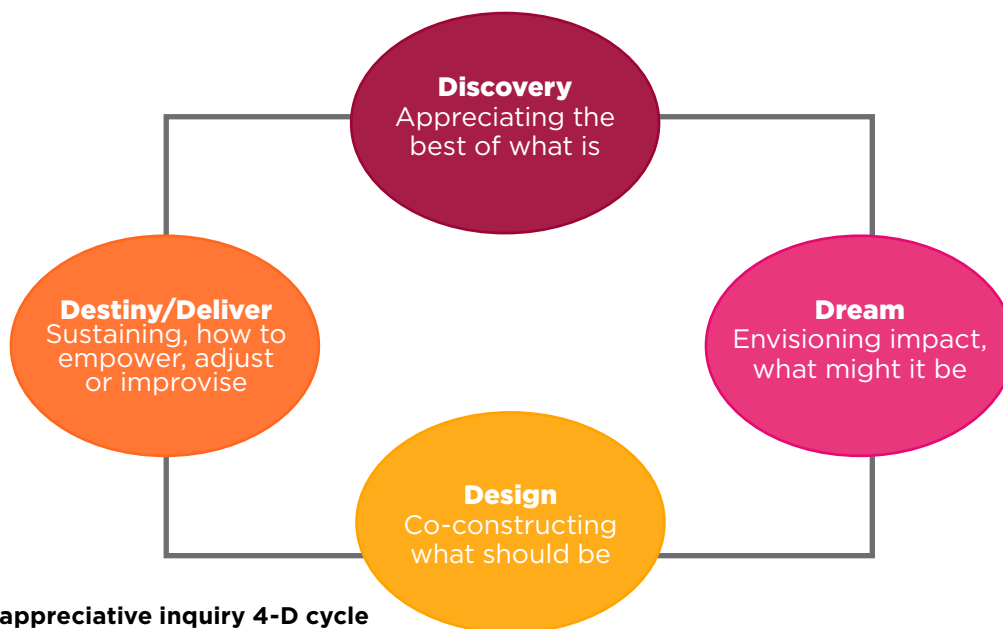

Figure 1: The appreciative inquiry 4-D cycle (adapted from Cooperridge and Whitney 2001)

Bloom, Hutson, He, and Konkle (2013) present the appreciative education framework as "an intentional and positive approach to bettering educational enterprises by focusing on the strengths and potential of individuals and organizations to accomplish co-created goals" (p. 6).

Appreciative education adds two Ds to bookend the four Ds of appreciative inquiry: Disarm, which recognizes power dynamics and the need for safe environments; and stretching adherence to the D-alliteration a bit, Don't Settle, which is not to rest but to keep looking for better ways to accomplish goals (Bloom et al., 2013).

After a year-long process of vetting of proposals, initial editorial review of chapters, peer review, and final editorial reading, with the requisite writing, submission, and revision of drafts in between, you have before you the Teaching Academy's resource guide, entitled Fostering Student Success in Online Learning.

The Guide contains nine chapters contributed by members of the Teaching Academy from across disciplines involved in undergraduate and/or graduate instruction, writing solo or with collaborators, to highlight an aspect of their teaching that leverages the online environment to enhance student learning. Each of these chapters offers sage, pragmatic descriptions of course contexts, design considerations, and implementation, for online assessments (Chapter 1, 4), for innovative learning activities (Chapter 2, 6), for flexible course design (Chapter 5, 7), for engaging large classes (Chapter 8), for facilitating group work (Chapter 9), and for intentionally addressing the need for students to flourish (Chapter 3). Importantly, for the reader, each chapter shares the wisdom of practice of the author/s, discussing implications of use and giving concrete recommendations for those who are thinking of applying similar strategies.

In reading through the chapters, you will see courses that have been customarily taught online alongside those that were transitioned from in-person delivery. The thread of an appreciative education runs through the chapters as authors discover the best

of what was, dream of what could be in the online environment, design teaching and learning activities, assessments, and environments, to construct what should be, deliver on those dreams and designs, and cycling back after an iteration of online teaching, appreciate the best of what is and should continue.

As with every Guide in this series, it is not imperative that you should read every chapter. Depending on your own need, or to use the appreciative lens, vision, perusing the Table of Contents can tell you right away where to look first. To facilitate parsing content, the guide uses a consistent format that gives the author/s, the field or discipline, course level, and key words, as well as predictable headings and pithy text boxes.

I invite readers to venture to read other chapters, and to read them with that appreciative mindset of discovery. As an editor of this Guide, I have learned so much by engaging in this work and finding precious nuggets of wisdom shared from a context quite removed from my own.

Finally, I must acknowledge that this Guide would not have come to fruition without the dedication and hard work of members of the Teaching Academy and their collaborators, who offered their time and expertise in writing chapters, reading and providing feedback to their peers, revising, and producing a worthy articulation of their wisdom of practice; my co-editors, Teaching Academy Co-Lead, Patti Dyjur, and a most welcome Alysia Wright, who was brought on board expressly for this Guide given her experience in online learning; and The Taylor institute for Teaching and Learning, for their ongoing support, guidance, and encouragement through the entire process, from ideating the Guide to rolling out the final product.

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Efficient Online Grading With Feedback

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Field/Discipline:
Public Health

Course Level:
Undergraduate

Key Words:
feedback; student assessment; marking; learning management technology

Learning Context

This chapter aims to describe approaches to grading using on-line strategies to reduce workload on instructors, while not compromising the provision of quality feedback to students. Practical examples of how to leverage online tools and other strategies will be highlighted within the context of a required first-year undergraduate health science course in an honours program. Introduction to Health & Society (HSOC 201) is an introduction to health in society and public health, with an average enrolment of 50 students. However, I use these strategies in courses ranging from first to fourth year level and they are appropriate across disciplinary boundaries.

Fostering student success through quality feedback and efficient grading

Grading is an important part of any credit course and requires time, effort and organization. Efficient grading begins at the course design stage with considerations of the number of assessments, how

assessments work together, types and variety of assessments, and a balance between assessment of learning objectives with a reasonable workload, for both students and the instructor (Boud & Falchikov, 2007; Timmis et al., 2016). A deeper discussion of assessment planning is beyond the scope of this chapter; however, it is important to note as it lays the foundation for the general grading experience within any given course.

This chapter will begin with a discussion of grading basics that focus on relevant functionalities within Desire2Learn (D2L), the Learning Management System (LMS) used at our institution, including the efficient use of the Dropbox feature and strategies for managing student submissions. This will be followed by an exploration of alternative formats for providing feedback, and the use of an online gradebook as a tool to encourage student self-monitoring. Three key recommendations for improving grading efficiency in the online environment will be presented.

Leveraging Desire2Learn (D2L) Dropbox and features for submission management

The pivot to remote learning in response to the COVID-19 pandemic has forced instructors who may have previously relied on hard copy student submissions to shift to digital submissions. As an alternative, email may seem like a natural modality for receiving student assignments; after all it is how we manage most of our other digital interactions.

> **Grading and feedback are an important form of student-instructor interaction. Efficient grading can, and should, be done without compromising the provision of quality feedback to students.**

However, there are a number of reasons why email overcomplicates this process, including having to keep track of submission emails, the need for constant monitoring and the awkward situations when assignments are handed in late. Even for a small class, this can become cumbersome. This is where the use of the file submission feature within a learning management system can be effective.

Managing Student Submissions

A learning management system is a software application that provides the framework that can be used to organize and handle all aspects of the learning process. At our institution, the LMS is Desire2Learn (D2L) Brightspace. The D2L dropbox feature is a simple functionality for managing student submissions that overcomes many of the limitations of using email. It allows instructors to create a folder for each assignment, tracks when submission are received, and can easily be searched to identify who has and has not submitted an assignment. The dropbox allows for submission of a number of file types including common video and image formats, and instructors can set the acceptable file formats, which makes it useful for a wide range of assessment activities. It also accommodates group projects, where all members of the group have access to the same dropbox folder for submission. The dropbox folder can be set to close at a specific date and time so late submissions are not accepted, but also allows for the instructor to set special access to students for whom an extension has been granted (with a new closing date and time). Alternatively, the dropbox can be left open to late submission and the instructor can take charge of checking timestamps for managing penalties for late submission; however, this requires more active e monitoring by the instructor and may be less efficient for some. In addition, students receive a confirmation via email that their submission has been successfully uploaded with a date and time stamp. Overall, the use of dropbox simplifies the submission process and removes any ambiguity about when and if a submission took place. Moreover, instructors can download all submissions individually or all at once as a batch for grading in another platform, or can evaluate and annotate submissions within the dropbox folder.

There are other strategies that can be coupled with the use of the D2L dropbox to ease the management of student submissions. For written assignments, I find it helpful to specify a file format that is editable. I have a preference, likely due to familiarity, for using the review function in MS WORD to provide students feedback on written assignments. Students are asked to submit either in .doc format or an .rtf format that can be read in MS WORD. However, PDF is the preferred format for the health promotion poster assignment submission in a second-year course because this file type captures the poster elements (text and image) as students intend and can be annotated using Adobe Acrobat Reader DC. Requesting a specific preferred format can save time that would be spent on converting file formats. At our institution, students have free access to MS WORD; instructors should be mindful of the software students have access to when requesting a specific format.

Using File Name Conventions

Using a set a file name convention for submissions is helpful for avoiding ten "Assignment 1" files that then need to be differentiated. One convention that works well is a stem that corresponds to the assignment name, followed by the student's ID number. For example, for the journal club (JC) assignment I ask that students name their documents "JC_StudentID" and post this requirement on the assignment instructions and in the description of the corresponding dropbox folder. This has the added benefit that I can then mark blinded to the student's name, provided I have asked that they indicate their student ID only and not their names within the document. Marking blind mitigates the risk of unconscious bias and facilitates equitable marking, providing students with some assurance of fairness, especially in small and medium size classes.

The description section with each D2L dropbox can be used to support the use of file format and naming conventions. This is a great place to provide instructions for submissions, including reminders of word count or page limits, naming specific file formats for the submission (MS WORD, PDF, or RTF), and providing an example of the naming convention for submission file (including the stem and requested information, as noted above). D2L dropbox also allows instructors to set the due date so that it is visible to students in the dropbox folder. Making these instructions and reminders visible to students is very effective in the place where the submission will go is effective for greatly reducing the number of students who do not follow submission instructions.

Feedback as a form of Student-Instructor Interaction

It is important to recognize that grading, and assessment in general, is a form of student-instructor interaction (Crook, et al., 2012). Students submit assignments as a way to demonstrate learning to the instructor; in return, instructors provide a grade that communicates a judgement of their performance. Thus, a grade without feedback, particularly for summative assessments during the course, does not honour the interaction. Thinking about grading as an interaction also centers the focus on how the student receives the grade and related feedback.

Providing Feedback

The most common and traditional feedback format in most disciplines is written (McCarthy, 2015). Generally, instructors recognize the value of providing clear and detailed feedback, but this process can be time consuming and highly repetitive, particularly with large class sizes (Henderson et al., 2019). One strategy to reduce the time and effort required for feedback is the use of rubrics. Rubrics serve to set expectations for a continuum of performance by providing clear criteria for achievement at each level of performance (for a good overview of rubrics, see the 2018 review by Brookhart). A well-designed and thoughtful rubric can reduce the need for specific written feedback, or at the very least limit repetitive feedback. Additionally, D2L allows instructors to pair a rubric with the dropbox folder for any given

assignment, which streamlines the grading process. Developing a rubric can be both challenging and worthwhile, and requires an upfront investment of time and effort to produce a rubric that can be used or adapted for years to come.

Rubrics may not always be sufficient to provide the level of feedback that is required for optimal learning. For example, because students in HSOC 201 are mostly new to academic writing, they require substantive feedback on their first paraphrasing assignment that they then can apply to the second assignment. To maximize efficiency, I use both a rubric and the review function in MS WORD to provide feedback. The rubric focuses on common academic writing concerns and reduces the amount of time spent on providing written feedback, which is used for individualized comments and examples for revision. In addition, I use a set of pre-drafted comments that I can cut and paste to speed up the process of specific feedback Table 1).

Audio and Video Feedback

Alternatively, instructors could consider the use of audio or video feedback when appropriate. There is mounting evidence that audio and video formats are effective for providing in-depth feedback and are often better received by students than written feedback. Audio feedback can be perceived as more personal and engaging than written feedback, and is easier to understand for students for whom English is a second language (McCarthy, 2015; Merry and Orsmond, 2008). For instructors, audio formats can facilitate feedback about complex ideas and allows for changes in tone and inflection, and thus is perceived by students as more useful and supportive than written feedback (McCarthy, 2015). Similar benefits have been reported for video feedback, with the added advantage that a video format allows for visual communication cues. The visual nature of video feedback includes eye contact, facial expression and body language, which makes it perceived as the most personal and supportive of the feedback formats (McCarthy, 2015; Henderson and Phillips, 2015). The more personalized nature of audio and video feedback makes them especially attractive

Table 1:
Sample pre-drafted comments for written assignments

Assignment Component	Positive Reinforcement	Feedback for Growth
Content	• Great synthesis of the academic literature in this area. • Great connection made to relevant course concepts. • A thoughtful review of the relevant research literature	• This statement needs clarification. • Can you provide a specific example to support your claim? • Good description – can you provide a deeper analysis by connecting this ideas to theory or concepts discussed in class? • Try to avoid the use of broad, overarching claims without specific support. • ….is not a social determinant of health – this is an individual level risk factor that is shaped by personal health practices and coping skills.
Writing mechanics	• Thoughtful word choice. • Well-organized and easy to read. • Concise and to the point.	• Please review the appropriate use of that and which. • This paraphrase closely matches the original source's wording or structure. • Focus on being concise and avoiding repetition. • Please review the reference list for appropriate and consistent formatting.
Following assignment instructions	• Great title!	• Please review the assignment description for the required content for this paper. • Please review the assignment description for formatting requirements (double spacing, page numbers, title page).

Note. This is a sample of pre-drafted comments that can be cut-and-pasted as feedback, in addition to more personalized or specific comments

for remote learning, where strategies to encourage student engagement, interaction and rapport with the instructor are especially important. All three formats – written, audio, and video- can be uploaded as feedback files in the D2L dropbox.

There are challenges to adopting audio and video feedback, the most significant being the unfamiliarity of the format. I have found that video feedback takes more time in the beginning as one tries to develop an efficient approach. Video files can also be quite large and take time to upload, which can test your patience if you are trying to work quickly and have many files to upload. The benefit is that you can record a simple video, or use video capture software such as Zoom or YuJa to record with a shared screen. As an alternative, I use audio feedback for the documentary review group presentations in HSOC 201. Similar to video, it takes a little time at the beginning. Jotting down talking points and thinking about it as a conversation help, especially for resisting the urge to re-record or edit (which takes more time). The process does get faster with practice and is very well received by students. Some HSOC 201 students reported that they actually listened to the feedback, when in the past they may have left written feedback for "later".

Using a Digital Gradebook to Enhance Student Self-Monitoring

Self-regulation is an important skill for students and is associated with higher levels of student motivation (Ning & Downing, 2010) Self-regulation refers to the ability to regulate one's learning through the use of strategies like goal setting, time management, and self-monitoring. One simple way to facilitate self-monitoring for students is to provide them with the ability to monitor their course progression via the D2L gradebook. Depending on the settings selected, students can view their assessment grades, class average, mode and grade distribution, and their estimated final weighted grade. This performance monitoring can assist students with goal setting and encourage feedback-seeking behaviour (Geddes, 2009).

Like it or not, students care about their grades. I use the gradebook in HSOC 201 and students do access it quite regularly. I have experienced that when students

are not achieving at a level in line with their goals, they seek advice from me or the course teaching assistant. These students tend to ask questions related to overall performance in the course, rather than a specific assignment, and focus on future improvement. However, self-monitoring of grades needs to be coupled with quality, actionable feedback on assessments and an open and inclusive learning environment where students feel safe seeking additional feedback and advice (Schinske and Tanner, 2014).

Implications

The recent shift to online or remote teaching and learning has challenged many instructors to come up with new ways of doing and thinking about effective and efficient grading. There are a number of LMS tools that can be leveraged and strategies that can be adapted for the online environment, many of which are also useful for in-person courses. Strategies for efficient grading are important for workload management, sustainability, and the well-being of instructors. As instructors adapt and embrace new grading strategies, it is essential to remain student-centered and always with the goal of improving learning in mind.

> **Strategies for efficient grading are important for workload management, sustainability, and the well-being of instructors.**

Recommendations

- **Schedule time during your least busy time of the academic year to familiarize yourself with D2L functionalities.** Summer is one of the best times to do this – it is less than ideal to learn and apply a new functionality while you are busy with all of the other aspects of managing one or multiple courses.

- **Experiment with a variety of formats for feedback.** Think about which feedback formats

best suit the assessment, the needs of learners and your own personal style.

- **Use the gradebook as another form of feedback.** Students care about their grades. This presents one opportunity to provide a picture of their progression throughout the course.

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Chapter 2:

Using Twitter for Online Learning: #EdTechEthics, a course that never ends....

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Field/Discipline:
Education, Ethics and Technology

Course Level:
Graduate

Learning Context

The Ethics and Technology course is one of four required courses in the Leading in a Digital Age program, in the Werklund School of Education's MED Interdisciplinary degree pathway. Graduate students are provided with a range of synchronous and asynchronous learning experiences throughout this certificate program. In the third course, during the Winter 2020 and 2021 terms, students used a freely accessible, open network service and microblogging application, Twitter, to examine topics related to safe and ethical use of technology in digital learning environments. The instructor designed a synchronous webinar to help students explore resources related to the ubiquitous influence and complexities of technology in a participatory culture and the evolving issues that confront learning communities.

Fostering student success in online learning

In this chapter, we (the academic coordinator and instructor) discuss the instructional design of one synchronous webinar provided in the early stages of the ethics and technology course and how we decided to use participatory learning activities to examine topics related to ethical use of technology in digital learning environments. Twitter, an open

network service for microblogging, was the application selected to engage students in learning activities during a 2-hour synchronous webinar. Twitter was used to engage students in open educational practices (OEP), defined by Cronin (2017) as: "collaborative practices that include the creation, use, and reuse of OER [open educational resources] as well as pedagogical practices employing participatory technologies and social networks for

> **In the synchronous webinar, students explored how the use of a selected hashtag can help curate open educational resources, for interaction with outside experts in the field, to support peer learning, and for knowledge engagement and mobilization.**

interaction, peer learning, knowledge creation and empowerment of learners" (p. 4). In the literature, it seems that a common beginning task is to practice creating a post, also known as a microblog, or what is called a tweet in Twitter (Mottaghinia et al., 2021). Twitter limits tweets to 280-characters (previously 140-characters) and can include tagging features to

create streams of posts that are searchable. Instead of introducing students to Twitter by having students create a character-limited tweet, we introduced a different aspect of the open network tool: hashtags.

Twitter has a built-in function for tagging resources through a hashtag feature. "A hashtag is a single term with a '#' sign prefix in the body of the tweet, denoting the category of the tweet. Hashtags allow users to indicate the topic of a tweet" (Mottaghinia et al., 2021, p. 749). In the synchronous webinar, students explored how the use of a selected hashtag can help curate open educational resources, for interaction with outside experts in the field, to support peer learning, and for knowledge engagement and mobilization. Using a predetermined hashtag was one way for the instructor to help students understand the creation, use, reuse of open educational practices (Cronin, 2017). The synchronous webinar was designed to help students learn how to engage in content curation with peers using a predetermined and user-generated hashtag in Twitter.

Designing and Facilitating the Webinar

There were four stages involved in designing and facilitating this webinar that could be adopted or adapted for use in diverse contexts: (a) prepare a timeline, (b) prepare session slides and collaborative documents, (c) schedule time for students to engage synchronously, and (d) facilitate a discussion and debrief with students. In this section, we describe our approach to each of these stages and provide templates that could be helpful in planning.

Prepare a Timeline for Webinar

First, in preparation for the webinar, the instructor developed a timeline for the activities for the synchronous webinar scheduled for a total of 120 minutes in duration (see Table 1). The instructor also reviewed existing hashtags in Twitter and selected "#EdTechEthics" after extensive searching of existing user-generated hashtags and through previewing the content associated with the hashtag. The instructor started using the hashtag for several months prior to the synchronous webinar and added the hashtag to any newly found resources or posts in Twitter related to topics interconnecting educational technology and ethics. The hashtag #EdTechEthics was also shared with students in the syllabus and resources about using Twitter were shared with students. Some of the students started to use the hashtag as a replacement for the formal course title and referred to the #EdTechEthics Course instead of the numeric identifier or program title for the course.

Prepare Slides and Shared Google Documents for Webinar

After developing the timeline for the session, the instructor prepared a 20-minute slide presentation with information about Twitter and readings in the course about ethics and educational technology. Each student was situated as a co-designer defined as "an active student who acts beyond the given course design as s/he constructively searches for and utilizes other resources in order to accomplish set goals" (Jahnke et al., 2020, p. 1). Following the presentation, students practiced searching different hashtags (provided by the instructor or suggested by students) and collected associated links to individual posts. The students were then divided into small groups using breakout rooms in Zoom. In the breakout rooms, students were asked to work in their groups and search the curated list of content using the #EdTechEthics hashtag in Twitter. Searching curated lists in Twitter is publicly accessible and does not require users to each have their own personal account or login with a password. This is a great way to scaffold and help students who may not be familiar with using open network services or microblogging sites, and for those who might be reluctant to create a personal account. This can also help develop awareness and build confidence around open learner identity and open readiness (Cronin, 2017) while students actively engage in the learning process.

Students were asked to type the #EdTechEthics hashtag in the search field and then review the associated content together with their small groups. Each student selected one of the microblog posts from the stream generated by the search and copied the link for the post into a table pre-organized by the instructor in a shared Google document (Table 2). The Google document included a table for each group to help organize the links to the posts and reason for selecting the post.

Table 1:
Timeline for 120 min. Synchronous Webinar

Timeline	Webinar Activities
10 min.	Ice-breaker in Main Room: Students are presented with a question and then move into random breakout rooms for 2 min with a partner to discuss (repeat 3 rotations with different ice breaker questions).
20 min.	Instructor Presentation in Main Room: Introduction to Twitter for Content Curation and Ethics Framework
10 min.	Whole Class Activity in Main Room: Students practice searching for different hashtag and retrieving links
40 min.	Small Breakout Groups: Each member of the group adds their selected post and adds rationale to the shared google document. In small groups students select technology-ethics topic from the curated list and together select one topic to summarize.
10 min.	Break
30 min.	Whole Class Discussion in Main Room: Each group shares their topic/rationale; discuss posting new content and next steps for course assignment.

Table 2:
Sample Table in Google Document for Curating Selected Posts

Group Number / Student Initials	Selected Post (link)	Rationale for Selection

Table 3:
Guidance to Summarize Selected #EdTechEthics Topic

Summary of #EdTechEthics Issue:	Summarize the overarching topic/issue (~1 sentence)
Connections to Practice:	Provide an example or opinion about benefits/challenges/debates in connection to practice (~1-3 sentences or bullet points)
Connections to Theory:	Connect to theory/theorist from the class readings (~1-3 sentences or bullet points)
Connections to Ethics:	Show connections to the ethics framework provided by the instructor (~1-3 sentences or bullet points)

Provide Time for Students to Engage Synchronously and Search the #EdTechEthics Stream

Next, in their small groups in the breakout rooms during the webinar, students were provided with time to review the table and discuss the selected posts and rationales from the #EdTechEthics stream. Together, the students selected one overarching topic related to ethical issues in educational technology and listed the connections to practice, theory, and ethics (see Table 3).

Offering time to practice using hashtags during the synchronous webinar helped students start to think about a topic of interest that could be used for subsequent assignments in the course. Topics from the Winter 2020 and Winter 2021 courses were developed into chapters that were authored by students in the program and published in two volumes of an open educational resource (see Brown et al., 2020, 2021).

Discuss Ways to Contribute Content to Open Network Service

During the final part of the webinar, the students returned to the main room in Zoom and discussed how to post new content in Twitter. Posting new content requires a personal account in Twitter. The instructor also provided the option of posting messages for students without accounts. The class discussed the format/length of posts in Twitter, use of hashtags for organizing content and reaching a broader audience, as well as adding media and using ALT text to make information accessible for use with audio readers. For example, when creating hashtags, it is recommended that each new word in a hashtag should be capitalized and when adding images or video, ALT text should be added to provide a description for those who are unable to view the image or media.

These learning activities were designed for one synchronous webinar in the graduate course. However, with situating students as co-designers and active participants, the activities seemingly engaged students beyond the duration of the webinar and the course. We noticed the activity helped form an open learning community where alumni have continued to share and tag resources, and to offer their help to new students in the program and to connect with outside

experts to support their course work (e.g., outside experts provided feedback for ideas pressbook chapter development and writing). Students who were in the Winter 2020 class continued to post messages and interact with students and academics in the Winter 2021 term. Using an open network service supported these connections to continue and grow. After trialing this approach for two years in the course, we agreed this is a promising strategy and the synchronous webinar can engage students in open educational practice and has potential to create an innovative and enduring learning experience. We also noted that scaffolding the experience and providing students with different entry points was important to help students who were not comfortable with creating a personal account on Twitter.

> **Implementing this approach with two online classes helped us recognize the scaffolding required to ensure students can participate in using a network service in ways they are comfortable.**

Implications

Our experiences using a synchronous webinar to familiarize students with an open network service was a promising learning experience. Implementing this approach with two online classes helped us recognize the scaffolding required to ensure students can participate in using a network service in ways they are comfortable. Using an open and public space during the course can be uncomfortable for both instructors and students. We learned that starting with exploring hashtags can be a good entry point and does not require students to create their own account. This strategy can be helpful for reducing barriers for using microblogging in learning contexts.

Using Twitter with Google Docs during a synchronous webinar early in the course helped students learn how to use an open network service as a source for content curation throughout the course. Students started to add their own posts, retweeted posts they wanted to share, and used hashtags to contribute to content curation. Students continued to use Twitter and it has provided us with a way to keep connected

with students after course completion. We also noticed alumni have continued to provide support and encouragement to our students and expressed interest in their tweets through re-tweeting and selecting 'like' when viewing the posts. We noted that outside experts were also interacting with students and adding the #EdTechEthics hashtag to their posts. This learning activity led to many unexpected interactions, connections, and student engagement that endured beyond the duration of the course and the program.

We learned that a synchronous webinar is optimal when introducing students to open network services and for providing a supportive learning environment for student learning about content organization and contribution. Using Twitter in a guided way during a synchronous webinar also helped provide students with a practical learning experience with open educational practice that can be expanded upon to support learners at all digital fluency abilities.

> **Students started to add their own posts, retweeted posts they wanted to share, and used hashtags to contribute to content curation.**

Recommendations

We offer recommendations for other program coordinators and instructors who are considering the use of open network services, such as Twitter in online courses.

Three key recommendations for readers:

- **Plan:** Plan the synchronous webinar with built-in time for a range of learning activities for students to explore, experiment, and experience participatory technologies and hashtags. Draw on hashtags that are already in use and have relevant content.

- **Scaffold:** Scaffold learning activities organized with open network services by providing choice for type/extent of contribution to include students at different levels of readiness and adoption.

- **Connect:** Make connections to Open Educational Practices (OEP) to demonstrate the purpose and "why" these learning activities can support learners as co-designers to actively engage during the synchronous webinar and sustain engagement into future courses and beyond the program.

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Chapter 3:

Promoting Human Flourishing within Online Learning Environments

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Introduction and Course Context

In March 2020, post-secondary education institutions around the world were required to make a sudden shift to online learning due to the global pandemic which resulted in many educators and students experiencing online education for the first time (Hodges et al., 2020) Due to the continued uncertainty of the pandemic and the perceived benefits of online education, many educational institutions continue to expand online education options. As institutions shift from choosing online education as a reactive response to the pandemic to a long-term option, questions remain as to how educators can continue to foster student success and promote human flourishing in the online environment.

In this chapter we consider intentional course design and delivery strategies to foster success and human flourishing for our students, our educational community, and ourselves within the context of an online learning environment. We draw exemplars from two required senior level undergraduate nursing theory courses with student enrollment of between 30-50 students. In the Faculty of Nursing, weekly theory courses are scheduled in three-hour time blocks, which became a factor in considering the quality of learning in the online learning environment.

The Relationship between Human Flourishing & Education

Human flourishing has been defined as "the optimal continuing development of human beings' potentials and living well as a human being, which means being engaged in relationship and activities that are personally meaningful" (de Ruyter et al., 2020, p. 1). Humanizing education through the creation of caring spaces nurtures human flourishing (Christopher et al., 2020). When students and educators engage within a caring community, learning and teaching are meaningful, relationships grow, and the quality of learning is enriched (Palmer & Zajonc, 2010).

Our course design and delivery strategies align with our teaching principles of presence, connection, authentic learning, and equity to create environments that invite students to engage in learning as a form of self-discovery as they respond to their own learning and others' experiences. The inherent challenges of promoting education as self-discovery and human becoming were magnified particularly given the real and perceived barriers to connection in online educative spaces.

We reflected on the fact that learning from 'home' as an alternative environment to a traditional classroom blurs the boundaries between formal and informal learning experiences (Castañeda et al., 2016; Chatti et al., 2012; Patterson et al., 2017;

Turkle, 2007). It is quite often in online learning, particularly during the isolation of the pandemic, that students found themselves in their personal learning spaces or environments. Personal learning environments provide a "structure and process that helps learners organize the influx of information, resources, and interactions that they are faced with daily into a personalized learning space or experience" (Castañeda et al., 2016). Thus, these personal learning environments serve as a refuge and safe space to engage in the messiness of learning and to expose the vulnerability of learning in a manner that remains private. It struck us that what was once a private learning space for many students became public and in a manner of speaking could expose them, especially engaging with their cameras on, which in a sense could have reflected their learning vulnerabilities back to them as they peered at their picture on the screen.

Another factor that may have influenced students' flourishing in online learning is the fact that in addition to requiring private personal learning spaces, they simultaneously thrive on the social aspect of learning. Students learn from and with others, they build on each other's experiences and understanding, and they construct shared meaning. The social nature of learning happens both formally and informally, and with the physical limitations imposed by the online environment, it was important for us to build in time for students to connect informally around their learning. So, engaging in educational approaches that recognized the vulnerabilities of learning and the importance of learning in community became very important.

We found our students were experiencing heavy cognitive load, anxiety, and stress from prolonged periods on Zoom. Virtual fatigue manifests when the brain has to work overtime to process information (Nesher Shoshan & Wehrt, 2021). Humanizing approaches to education meant attuning to and validating students' lived experiences and responding with course design and delivery strategies that supported human flourishing. We realized that it was important to stay anchored to our fundamental teaching approach founded upon the significance of

relationship, establishing trust, our foundational belief about student willingness and capacity to learn, and bearing witness to the real challenges of learning to become a nurse. Instead of viewing the online environment as a barrier to meaningful connection and transformation, we recognized our need to create new strategies to foster flourishing and success for our students.

Intentional Course Design to Support Human Flourishing & Success within Online Learning

By attending to the aspects of our teaching practice that have always been a part of our course design to support human flourishing and meaningful learning, including building a sense of community, coming to know our students as individuals, fostering trust and bearing witness to student challenges in learning, we were able to build on design strategies that helped to promote student success in online learning. In many ways the shift online called us back to ourselves as educators and challenged us to live out what we know is important for students to learn how to become a nurse. The following chart highlights engagement and assessment strategies that we used and how these supported students to flourish and experience success in the online learning environment. We also discuss the implications of our strategies and their influence on student learning and our teaching practice.

> **Intentional course design supports human flourishing and meaningful learning**

Implications

From our experiences navigating the online learning environment we learned that the strategies we developed to address the perceived barrier to cultivating trusting relationships and building community online allowed us a richer and deeper relationship with students than we had experienced in person. We also found that our approaches supported flourishing and students' well-being in ways that offered them more flexibility and control over

Strategy	Supporting Learner Success & Human Flourishing in Online Learning	Learning & Teaching Implications for Online Learning
Engagement		
Icebreaker Activities **Video Introductions** Students post a video introduction where they share their connection to the course subject matter and an interest outside of school. **Name Plates** Students write their name and draw something that represents them, an interest or a hobby and then introduce themselves and their drawing.	These exercises build a sense of belonging helping students to identify shared interests and commonalities, while also identifying uniqueness amongst themselves as a community. Students are invited to share a video or photograph(s) with a voice-over, based on their comfort level. Having students introduce themselves by name and sharing something about themselves fosters a sense of being known.	When students feel valued and free to be who they are, they are more accountable, engage in their learning more authentically and actively listen in ways that honor a variety of perspectives. Learning is impacted because students are more trusting and respectful of one another and find it easier to express their perspectives and value others' viewpoints in discussions and group work. Taking time to build relationships and foster a sense of community among students in online environments, students feel known and tend to leave their cameras on and it also enhances engagement in large group and breakout room discussions.
Students Learning Expectations On the first day of class students reflect on and write down "Why am I here?" in addition to their expectations and what they would like to learn from the course.	Actively encouraging students to express their goals for learning enables students to express what is of value and importance to them. It also enhances their accountability, motivation and builds confidence to engage in deep and meaningful learning. Anchoring their learning to fulfill their reason for being here is what gives meaning and purpose to their learning.	Students' shared expectations provide the teacher insight and direction in designing and delivering course material and learning opportunities in response to students' learning needs. Students' expectations are themed and shared back with the class in an intentional manner that links their expectations directly back to the course. This fosters commitment and motivates students to be accountable in their learning to fulfill their goals for the course. Having students revisit their written expectations for the course enables them to see the value in what they have learned and identifies further opportunities to continue their learning beyond the class.

Engage learners synchronously and asynchronously Pre-record lecture material and provide optional learning tools such as worksheets to support discerning salient information.	Pre-recorded lecture material made available well in advance of class time, enabled students the flexibility and freedom to engage with the course material at a time that was convenient for them. Providing optionable fill in the blank worksheets that accompanied each recorded Ppt. reduced the cognitive load for students by providing cues for how to process content and make connections between new and existing knowledge.	Critically review course material and active learning strategies to ensure that they are essential to meet the learning outcomes. Clearly identifying and communicating optional enrichment material reduces student anxiety and helps them to focus on essential information.
Themed Office Hours Offering themes for office hours based upon frequently asked questions and learner needs such as quiz taking strategies, upcoming assignments, and general course questions.	Attending to questions about assignments, readings, how course material related to other theory courses and practicums Engaging students in this way built trusting relationships, students felt cared for and heard	Being specific about the topic of the office hours allows students to strategically plan their online engagement. Many students express a desire to attend office hours to hear their peers' questions but not necessarily ask questions themselves. Themed office hours allowed students to attend during a time when other students with similar questions were online.
Assessment		
Scaffolded Assignments Design assignments as scaffolded learning experiences that build to increasing complexity. **Flexible Due Dates** Where possible, provided flexibility to help students manage their workload across their courses.	Timing assignments so that students have deliverables spread over weeks helps to reduce stress and workload. Providing feedback at each micro assignment is central to learning as it gives students a chance to learn from misconceptions, revise their work and seek support as required. Offering flexibility relative to due dates affords students control over their time and decreases anxiety knowing there is flexibility as needed.	Be explicit in communicating the connection between the assignments and how they build on one another, as this is not always obvious from a learner's perspective, they may see three small assignments which enhances perceptions of heavy workload and contributes to student anxiety and stress. Clearly communicating learning expectations and activities to students on a weekly basis contributed to students feeling prepared and lowered anxiety as students knew what to expect during asynchronous and synchronous learning. The goal behind flexible due dates is to reduce stress while maximizing opportunities for student success. Giving students who miss a due date an opportunity to catch up encourages them to keep engaging with the class rather than give up.

Recorded Discussion Assignment- Students engage in recorded small group discussions of case studies and upcoming assignments.	Low-stakes, time-limited small group discussions during class time reduces student workload and provides opportunity to solidify their understanding and learn from their peers, thus building a sense of community and accomplishment. Providing students, the opportunity to review upcoming assignments and rubrics with their peers encourages students to start planning their assignments early and reduce compounding workload.	Recorded discussions allow the instructor to hear the students' reasoning and identify gaps in student understanding of the lecture material. Students are awarded full marks for engaging in the group discussion. Clearly communicating the purpose of formative assessment encourages students to engage in the group discussion without fear that their incorrect or incomplete answers will be penalized. By reviewing the assignment description and rubrics together with their peers, students gain clarity on the assignment expectations and brainstorm ideas for how to approach the assignment

their learning experiences which decreased cognitive load. Students showed enhanced commitment and motivation to learn and greater levels of engagement. Flourishing was also evident in the depth and quality of learning expressed by students within their participation in synchronous and asynchronous learning and as reflected in their work on assessments. Much to our surprise, within the online learning environment, the learning experience for students and ourselves transcended the limitations of physical distance and created a deeply authentic experience.

> **Cultivating trusting relationships and building community online supports students' flourishing and well-being**

Recommendations

Recommendations that have emerged from our shared lived experience to promote human flourishing and meaningful learning in online learning environments include:

- **Review course material:** Critically reviewing course material and active learning strategies ensures that they are essential to meet the learning outcomes. This enhances flourishing and meaningful learning by communicating what is necessary for students to focus on.

- **Build community:** Taking time to build a sense of community and belonging in the online environment through establishing meaningful connections with students enhances the nature of engagement, interaction, learner motivation and accountability, and enriches the quality of learning for students as individuals and as a community.

- **Foster engagement:** Providing opportunities for students to demonstrate their learning through low-stakes formative group assessments helps to solidify student learning while also fostering a sense of community.

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Chapter 4:

ePortfolio Assignments to Demonstrate Learning in Online Courses

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ePortfolios: What, Why, and How

ePortfolios are a digital collection of work that the student has completed, either during a course or throughout a program of study (Ebil et al., 2020). They are typically a curated selection of student work that demonstrate learning. Some ePortfolios include only the most compelling pieces, while others include early samples and later samples to illustrate learning over time (Mueller, 2018). Another type of ePortfolio can include stages of an assignment that spans the entire term, or iterations of an assignment to show how iterations of it have improved with each revision. There are many different types of tools that can be used to create student eportfolios, including Canva™, Prezi™, PowerPoint™, commercial tools and the institution's learning management system. However, instructors should weigh factors such as cost with any security concerns that might exist with free online tools.

> **Since they contain digital artifacts, eportfolios can be an amazing way for students to curate, document, and reflect on their work over time.**

Since they are so flexible, ePortfolios can be used in many different disciplines. While they have traditionally been used in art and with writing assignments, they would also work well for planning documents, technical reports, lab reports, goal-setting sheets and progress made to date, drafts of assignments, and peer evaluations. ePortfolios can be shared online publicly or made available to those with permission to view them, perfect for sharing with potential employers. Since they contain digital artifacts they are particularly apt for online courses. In this chapter, we present a framework for using ePortfolios in undergraduate and Master's level online courses.

Use of ePortfolios in Two Online Courses

Course 1: Master's-level Education course

The first course was a part of a four-course certificate at the master's level in the faculty of Education. In the course, titled Exploring Digital Media, students applied design concepts and skills while creating digital media learning materials, such as videos, websites, and ebooks, for specific learning audiences. Students completed three digital media projects in the course to produce an ePortfolio of work, along with project documentation and reflection statements. The entire course was offered online, and typically had students in different provinces;

occasionally, there were a couple of students who were based outside of Canada.

The three projects included an infographic, a choice of an eBook or digital video, and a website. While there were no group projects, students did peer reviews on two of the projects and shared their finished products with classmates. At the end of the course, they completed a reflection statement about their learning. These artifacts and reflections composed a digital ePortfolio of their work, demonstrating how they applied instructional design principles to digital media projects. Students shared their completed projects on the discussion board within the course. They had the option to make them publicly available by posting them on their blogs or other online space.

Course 2: Undergraduate Social Work course

The second course was an undergraduate course in the Virtual Learning Circle program at the Faculty of Social Work. The course, entitled Diversity and Oppression Portfolio Project, ran concurrently with the course entitled Diversity & Oppression. In the portfolio course, students engaged with their peers and the course materials from the partner course to develop an ePortfolio of their learning as it related to diversity and social justice in the social work profession. The course was delivered online with biweekly two-hour synchronous sessions. Alternating weeks were dedicated to peer-to-peer collaboration, which promoted connection between students who were in different provinces. Students had the option to make their ePortfolios publicly available or private, which required them to share a viewable link with their peer partners and the instructor for review, grading, and feedback.

At the beginning of the course, students chose a social justice topic that they wanted to explore. They then addressed three reflective prompts throughout the term, sharing them with their peers through discussion posts on the learning management system (LMS). At the end of the course, students compiled an interactive ePortfolio in which they summarized their key learning from each reflection, shared an important resource that helped them explore their topic, and posed a reflective question back to their peers. They shared their ePortfolios on a discussion board and responded to at least one peer's ePortfolio by answering their reflective question.

Fostering Success: A Framework for ePortfolios in Online Courses

ePortfolios are a great fit for online learning environments since electronic versions allow for a variety of artifacts to be included and shared with others, such as written assignments, audio files, and images. To foster student success and depth of learning through ePortfolios, we present several course design considerations in **Table 1**, with an emphasis on aspects of Universal Design for Learning (CAST, 2022) and principles of course design in higher education (Taylor Institute, 2022).

Lessons Learned

Collaboration in Online Courses

There is incredible value in giving students space and guidance to collaborate and engage in peer review on assignments in an online space. Students were able to create and use collaborative documents to provide feedback and revise their work at their own pace, without having to rely upon an instructor or TA. It also allowed students to engage with one another in whatever way they were most comfortable with, such as only using email and comments in documents rather than meeting on video or over the phone. As no two students had the same topic, online peer-to-peer interaction became a space to brainstorm new ideas, talk through their work, and create stronger assignments than if each student had worked in isolation.

Balancing Workload and Feedback

Students tended to find the ePortfolio assignments highly motivating and put considerable effort into their projects. Many of them appreciated working on

Table 1:

Course design considerations when using digital ePortfolios

Course Design Considerations	Master's level Education Course	Undergraduate level Social Work Course
Student choice and autonomy	Student choice of project type (eBook or video) and topic that was relevant to them.	Students chose a social justice topic of interest, which fostered engagement with the learning process.
Interaction with others	Synchronous sessions were used to explore key concepts, provide clarity on the reflection prompts, Q & A sessions, and peer-to-peer brainstorming.	
	Discussion boards were used during weeks with no assignments due.	Peer partners were assigned at the beginning of the term and were responsible for doing peer review of the discussion posts.
Student use of learning technologies	Institutionally supported tools were used for course elements such as online discussions, synchronous sessions, submitting assignments, etc.	
	Student selection of software for their projects, with the understanding that some tools had more support than others.	Students were allowed to select the format and technology that they used for their ePortfolio, including Canva™, Prezi™, and PowerPoint™, all of which are free to use.
Self-regulation and motivation	Student choice of topics and assignment format increased motivation.	Students chose how they wanted to interact with one another, the research process, and presentation of their ePortfolio, resulting in an autonomous learning environment.
Demonstration of learning	ePortfolio of work incorporated multiple ways to demonstrate learning, including digital media and written work.	Students created an interactive ePortfolio that included a summary of key learning from each post, an additional resource that was helpful in their learning, and a reflective question for their peers.
Mitigating learner anxiety with ePortfolio assignments	The first assignment was shorter with a quick turnaround to provide feedback. Students were provided with abundant resources and tutorials for new software, as well as examples of assignments that met instructor expectations.	The instructor provided feedback on each discussion post so that students could incorporate feedback into the next post. Students were able to compare their reflection posts and discuss areas for improvement, brevity, or clarity.
Mitigating learner anxiety in online learning environments	Synchronous sessions addressed challenges and questions that students had.	
	Online office hours and a Q&A discussion board offered different ways to ask questions. Students selected the digital media tools they used from a range that included simpler tools with plenty of support materials, to more advanced options.	Shared how-to written, visual, and audio resources for using different technologies in the course. Instructor video about expectations for assignments and the ePortfolio.

Reflection on learning	The final assignment was a reflection statement about their learning throughout the course. Individual assignments also incorporated a short reflective statement.	The final ePortfolio was a personal reflection on students' learning journey through both courses. Students incorporated course content and additional, student-sourced resources that were meaningful to their learning.
Expectations of student learning	Students were given a grading rubric at the beginning of each project. The entire course was visible to students from the beginning. The first assignment was due early in the course so they could gauge instructor expectations of the work.	Students were given a grading rubric for each post and the final ePortfolio. The rubric content was pulled from the assignment instructions to promote consistency. The instructions and criteria for each post were shared in the description of the discussion topic and in the course content. The due dates for each post were spread throughout the term, allowing students ample time to receive and incorporate feedback for the following post.
Practice	Cumulative assignments with frequent submissions of work in progress. Using the discussion board to critique examples of infographics, eBooks and websites strengthened understanding of instructional design principles.	Allowing students to engage in peer-to-peer collaboration and brainstorming for their discussion posts fostered a sense of community and space to test new ideas. Engaging in peer review fostered critical thinking skills and improved students' written posts over the term.
Feedback	Students received feedback from the instructor on their proposals as well as work in progress. Peer review was incorporated so that students could receive feedback from multiple perspectives.	Students received feedback from their peers on each post and their ePortfolio. The instructor assessed each post with the rubric and provided feedback for use in the development of subsequent posts.
Keeping students on track	Using the weekly checklist feature on the LMS allowed students to ensure they were keeping pace with the course.	
	Weekly emails and news items were used to remind students of upcoming assignments. Synchronous sessions used to discuss issues or concepts that needed more clarification.	Students completed a checklist for each reflective discussion post, which provided structure for peer-review of drafts, submission, and next steps for incorporating feedback.

an assignment that was different from the standard research paper and stated that they learned skills that would be applicable to other course work or their work context. However, we learned a few things that would help the process to run smoother.

ePortfolios are not only a lot of work for the student, but also for the instructor. We used rubrics to help streamline grading, but each ePortfolio still required a significant amount of the instructor's time to grade. We would not want to suggest that ePortfolios are feasible in large-enrollment courses unless the instructor has teaching assistants who can help with answering student questions, providing feedback, and grading assignments.

Example reflection questions:

- What did you learn while completing the assignments?
- What did you learn when assembling your ePortfolio?
- How has your learning grown over time?
- What are your strengths as evidenced in this work?
- What are your next steps as a learner?

Recommendations

Provide Guidance

Provide students with guidance on how to reflect on their work and examples of different questions they might address. We often give students reflection questions as a starting point. In addition to supporting students in the development of their ePortfolios, these questions are also relevant to educators when they design the criteria and guidelines for the assignment. Such questions may inform the strategies that you apply to support students and facilitate their interactions with content, knowledge, and their peers

Grade Holistically

Many ePortfolios contain assignments that have previously been graded. In this case, instructors may choose to assess the ePortfolio holistically.

For example, one might assess the quality of the connections that students make between ePortfolio components, threshold concepts, and the course learning outcomes. Such an approach may mitigate learner anxiety and facilitate time-efficient grading at the end of term. If students are encouraged to view their ePortfolio as a compilation of their learning, they may feel more able to develop a creative and personal ePortfolio that represents their collective and individual identity.

Guide the Peer Feedback Process

Peer review can provide students with timely and constructive feedback on ePortfolios. To promote feedback skills, literacy, and consistency, instructors may consider adopting or adapting the following strategies:

- Have a detailed feedback form so that students know where to focus their comments.

- All students need to be on the same schedule for the feedback process to work. If some students are late, they hold up the review process. We had students submit their work in progress no matter what stage it was at so that it did not hold anyone back.

- Consider grading students on the feedback they give, not the feedback they receive. This will encourage them to give quality feedback.

- Prepare students for both giving and receiving feedback. Let them know that comments must be fair, accurate, and not overly harsh.

Foster Creativity

Consider allowing students to develop creative ePortfolios that transcend the traditional compilation of written work. The use of free web-based software that incorporate visual media can provide an enriched learning experience, especially if the ePortfolio becomes an interactive pathway along the learning journey. Examples include infographics, roadmaps, websites, and visual and oral presentations. To facilitate meaningful assessment and engagement with ePortfolios, we recommend that educators establish clear parameters for ePortfolios.

Establish Parameters

Establish parameters around what formats, platforms, and designs are acceptable for a digital ePortfolio in your context. For example, provide students with three options for their ePortfolio as well as helpful technological resources to support their work. If privacy and security concerns are critical, you might want to suggest that students use the learning management system's portfolio feature as a preferred tool. This approach may reduce the occurrence of students inadvertently submitting inaccessible ePortfolios or having to reformat and resubmit their ePortfolios after the deadline. Some formats, such as infographics, will need different types of parameters such as the number of blocks used in the presentation

Summary

Implementing ePortfolios in online courses can be effective in prompting students to make connections, apply what they have learned, and reflect on their progress over time. Some of the course design considerations for instructors who want to use ePortfolios in their courses include student choice and autonomy, interaction, learning technologies, student self-regulation and motivation, keeping students on track, mitigating anxiety, clear expectations, and feedback on work in progress.

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Chapter 5:

Flexible Assessment Design for Graduate Students in Education

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Education

Course Context

The online course, Applied Linguistics for Teachers (EDER 669.27), is required in the Master's Certificate (4-course topic), Teaching English as an Additional Language in the Werklund School of Education, Professional Graduate Programs in Education, University of Calgary. About 15 to 20 graduate students take this course when offered. Although the flexible assessment design described in this chapter was first used in this course, I have now expanded this design to other courses offered in the Professional Graduate Programs in Education stream.

> **In a flexible assessment design, students choose the assessment tasks that they would like to complete during the term like an à la cart menu. They are not required to complete all the assessment tasks, and they have a choice in the types of tasks they wish to complete.**

Fostering Student Success

Principles that foster student success are valid across all platforms of teaching. Chickering and Gamson (1987) describe seven principles of good practice that have been shown that could contribute to student success (Sorcinelli, 1991). Encouragement of student-faculty contact, cooperation among students, active learning, the provision of prompt feedback on assessment tasks, appropriate time spent on task, communication of high expectations, and respect for diverse talents and ways of knowing constitute the seven principles.

I will offer a metaphor to explain how a flexible assessment design works before going into detail. Suppose students are runners in a special hurdling competition, where a runner's evaluation is based on the number of hurdles (i.e., the number of learning outcomes achieved) the runner jumps, and the height of the hurdles (i.e., the level complexity or difficulty demonstrated). A runner is not obligated to successfully jump over every one of the hurdles, and in a the real competition it is common for one or more hurdles to be struck by the athlete during a race; that said, the athlete must not deliberately knock down a hurdle and in our hypothetical version they must clear a specific number of hurdles of various heights, or they will be disqualified. The point of the analogy here is that students do not need to complete every task to complete a course. As long of they complete a satisfactory number of tasks, which align with the learning objectives, at various levels of complexity and at a satisfactory level, they can achieve the requirements to complete the course.

In a flexible assessment design, students choose the assessment tasks that they would like to complete during the term like an à la cart menu. They are not required to complete all the assessment tasks, and they have a choice in the types of tasks that they wish to complete. There are several tasks with various levels of complexity available to them. The flexible assessment design draws from Chickering and Gamson's (1987) seven principles and therefore should (at the very least) conceptually foster student success in online courses. These tasks are designed to encourage student-instructor contact as prompt feedback on tasks is offered either by peers or the instructor and encourage cooperation among students as some tasks must be completed in pairs and promote active learning (see next section for examples). Often students are free to choose their mode of delivery (text, audio, visual) in response to a task, which shows respect for diverse talents and ways of knowing and tasks are small enough to be completed within a week, so appropriate time is spent on task. I believe that this design increases the chances of students achieving the course learning outcomes and completing the course successfully, therefore the design fosters student success. I will outline how this design will ensure that students meet all of the learning outcomes for the course after I explain how tasks are designed.

Designing assessment tasks

Designing assessment tasks can only begin once I have developed a set of clear, assessable learning outcomes (Baldwin & Ching, 2019; Lawrence, 2019). Other elements such as what is to be evaluated (product or process) and task constraints (e.g., task complexity) are also carefully reviewed (see Morrison et al., 2019 for review of other considerations).

One unique aspect of this flexible assessment design is the development of three assessment task types with varying degrees of complexity for each learning outcome. Some learning outcomes span one week so I design three tasks for that learning outcome. Others span multiple weeks and I design three tasks for each week (e.g., if it spans for two weeks I design six tasks) except for the final week of a 13-week course. Levels of assessment task complexity are determined based on the levels of cognitive operational complexity associated with each learning outcome. From the several cognition-based frameworks that are available for defining levels of learning, I use the framework developed by Anderson & Krathwohl (2001) because I think it accurately identifies creating as being a higher cognitive domain than evaluating. Once all assessment tasks are designed, I assign a value for each type. Type I, which is the least complex, is worth 3 points. A Type II task which has increased complexity is worth 5 points. A Type III task which requires the highest level of complex thinking is worth 8 points. Therefore, each week affords a possible 16 points that students can earn. Students are required to accumulate a certain amount of points by the end of the term to complete the course and be eligible to receive credit. Through analyzing mid-course student surveys and end-of-course student feedback, I developed a formula to calculate the minimum number of points required to complete the course, which is the sum of 100% of Type I tasks, 80% of Type II tasks and 70% of Type III tasks. In all the courses where I implemented this design, students are required to accumulate 76 points worth of tasks for a 6-week course and 152 for a 13-week term course. This system encourages students to show performance for all course learning outcomes, while at the same time giving students choice over the type of task they wish to complete. Please note that if a student does not accumulate the required number of points, they will not be awarded a grade and the course will be marked as incomplete (see Table 1 for example of assessment tasks for one learning outcome from EDER 669.73 Language Learning and Technology).

Table 1: Example of learning outcome and associated assessment risks

Weekly Topic	Digital resources for improving reading and listening		
Learning Outcome	Critique reading and listening resources for EAL students (K-12)		
Assessment Tasks	Type I	Type II	Type III
	Identify a podcast which could be used to improve listening skills. Identify the features that allow the podcast to be used to develop the skill. How can the podcast be improved?	Write a lesson plan sequence that shows how you could implement either listening or reading skills practicing technology. Peer-review a posted lesson sequence. See D2L for details.	Identify a Wiki page for developing reading skills. Identify the reading grade level. Critique the suitability of the page for diverse EAL groups with regards to EDI principles outlined in the readings.

Type I are those learning activities that that include the cognitive domains of remembering, understanding, and applying – see Anderson & Krathwohl's (2001) framework. In my online classes, these include:

1. discussion posts,

2. short, pre-recorded lectures given by students, self-assessment,

3. written reflections,

4. D2L quizzes

5. peer feedback,

6. simulations and games

Type II assessment tasks including the cognitive domains of applying, analyzing and evaluating. They are often problem-based and require students to submit some sort of student-constructed work such as:

1. a short lesson design (or essay)

2. data set analysis

3. quotation analysis

4. case description or report (audio or video format is accepted)

As Type II tasks are designed with higher levels of the cognitive domain in mind, I consider Type II tasks more complex than Type I tasks.

Finally, some learning outcomes require student collaboration and often include the highest levels of the cognitive domain, i.e., evaluating and creating. To assess these learning outcomes, I often design Type III tasks. I try to avoid term-long group projects as I've learned that in an online setting, short group tasks allow all students to participate while mitigating student anxiety that can accompany term-long assignments. Short groups tasks that I have found to facilitate achievement of course outcomes are:

1. Problem-based tasks (e.g., what would you do as a teacher if hypothetically…)

2. A critique of a point of view or lesson

3. Simulations (e.g., as the teacher or leadership)

4. Multiple perspective analysis (offer perspective of different stakeholders)

5. Non-continuous blog (or vlog) contribution through a course on relevant or controversial issues (note that blogs are part of some of my online courses).

Students can opt to respond to these tasks via text (e.g., academic paper) or pre-recorded (video, podcast) group presentation where

all members participate. I consider such tasks to be the most complex.

> **"It was great to choose the tasks that interest us. This actually motivated me to read more about the topic I am working on. For example, some of the discussion tasks were related to my own experiences, so having the opportunity to choose developed a sense of empowerment and engagement."**
>
> Student feedback, EDER 669.27

Implementation

This flexible assessment design gives students choices. If students want to challenge themselves with Type III tasks, they have a choice. But they also have the option to complete a lower-level task if for whatever reason they are not up for the challenge at that specific time, and allowing them to plan out which remaining tasks they must complete. This type of assignment structure allows students the comfort of achieving at their self-perceived level, while completing tasks at all cognitive domain levels. They feel more in control of their learning, promoting higher engagement levels and that's what we are aiming for

From the outset, I communicate all assignments and types in the course outline as well as in the D2L course shell. I also provide a detailed description of how the assignment will be graded. Additional examples of high-quality student work, when possible, are provided on the D2L course shell. Task I type tasks are assessed using a portfolio-based rubric, i.e., all the posts will be evaluated via a rubric

at the end of the course - though feedback is given weekly. For Type II and Type III tasks, feedback as well as a grade is given weekly. I also communicate that students may obtain more than the required number of points but may not be successful in obtaining a passing grade based on their performance, to ensure high-quality submissions.

Students can submit and share their responses to an assessment task with others on the discussion forum (instead of uploading it to a dropbox). Students are then invited to review each other's work and provide constructive feedback to each other and revise their artifacts. Students are encouraged to present or post responses using multimodal means such as video screencasts and podcasts. Students who post their responses multimodally often accompany their content with written text and references. Sometimes, responses to the content are also done multimodally (I try to do the same as much as possible), carrying the scholarly conversation forward. To facilitate access to video technology students may be unfamiliar with, all of my courses include an explanatory "how-to" video that takes students step-by-step through the process of recording and posting.

Implications

I have noticed increased student engagement and an increase in the number of student comments and responses to threads. On the USRI feedback, a student from EDER 669.73 stated, "I think it is much better to have weekly projects: it motivated me to stay on track, it broke down the assignments into bite-size chunks and small projects went along with the readings of the week. It helped to deepen that knowledge and tie the theory and practice piece together. I preferred weekly problem-based projects, rather than a major summative project."

Another student from the same class mentioned, "It was great to choose the tasks that interest us. This actually motivated me to read more about the topic I am working on. For example, some of the discussion

tasks were related to my own experiences, so having the opportunity to choose developed a sense of empowerment and engagement."

I also feel that this new assessment design adds to a course's degree of equity and inclusion. In this regard, a student from EDER 669.27 said "Through the variety of projects that we can choose from, each one of us was able to finish these tasks at her own pace and time." Along with other similar comments, this signals to me that this assessment design evokes a more equitable learning environment as it promotes self-directed learning, which I believe is a prerequisite for an environment that fosters student success

Lessons Learned

Next time I use this flexible assessment design, I plan to offer partial grades for Type I tasks rather than using a portfolio-based rubric at the end of the term. This has been requested by many of my students in their feedback to me. I also feel that while the assessment tasks are aligned with the learning outcomes, they are often disconnected from each other. On the one hand, this is an advantage because it gives students choice to select any task. On the other hand, it does seem that there is a lack of coherence among the assessment tasks. Therefore, further modification and revision is needed to show the connectivity of assessment tasks explicitly.

Recommendations

Reflecting on the design and implementation along with feedback from students I'd recommend that instructors who would like to implement this design (or a variation of it) break larger assessments into smaller tasks that could be completed in a week so that students have a choice of which tasks they wish to complete. Please note that for this design to work

well, all assessment tasks correspond to learning outcomes. Furthermore, although there are more tasks to grade, because responses are often short, I spend about that same time grading as I would have had grading large end-of-course assignments. However, instructors need to set aside time for grading during the week (in addition to instructional time) to offer feedback and grading. Overall, I recommend this assessment design for classes of about 25 students or less.

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Using a "Send-a-Problem" Active Learning Strategy in a Flipped Classroom

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Introduction

This chapter describes an adaptation from a traditional approach to a send-a-problem active learning technique which included the use of a digital collaborative note-taking tool (Barkley et al., 2014). In the traditional send-a-problem activity, each group in a class receives a problem, tries to solve it, and then passes it to another group who also tries to solve it without looking at the first group's answer. After several groups have had a chance to solve the problem, a group reviews the solutions and reports the best solution to the whole class. I incorporated a similar send-a-problem active learning technique into an online graduate-level, psychology ethics course

The ethics course of approximately 26 students prepares students in the school psychology and counselling programs and for professional psychology practice. They learn about the Canadian Code of Ethics for psychologists (Canadian Psychological Association [CPA], 2017) as well as relevant provincial legislation and provincial standards of practice (College of Alberta Psychologists, n.d). Students resolve ethical dilemmas by applying their knowledge of ethical principles to a decision-making model (CPA, 2017).

I designed the course using a flipped classroom approach (Bishop & Verleger, 2013). First, I introduce students to topics before each class with readings

and videos, and then engage in the material during weekly, synchronous sessions with the help of active learning activities. Active learning is defined as, "an interactive and engaging process for students that may be implemented through the employment of strategies that involve metacognition, discussion, group work, formative assessment, practicing core competencies, live-action visuals, conceptual class design, worksheets, and/ or games" (Driessen et al. 2020, p.6). Although lecture is an important component of classroom instruction, it tends to be a passive dissemination of knowledge from instructor to students. Active learning strategies are valuable

> **Active learning activities provide low-stakes opportunities for students to apply learning**

for student learning across disciplines and contexts because students benefit from applying what they are learning (Bonwell & Eison, 1991; Freeman et al., 2014; Rands et al., 2021). For example, a meta-analysis of STEM courses found that students who were in courses that included active learning activities were 55% less likely to fail courses and more likely to get better grades (Freeman et al., 2014).

I had already included active learning strategies in the course, but it relied heavily on case studies and fictional ethical dilemmas. My goal was to diversify the types of strategies I used. After doing some research into collaborative learning techniques, the send-a-problem activity seemed like a good approach for getting students to think deeply about ethics. Ethics can be a difficult topic for some students because there are "gray" areas where there is no right or wrong answer to some situations but decisions must align with ethical principles. Send-a-problem is useful when there are complex problems or when there is no single-answer.

Implementation of the Activity

The send-a-problem learning technique has two parts: a) generating solutions to a problem and b) evaluating the solutions. The purpose of the problem-solving step is to provide students with an opportunity to discuss and learn from each other. The purpose of the evaluation step is to compare and discriminate between different answers. In this ethics course, the "problem" was adapted to be an ethical response to a question: why should individuals follow mandatory COVID restrictions? The reasons had to match to an ethical system, which students learned about in a reading. There were four ethical systems: teleology, deontology, virtue, and relational. The point of the lesson was that ethical systems influence how individuals behave. For example, a variant of teleology holds to the belief that "an act is right if, all other things being equal, it produces the greatest amount of good for the greatest number of people" (Truscott & Crook, 2013, p.5). Individuals who adhere to teleology might argue that we should follow mandatory COVID restrictions because it reduces the spread of the virus and saving lives is more important than the economic cost to society.

For the solution generation, I used Jamboard. In a traditional send-a-problem activity, groups share pieces of paper with the problems written on them, but for the online class, Jamboard was an easier way to share answers. Jamboard is a collaborative note-taking tool developed by Google and is like using a whiteboard (https://jamboard.google.com/). In the last decade, there has been an explosion of technology tools readily accessible on the Internet to aid active learning. More reliable Internet access and greater bandwidth speed bolstered this uptake (Rollag & Billsberry, 2012). Although not completely necessary for online teaching, tools like Jamboard, can allow for more flexible, interesting additions to synchronous sessions.

When someone creates a Jamboard, the creator sends a link to other users who can add content to whiteboards. I had students provide answers to problems using "sticky notes" but users can also draw on and add images to the whiteboards. **Figure 6.1** is an example of one of the boards used for the activity. The problem/question was at the top of the board and then other users provided answers below

The Jamboard contained one board for each ethical system. I then divided the class into groups and assigned them one of the four boards to start. Students had a set amount of time to add sticky notes to their assigned board. After their time was up, the groups changed ethical systems by moving to the next board where they added to the answers already added by the previous group. After all groups had a chance to generate answers for each problem, groups evaluated the answers (e.g., Group A evaluated the answers for Board 1). They identified the best answers, and shared their decision with the large group.

Figure 6.2 provides a flow chart for how to implement the send-a-problem activity in an online setting. It starts with preparing for the activity before the class starts. I explained the task before sending groups to breakout rooms. After they had had an opportunity to solve each problem, they returned to the main room to receive instructions for the second part of the task and then returned to the breakout rooms for a second time. In my process, I developed the problems for the activity, but instructors can encourage students to generate their own list of problems instead.

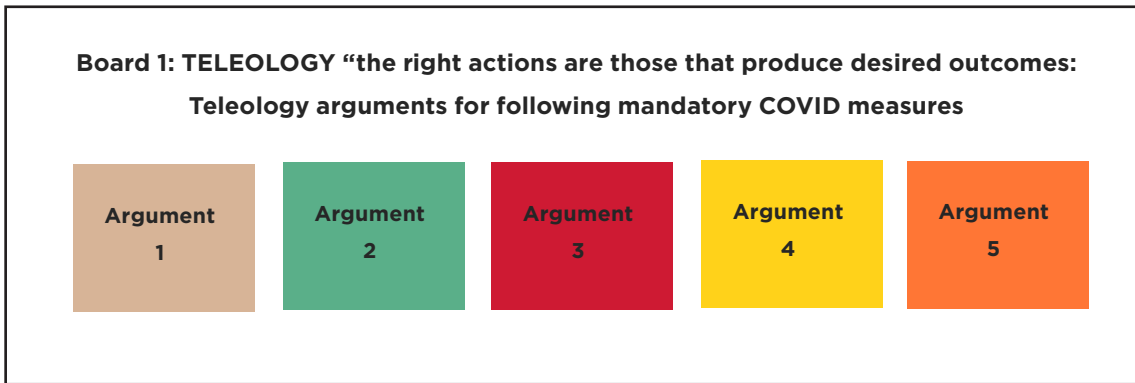**Figure 6.1: Sample Jamboard for the Send-a-Problem Activity**

Board 1: TELEOLOGY "the right actions are those that produce desired outcomes:
Teleology arguments for following mandatory COVID measures

| Argument 1 | Argument 2 | Argument 3 | Argument 4 | Argument 5 |

Figure 6.2: Implementation of Send-a-Problem

Preparation	In class: Main room	Breakout rooms Step 1: Problem-solving	Main room	Breakout rooms Step 2: Solution evaluation	Main room
Introduce the topic to students	Explain the activity	Time 1 Group 1 works on Board 1 Group 2 - Board 2, etc.	Return to main room	Groups evaluate the solutions	Groups take turns sharing solutions to problems on their board
Generate problems on the topic	Send the instructions	Time 2 Groups switch to the next board	Explain the next step of activity	Groups identify the best solutions	Discuss and answer questions
Create Jamboard with the problems					
Write out instructions for the task	Divide into breakout rooms	Repeat until all groups have worked on all boards	Return to breakout rooms		

Fostering Student Success in online Learning

One challenge for online instruction is fostering a community of learning, and social presence is a key element for effective online learning (Swan et al., 2009). Social presence is the degree to which learners feel connected to each other. Earlier in my teaching career, I found that when I initiated discussion with a large group in synchronous sessions, only a few students participated. My sense was that students were worried about saying something incorrect and then looking stupid in front of their peers. I wanted to find a way to encourage student participation by creating a non-competitive, safe space for taking risks with learning.

Using the send-a-problem technique increased opportunities for students to interact with each other in the non-competitive, safe space I wanted to foster. It achieved this goal in several ways. First, the responses to the Jamboard were anonymous. Students could propose a solution without others knowing who suggested it. Second, groups discussed answers first and then added to the Jamboard. This provided a low-risk situation where students interacted with each other to collectively solve a problem. Through discussion, students could clarify misunderstandings in a smaller group first before discussing concepts in the main room. Third, it was the group that suggested an answer which reduced personal responsibility for an incorrect solution. In the large group, students would say, "My group discussed X…" or "My group was wondering…" Lastly, not knowing everything or not having the best answer to a complex problem was normalized because only one or two best answers were chosen out of many so multiple students provided answers that did not meet the "cut".

The activity also fostered cognitive presence, which refers to when learners construct meaning through reflection and discourse (Swan et al., 2009). During the solution phase, students shared information and brainstormed ideas. Students heard how their peers would approach situations and considered alternative perspectives. During the evaluation phase, students compared answers and there was a discussion about why some answers to were better than others. Thus, students were engaging in information exchange and applying knowledge while connecting with peers through collaborative learning.

Implications

Doing this activity requires some advanced preparation. When implementing the activity in Zoom, I learned that students cannot see my screen when they are in breakout rooms so they need to be able to access the task instructions elsewhere. I provided them with a document containing the instructions and steps for completing the task (sent through the Zoom chat or posted in D2L). I also learned that students have different comfort levels with collaborative tools like Jamboard. I demonstrated how to access the Jamboard, how to add a sticky note to a board, and how to move between boards. During the activity, I monitored the activity on the Jamboard and entered breakout rooms if I believed students were confused or were not completing the activity correctly. Lastly, I had to decide how to tell groups to switch problems after their time was up. I put the time limit in the instruction document and sent messages through Zoom to let the groups know when it was time to switch boards. If you use this technique, the time limits given for problem solving will vary depending on the amount of thinking required. A timer can be set when putting students into breakout rooms (see managing breakout rooms).

> **Anonymity of answers can provide a safe space for students to take risks.**

Recommendations

- This type of activity can be used in courses that deal with a variety of complex problems, questions, and issues. For example:

  - How to manage maladaptive student behaviors in an elementary classroom.

  - Solutions to clean energy.

  - Responses to a political crisis.

  - A moral dilemma.

- Consider having students generate their own list of problems for the activity. As the instructor, this will give you insight into what students find confusing. It can also generate discussion about topics in readings that students found interesting.

- Practical tips for implementing this activity:

  - Try to generate problems that are similar in complexity and will require equal thinking time.

  - Make the number of students in each breakout room small enough for discussion (i.e., 3-5). If you need to, you can have multiple small groups complete each problem.

  - Have each group decide on a reporter for the final step so there is no delay in the discussion.

  - Consider making the solutions generated by groups unavailable to the other groups during the problem-solving stage and reveal them only during the evaluation stage.

  - Explore other collaborative note-taking tools that are available for classroom use, e.g., Google docs, Miro. Creating a Google Doc Template for Students

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An online course-based research experience promotes student discovery in insect diversity

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Biological Sciences

Course Level:
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Key Words:
experiential learning; course-based research experience; online hybrid learning; reflection; outreach and dissemination

Course or learning context

Undergraduate, Zoology 435 - Entomology, University of Calgary

Zoology 435 - Entomology, is an elective course for third and fourth year students. Ninety students enrolled in the online version offered in Fall 2020 where they studied and shared their knowledge of

> **In an online setting, students are able to engage in discovery and independent problem-solving as they progress through the research process.**

local insect biodiversity through creating their own insect collection, preparing a class biodiversity report shared with The City of Calgary, and creating an individual science communication piece on Albertan insects.

Lecture learning outcomes on insect biology, ecology, evolution, behaviour, diversity, conservation, and human societal impacts were grouped into two-week asynchronous modules delivered through the D2L course management system, where students watched videos and completed online activities including quizzes and discussion board posts. A one-hour synchronous science communication workshop was held every other week on Wednesdays, alternating with an open-discussion coffee hour.

Students engaged in a three hour synchronous lab on either Tuesday or Thursday led by a graduate teaching assistant. The first two laboratories introduced students to study design, sampling, and curation techniques in entomology. Six laboratories focused on identification of Albertan insects to major order, and to family within the most common seven orders (Odonata, Orthoptera, Lepidoptera, Hemiptera, Coleoptera, Hymenoptera, and Diptera). Students completed activities and assignments during each synchronous online laboratory session, such as readings on the technique or characteristics of the order and online quizzes reviewing key ideas or providing opportunities to practice insect identification using photographs. New laboratory readings and handouts, visual keys, and online quizzes were developed specifically for the online context as students did not have access to field and curation equipment (e.g., nets, forceps, pinning boards) and instead were building their own materials at home, nor did they have microscopes which are required for traditional dichotomous keys. During

the laboratory session, students worked on these activities in Zoom break-out rooms within a group of four to six other students. The graduate teaching assistant (GTA) also led a 30-minute research check-in with each group during the scheduled laboratory. During this check-in, students shared their successes, challenges, and questions, and also helped share advice with their group members. The final two labs were an open drop-in time for students to work on and receive feedback on their final insect collection submission and their science communication project.

Fostering student success in online learning: Overview

With the switch to online learning in fall 2020, I was able to explore how to develop a fully online course-based undergraduate research experience (CURE) for students in Zoology 435 - Entomology, a third and fourth year elective course. Online courses can allow students to engage in course-based undergraduate research experiences (CUREs) (Broussard et al., 2021; Waddell et al., 2021; Flanagan et al., 2022), with an opportunity for projects focused on place-based learning. For the online offering, I redesigned the course so that students explored and documented the insect biodiversity found in their neighbourhoods and backyards. Students created an independent insect collection of both physical specimens and digital images, shared their research with community partners, and created outreach materials to share the importance of Alberta's insects. The goal of this article is to provide a summary of key online aspects of the course that can apply more generally to courses exploring experiential online research experiences.

Design of online course-based research experiences

Online course-based research experiences (CUREs), community-engaged learning, and experiential learning align with the University of Calgary's Experiential Learning Plan 2020-2025 (Kaipainen et al., 2020; Flanagan et al., 2022). Online courses provide similar and unique opportunities to collaborate with community partners and engage students in curiosity, discovery, reflection, and

dissemination – the core design characteristics of high-quality undergraduate research experiences (https://taylorinstitute.ucalgary.ca/undergraduate-research-initiative).

Curiosity and discovery through community collaborations.

An online course can stimulate students to become curious and engage in the process of discovery through asking questions about their local environment or where they are taking their course from. For example, in an entomology context, partnership with The City of Calgary allowed us to obtain permits and permissions for students to explore and conduct research in their own neighbourhoods and parks. The City of Calgary provided ideas and recommendations on where students could contribute to knowledge important for management and conservation efforts, but students were given the opportunity to become curious about the natural environment in their neighbourhoods and in parks. Using this curiosity, students then were able to lead their own process of discovery by choosing where and when to survey insects, and in what ways (through digital images or physically collecting insects). An online environment allowed students more opportunities to take ownership of their work, and ask questions particularly relevant to their local context. One practice that helped stimulate this independent research was providing scaffolding for students to add additional optional information to their study. For example, students also recorded habitat information and plant interactions, and some students opted to collect information on pollinators and their preferences to help answer a question identified by our community partner as important for management.

Synchronous and asynchronous reflection.

Similar to an in-person course, students in an online course can engage in individual and group critical reflection exercises while engaging in the research process where they set goals, identify how the research connects to their lives or future career, and reflect on their learning and research process (Flanagan et al., 2022; Loy & Huh, 2022). The online environment allowed students to set individual goals

and reflect on their work through multiple formats. At key time-points (start, middle, and end) of the project, students completed individual reflection exercises where they evaluated their own experiences, perspectives, goals, learning, and accomplishments. For informal reflection and to build community and collaboration in the course, we used scheduled laboratory times for online team check-ins where students practiced reflection and giving and receiving feedback. During these 30-minute weekly check-ins, students shared what was working well, where they were in need of advice, and recommendations for other students. The Graduate Teaching Assistants led these discussions, and promoted dialogue among the students to support each other in the research process. Graduate teaching assistants used the 3-2-1 format for initial check-ins (e.g., three successes or interesting observations, two challenges or ways that students solved problems, and one question), but found that a more informal format worked better to have students lead the conversation and discussion. Through these meetings, students were able to practice reflection and join a community of researchers while working remotely.

Dissemination to multiple audiences through online platforms.

Community partnerships and citizen science can allow students in an online course to share their work with audiences both within and outside of the course. Citizen science is increasingly being used in higher education to provide students with authentic ways to contribute data, work with large datasets, and connect their learning in courses to their daily lives (Hitchcock et al., 2021). To connect the student research with goals of community-engaged learning, student work was disseminated for multiple audiences. For The City of Calgary, we compiled individual research findings into a single class report that was made publicly available on the University of Calgary's Digital Repository Prism platform

(Summers et al., 2021). To reach an international audience, students engaged in citizen science through submitting 3396 digital observations to the iNaturalist platform. iNaturalist submissions allowed each insect observation (photography and location metadata) to be publicly available in real-time as the course progressed (https://www.inaturalist.org/projects/zool435-insect-survey-2020), with 1,106 of these observations (those meeting the requirements of "research grade") automatically contributed to the Global Biodiversity Information Facility international database (https://www.gbif.org/). For future students, 3474 physical specimens were donated by students to our teaching and research collection for training and student projects.

Since the overarching research goals of the course were within a framework of biodiversity and conservation, a theme and module of the course was science communication and outreach. The online format allowed us to invite both local and international science communication experts to give guest lectures throughout the term. Students reported being particularly inspired by these conversations, and appreciated the opportunity to join together as a class to prepare for the outreach project. At the end of the term, students then integrated their learning to design and develop an outreach piece that answered the question "Why should Albertans care about insects?" These pieces include infographics, videos, podcasts, and activities. We created an online exhibit of the student work, and students provided permissions for their work to be shared only within the course or beyond the course. Those projects that students were interested in sharing with the public can be accessed online through our biodiversity collections website (https://biodiversity.ucalgary.ca/resource/insect-science-communication-gallery/). This online exhibition was particularly engaging for students, as having it online allowed them to share it with friends and family members.

Resources and support for online research experiences

Engaging students in research in an online environment required additional planning and resources to support student learning and development, and to build a collaborative community among students. A few key components are described:

- **Support through joining a community of practice.** Designing this online course-based research initiative was supported by the Taylor Institute for Teaching & Learning CURE pilot program. As a member of the pilot, I was able to join a community of other practitioners, engage in summer training and planning meetings, have the support of a funded research coach, and regularly meet with an educational specialist who also joined some of our instructional team meetings. This support was instrumental to the initial design and implementation of this course design, and I would recommend practitioners interested in adopting a community-engaged or course-based research experience find a community of practice to work with, such as the new micro-credential program in CUREs.

- **Online training resources.** The online format required development of specialized learning activities where students could asynchronously engage in scaffolded training in research skills. An important consideration in designing these training modules was identifying in what ways an online format prevented students from accessing standard equipment, such as microscopes, to complete their work. In this context, training students remotely required building a series of online modules and visual keys. We included instructional videos and manuals to step students through the process of insect collection and curation, and many

students built their own insect collection kits. Without access to reference material, we also created a series of visual-based identification keys and online quizzes specific to insects found in Calgary. Students could use these resources to develop their identification skills and identify the insects in their collection.

Implications

In an online setting, students were able to engage in an authentic experiential course-based research experience (CURE) in their communities aligned with course learning outcomes. This setting allowed students to engage their curiosity to make discoveries in their own neighbourhoods. Through sharing their learning in public databases and online exhibitions, they also took important steps to become local naturalists and members of the biodiversity research community. One unexpected outcome of having this experiential research take place during health restrictions, was that many students conducted this project with family members and friends (rather than other students in the course). Students shared many stories of talking about insects with others, allowing them the opportunity to learn more deeply about insects, connect their learning to their lives in meaningful ways, and practice communicating about science.

> **By conducting biodiversity research in their communities, and with friends and family as co-investigators, students can develop their skills as science communicators in authentic conversations, and allow them to build their identities as scientists.**

Recommendations

1. When designing online research experiences, consider how students' own curiosity can allow opportunities for student-led discovery.

2. Create resources specifically for online learning and training, and consider how students can meaningfully share their work online.

3. Identify if there is a way to meaningful collaborate with or engage community partners in the experience, and provide opportunities for students to connect their work to their community, personal life, and/or future careers

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Engaging Students in High-enrollment Asynchronous Online Courses through Active Learning

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Course Context

In my discussion of active learning in the online environment, I will draw on insights I generated while teaching an introductory level, high-enrollment, asynchronous online course: Introduction to Sociology. The course has an enrollment of 400 students, is foundational for sociology majors and is a prerequisite for all upper-level sociology courses. However, as is the case in introductory-level courses in other disciplines as well, most students enrolled in the course come from other disciplines and take it as an elective. In addition, in the fall semester, most students enrolled in the course are first-year students and new to the university.

A persistent challenge I encounter is the limited Teaching Assistant (TA) support for this course, which means I rely predominantly on content delivery through lecturing and assessments through standardized exams. The format presents unique challenges and through many conversations, I have learned that students find it particularly difficult to stay engaged in asynchronous online classes. They might lack the motivation, time management skills, or time to work through the pre-recorded lectures independently. They would like to have the opportunity to ask questions in class. They miss social interactions with the instructor and their peers. Anecdotal evidence suggests that students are less engaged in online classes, especially those that are delivered asynchronously. Over the last two years, I have developed several strategies that help students develop essential skills to succeed in asynchronous online courses and devised learning strategies that allow students to become active learners and interact with both peers and the instructor regularly.

Fostering student success in online learning

As Freire (2018) reminds us, traditional lectures rely on the banking model of education. Information flows from an active instructor to a passive student, who absorbs the information and reproduces it during an assessment. The traditional lecture still dominates in-person learning at the introductory level. Certainly, students need to be familiar with sociological concepts, theoretical and methodological approaches, and available empirical evidence documenting various forms of social inequality.

However, the traditional lecture is largely ineffective to stimulate genuine learning, skills development, and intellectual growth (Freeman et al., 2014). High stakes testing encourages students to focus on passing

tests and to become experts in test-taking rather than learning. Success is measured solely by way of high grades and Grade Point Averages (Connell, 2019). Moreover, traditional lectures encourage obedience and conformity rather than independent and critical thought (hooks, 2010). Education has transformative potential, but it requires that students become actively involved in the learning process.

Engaging students in the learning process and involving them as active participants rather than passive recipients of information is essential to successful learning. According to Wright (2000), active or experiential learning strategies enhance students' learning experiences and outcomes by:

- engaging students in the learning process in a variety of ways,

- connecting theoretical course material to students' lived experiences, and

- strengthening students' research skills.

As Reschly and Christenson (2012) point out, engaging students requires careful design of learning activities, fostering a positive learning environment, and managing the relationship between the two.

> **In asynchronous online classes, instructors have to ensure engagement with the lecture itself as much as with its substantive content.**

In March 2020, the COVID-19 pandemic forced us to rapidly transition to emergency remote delivery. Like many, I simply recorded my lectures and posted them on the class's Learning Management System (LMS); in my case Desire-2-Learn (D2L). At that stage, I didn't give active learning much thought and dropped all interactive elements. I use in in-person lectures, not sure how to make them work in an online environment. It became clear eventually that I had to evolve from emergency remote delivery to online teaching which, due to class size and other pragmatic

decisions, will have to be facilitated primarily through online asynchronous classes.

In the context of high-enrollment, online asynchronous classes, I understand engagement in two related terms: engagement with the lecture itself, and secondly engagement with the substantive content of the lecture. **Table 1** summarizes key strategies I use to make sure students independently watch the pre-recorded lectures posted on D2L in a timely manner.

Instructor-student contact is essential for student engagement and motivation and an important element of effective undergraduate teaching. While instructor presence is key for students to feel connected and to build an online learning community, in asynchronous online classes establishing and maintaining contact can be challenging (Chickering and Ehrman, 1996). I provide ample opportunity for students to connect with each other and the teaching team, for example, through:

- A Q&A section on the D2L Discussion Board,

- Frequent and flexible virtual office hours. I usually reserve 3 hours a week for scheduled office hours and offer to meet students outside scheduled office hours, if necessary. I use an online booking system through which students can book a slot which helps me to keep track of appointments and the focus of the meeting (e.g., exam review);

- Peer-Assisted Study Sessions (PASS) in collaboration with the Student Success Center. The PASS leader facilitates sessions in person and synchronously online via Zoom. PASS sessions provide students with an opportunity to discuss the course material with the PASS leader and their peers in an interactive way.

In addition to making sure students are prepared for learning, I include ample opportunity for active learning and engagement with the substantive course content, even in pre-recorded lectures. Exercises ask students to connect course content to their own lives and analyze their experiences using course material; apply course material to a new problem; formulate

an argument supported by evidence; and conduct research which allows them to independently develop and thus retain sociological insights. Experience, reflection, and analysis are essential features of experiential learning (Wright, 2000; Hourigan, 2013). Here I will describe a selection of the strategies I use to facilitate active learning in asynchronous online lectures. These strategies are not discipline specific and could equally be employed in classes taught face-to-face. While this paper focuses on asynchronous online classes, most of the strategies discussed here can be adapted with little modification in blended and in-person courses.

Table 1: Making Sure Students Are Prepared to Learn

Strategy	Description
The Learning Management System (e.g. D2L, Blackboard, etc.)	In asynchronous online classes maintaining a well-structured, clear, and easy-to-navigate LMS is crucial. Students should be able to easily navigate the LMS, know how to contact the instructor, find and watch pre-recorded lectures, know how to submit assessments, and have easy access to their grades. Consistency is key here. Each module should have its placeholder in the LMS and should be formatted uniformly.
Orientation Videos	To prepare students for the upcoming semester I create short orientation videos which spell out my expectations but also make clear how I will support them in meeting and exceeding those expectations. I also provide an orientation video to show students how the D2L course shell works. In my experience, orientation videos drastically reduced the number of administrative questions and aided in creating instructor presence, which can be difficult to establish in asynchronous online environments (Stuntz, 2016).
Learning Resources	I provide learning supports, for example short, customized videos that explain how to learn from the assigned readings, how to approach notetaking during lectures, and how to prepare for assessments.
Regular Check-ins	I provide checklists for each module, so students can keep track of the work they already completed and the work they have yet to do. Similarly, weekly emails or posts on the LMS can remind students of the task to be completed for each module, keep them oriented, and make sure they don't overlook key information or assignments (Gillis & Krull, 2020).

Active learning opportunities, such as the ones discussed above, combine well with frequent, low-stake assessments, which when combined with feedback, aid knowledge retention (Schrank, 2016). Indeed, course evaluations suggest that allowing students to collaborate and make their own discoveries were more effective than lecturing about the topic. Based on my conversations with students, the active learning components were often central to student learning. Students shared with me that they appreciated the opportunity to make their voices heard. They noted that applying course material to their own experiences not only made the course material clearer, but also helped them to better understand those experiences. Even though they did not share a physical space with their classmates, the Top Hat discussions created a virtual community and allowed students to engage with and learn from their peers.

Grading

Even in large classes, submissions to the activities described here are graded as participation. A consistent challenge in this context is the grading of

Strategy	Description
1. Using Active Learning Platforms: Top Hat, Kahoot, Mentimeter, etc.	
Apply	Using Top Hat prompts embedded in the pre-recorded lectures, I frequently ask students to think of an example from their own lives that illustrates a course concept. Participating students can view all submitted answers as the goal is to generate as many examples as possible. That will also illustrate the diversity and complexity of social experiences, which is one of the learning objectives of the course.
Survey	I use Top Hat to survey the class regularly. Survey questions may pertain to students' lived experiences, their opinions, attitudes, etc. Prompts to take the survey are embedded in the lecture. Due to the asynchronous nature of the class, students respond to the prompts on their own time. Therefore, in the discussion following the prompt, I use results from a previous semester to unpack survey results and follow up with a discussion of observable trends in the data and critically discuss key course concepts.
Discuss	I also use Top Hat to stimulate discussion between students, replacing small-group discussions and think-pair-share exercises I use in face-to-face lectures. In the discussion, students have to develop their position and support their arguments with evidence from the lecture and the assigned readings. The discussion feature allows students to see their peer's contributions as well as to like and respond to their comments.
2. Using The Learning Management System: D2L, Blackboard, etc.	
Research	Collaboration among students is conducive to learning (Chickering & Ehrman, 1996; hooks, 2010). To foster interaction and collaboration, I use small research activities even in high-enrollment, asynchronous online classes. For example, when discussing gender, one of the TAs had the idea to organize students into groups of 5 using the D2L group function, provide each group with 5 strands of feminism, ask each group member to research 1 strand, and then share their insights with the rest of the group via D2L Discussion Board.
Reflect	When discussing culture, for example, I ask students to take a picture of a typical breakfast they have, describe it, and then discuss the role food and eating play in their culture. They share their insights on the D2L Discussion Board and review other students' submissions. Students then observe their reactions to their peers' food items. Then I ask students to reflect on their experiences and explain their reactions using sociological concepts and theories provided in class in a short, written assignment.

submissions because I usually have no more than 6 TA hours per week. A clear rubric that spells out the expectations for contributions provides students with guidance and makes grading and giving feedback more efficient, even in large classes. If the class is too large to review all submissions, we will often select a random sample of students for each module whose answers we review more closely and provide feedback to those who need to follow the posted rubric more closely. Another option is to provide weekly activities and give students some flexibility in submitting responses, which spreads out the grading load (e.g., submit 4/10 reflections over the semester, etc.).

Implications

In two years of online teaching, I have learned that asynchronous lectures require more careful design to keep students engaged. Here are some of the strategies I use while teaching online.

- Clear assignment guidelines and grading rubrics are essential given that we don't share a physical space where students can ask questions easily and receive answers quickly.

- I use PowerPoint slides to support the lectures but found that I have to give their design more thought because looking at the same slides for an extended period is not very engaging. I limited the amount of text and animate it, so that information appears only when it becomes relevant to my current point. I like to visualize information, for example through images, concept maps, and graphs to convey important information in a non-textual form. I incorporate current examples to illustrate theoretical

concepts and embed short videos to change the pace and illustrate course material.

- Instead of recording a 50 or 75-minute lecture, I post a series of short videos about 15-20 minutes in length. This allows students to stay focused and break longer lectures up into shorter segments that they can watch at their convenience. I list the length of each video in the title, so students can plan their time accordingly.

- To make sure students regularly engage with the lectures and thereby have the necessary foundations for the active learning components I introduced bi-weekly quizzes to ensure students work through the assigned readings and the lecture materials. Each quiz covers two modules. I make the lecture material available at the beginning of the two-week period and students can work through the reading and the pre-recorded lectures at their own pace. That provides structure to make sure the class moves through the material at a steady pace, which is especially important in high-enrollment classes where individual students might fall behind unnoticed, while also providing some flexibility to each student to organize their time within that structure. This structure also allows students to process the material gradually rather than rushing through it at the beginning or the end of the semester, which was a common occurrence when I provided all the lecture materials for the semester at the beginning of the semester.

> **A combination of structure and flexibility can support student learning.**

Recommendations

Communicate Expectations Clearly

Getting students excited to learn is the first step. In my experience, being committed to students' success requires being clear about expectations and providing the skills essential to learning successfully. I start active learning activities in the very first lecture to set the expectation for the rest of the semester.

Provide Safe and Inclusive Learning Spaces

Engagement in active learning requires inclusive and safe learning spaces. I encourage students to take risks and test new ideas, but I also provide very clear guidelines for respectful interaction in Top Hat discussions. For example, we monitor submissions to make sure that they meet those guidelines.

Provide Structure with Built-in Flexibility and Choice

In my experience, high-enrollment asynchronous classes need a lot of structure and a high level of organization. At the same time, it is important to provide students with some flexibility and choice. That can include offering different assignment options to choose from, only counting a certain number of activities toward the final grade, offering several discussion questions from which to select, and offering a variety of engagement methods so they don't become repetitive. In addition, clearly communicating late assignment policies while maintaining flexibility to accommodate unforeseeable circumstances, such as technical difficulties are important in the context of online learning (Gillis & Krull, 2020).

Be Realistic

In high-enrollment courses, especially those with limited TA support it is important to be realistic about grading time. As Chickering and Ehrman (1996) remind us, timely feedback is of the essence in good quality undergraduate teaching. If students received no or delayed feedback, and do not have the opportunity to show they have learned from the feedback they received in a follow-up assignment, the

learning impact of an assessment, especially when learning happens through the assessment, will be limited.

Less Is More

Lastly, the quality of exercises is more important than quantity. The goal of active learning activities is to deepen student learning, not to entertain. Activities and assessments should be intentional and serve a pedagogic purpose. Sometimes, less is more.

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Chapter 9:

Experiential Learning Online: Effective Facilitation of Small Group Activities

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Teaching via computer mediated communication (CMC) introduces a variety of challenges for even the most experienced instructor. Many of the challenges that emerge are the result of the transactional distance that is created between the learner and the instructor and between peers in the learning environment. There is a rich literature that examines both the challenges and benefits of using CMC to deliver online classes. Many educators have noted that these CMC contexts create a type of pedagogical transactional distance, that separates the learner from the instructor (Chen, 2001) and provide a lower richness environment (i.e. th ere are fewer cues to respond to than face to face communication) (Ishii et al., 2019). In response to this transactional distance, instructors must engage in practices that influence learner motivations, engagement, and perceived learning. One way to address this is through an increase in social presence (Mitchell et al., 2021).

Social presence theory notes that moving to an online environment is akin to learning a new language. CMC environments present a lower richness context that miss some of the benefits of face-to-face socialization. Therefore, the instructor must work to foster social connections and provide a cohesive learning environment (Garrett Dikkers et al., 2013). In fact, reducing transactional distance through improved social presence has been shown to increase satisfaction, engagement, and perceptions of student performance in online classes (e.g. Francescucci & Rohani, 2019; Weidlich & Bastiaens, 2018). The social

presence model is integrated around five elements that together determine a participant's motivation to take an active role in learning (Whiteside, 2015).

- Affective Association: The emotional connections between participants. Learners who invest emotionally also become more invested in academic course content.

- Community Cohesion: Seeing the group as a cohesive whole, sharing additional resources and being an approachable group member. Learners who feel disconnected have lower intrinsic incentive to engage with other learners.

- Instructor Involvement: The leadership of the instructor by designing activities, managing the course, and feedback.

- Interaction Intensity: The level of interaction between participants: can be agreement, disagreement, compliments, questions, and acknowledgements.

- Knowledge and Experience: How a group's prior knowledge and experience is shared.

For instructors of online and blended courses, it is important to engage in purposeful course design that fosters a higher social presence. One way that this can be done is through experiential learning activities. This chapter will examine the design, management, and facilitation of experiential learning activities online. We will share lessons learned from adapting a highly experiential face-to-face course on business

negotiations to an online environment, focusing on how these lessons can be applied both in adapting current activities and in designing new small group activities online.

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Experiential Learning Activity

Experiential learning is frequently used in business education, particularly in the form of cases, simulations, and small group activities. These activities provide a simulated environment in which students can put themselves in the shoes of an actor in a business situation, and in doing so, develop strategies to address business scenarios. Integrating small group activities into the classroom provides space for richer discussion, more opportunities for individuals to participate, leads to deeper understanding of materials, and promotes perspective (Roehling et al., 2010).

Business negotiations is a senior level elective course taught in the Bachelor of Commerce and MBA programs with an enrolment of no more than 40 students. In each class session, students participate in a simulation where they are expected to negotiate an agreement with other students in the course. Negotiations range from 30 to 90 minutes in duration, and are conducted in pairs (one-on-one negotiations), teams (two to four students negotiating as a team against another team), and multiparty formats (four to six students in a negotiation each with unique roles). A typical class begins with the negotiation simulation, moves to a debrief of the simulation, and is followed by a lecture on key concepts that are highlighted within the negotiation simulation. While

this course has typically been taught face-to-face with students physically divided into small groups, moving this activity online, we identified three central dimensions that must be adapted for online success: (1) Designing the task and setting the stage; (2) Assigning the actors; and (3) Monitoring the action. The remainder of this chapter will highlight important considerations for successfully facilitating online group activities. To guide the discussion, we will focus on the three aforementioned dimensions and how they relate to increasing social presence, the primary activities involved in each dimension, as well as the virtual tools available to the instructor (**see table 1**).

An important consideration when conducting online courses are the digital tools that are available to the instructor. These tools provide a means of organizing the course, curating materials, and communicating in the course. There are a variety of different tools that may be available to the instructor at their institution. For the purposes of this chapter, we will refer to tools that were available at the University of Calgary or freely available online. For our courses we used Brightspace (D2L) as our learning management system (LMS), Zoom as a synchronous meeting tool for classes, and Miro as a collaborative whiteboard. Other tools may be available, and we would invite the reader to explore the available tools and features at their own institutions.

Designing the Task and Setting the Stage

Design and planning are important parts of any in-class activity, perhaps doubly so in the virtual classroom. This task requires the instructor to consider how the activity will evolve over the course of the class session. It is critical in the online context that the steps are mapped out with respect to both content and technology. Thoughtful consideration needs to be given to how materials will be distributed to participants. For example, in a face-to-face course the instructor can provide handouts at opportune times in class. When moving online, it is more important that these materials are prepared in advance and that considerations are given to their release during class time. Moreover,

Table 1

	Social Presence Dimensions	Primary Activities	Virtual Tools
Designing the task and setting the stage	Knowledge and Experience Interaction Intensity	Content Sharing Planning group sizes and timing	Word/PDF documents Digital simulation materials
Assigning the actors and conducting the activity	Community Cohesion	Identifying expertise and skill sets Communicating activity timing and group sets Communication tools to facilitate group interaction and collaboration Providing the virtual space	Email D2L Zoom break out rooms
Monitoring the action	Instructor Involvement Affective Association	Mapping and monitoring progress Instructor level of visibility/ invisibility Maintaining focus and progress	Zoom break out room Miro whiteboard

it is important that these materials can stand on their own without instructor clarification, so greater detail and instruction may be needed in the materials themselves. The LMS system can be used to present asynchronous activities that can be prepared in advance of class, can be used to time the release of different parts of an activity, and can be used to allocate different activities to different students. While in a face-to-face class, one can simply print three different versions of an activity and hand them out to different students in class, an instructor must be more purposeful online. This speaks to the importance of the knowledge and experience element of social presence. Using an asynchronous pre-class activity can provide different participants with different knowledge pieces that can bring different perspectives to an argument, different roles in a simulation, or different positions in a debate. As an example, during the first negotiation of the semester a few learners are randomly selected to present an aggressive first offer to their counterpart. As this is the first class, the instructor must first explain how the negotiation simulations work, and then how the learners should prepare for the negotiations. Selecting a few learners to receive additional information is easily facilitated by the instructor through private messaging the selected students and directing them to a specific folder on D2L with further material and a video explaining what to do with the new information.

A second consideration is how learners will communicate with one another during the activity. Within the virtual classroom the instructor must anticipate the needs of the learners to communicate and collaborate, and provide them with the tools necessary to do so effectively. To this end, the instructor can leverage synchronous meeting tools, such as Zoom, and consider the features that learners may need to collaborate. This means mapping out the size, frequency, and makeup of the breakout discussion groups and considering the resources that they may need to conduct a discussion (e.g., virtual whiteboards, screen sharing). Considering the interaction intensity is important here. At this point the instructor will want to consider the types of activities they are fostering. Are we expecting

learners to work together towards a particular goal or solution (i.e., agreement) or are we setting up places where they will be deliberately in opposition (i.e., debate)? These considerations will determine the size, the makeup, and the tools that will be used for this. For example, a video-based discussion with cameras on will create a higher level of interactive intensity than an asynchronous online discussion board. Both tools could be used to foster both agreement and disagreement, with different levels of intensity and engagement. An example of leveraging different tools to facilitate communication happens with the team negotiations held during the course. Learners often use breakout rooms in zoom to discuss group strategy both prior to the negation as well as at select times during the negotiation. The strategy sessions require the privacy and richness of communication provided by the breakout rooms. This is contrasted with the need to communicate quickly and efficiently during the actual negotiation, which is facilitated through the chat function in Zoom. Anecdotal evidence from business professionals suggests that actual online negotiations employ similar strategies.

For this negotiation course, it was evident that a greater degree of design was needed. In past in-person course delivery, setting the stage was a relatively informal process where different roles were handed out in class, timelines were fluid, smaller subgroups would be formed organically. Designing the task and setting the stage required significantly more planning and forethought in the virtual classroom. Based on a significant amount of trial and error, we have determined that the best way to organize the activity was to create a spreadsheet prior to each simulation that 1) assigned learners to different roles and 2) identified the negotiation pairs and groupings with contact information for each learner. The case was then distributed to learner via email during the initial set up time. The instructor set the stage with a focus on the process and timelines that were mapped out and provided to learners in an electronic copy. Using email had some advantages for distribution, as the case is at the top of the learner's email, and they can provide real-time feedback if they do not receive the case. However, a LMS with timed distribution could also be used.

Assigning the Actors

When people are gathered in person there are many ways to organically divide them into smaller groups – elbow discussions, think-pair-share, table groups, and world café are just a few of the notable ways that organic groups may be formed. As noted above, in an online context, instructors must be more purposeful in how they assign students to groups. The Zoom platform allows the instructor to randomly assign people to groups, invite them to self-select by topic by opening break out rooms, or pre-assign groups in advance.

In this second design phase, the instructor must consider how the activity will be managed. Historically we used a more organic approach to group assignment. For example, for one-on-one negotiations the instructor would simply ask everyone with one role to raise their hands, and a person with the other role was asked to walk over and find the negotiating counterpart of his/her choice. In the virtual classroom assigning the actors requires more forethought. We found the most efficient way to assign the actors was to use a spreadsheet that pre-assigned students to negotiation groups and identified predetermined breakout rooms. This spreadsheet was shared with the class in advance. One drawback of this practice is that it creates rigidity because the learners have been pre-assigned to groups and breakout rooms. If learners are not able to attend the class, the instructor will need to reassign students to both negotiation groups as well as breakout rooms (a TA can be helpful for this). A key benefit of the online environment is that breakout rooms are easy to create and are nearly limitless in numbers. This allows participants to work in private rooms where they can maintain focus, minimizes the physical time to move around and find rooms, and overcomes the resource constraints of not having enough breakout rooms to conduct the activity in the physical classroom.

From a social presence perspective, this stage offers the instructor the opportunity to think about student cohesion. Simulations, such as this, often offer the opportunity for students to work together towards a common goal or target in addition to achieving a learning objective. The instructor can consider how to foster a shared vision. This may be achieved by assigning actors to reconnect with one another during the simulation. Students may be given the opportunity to debrief along the way, or they may be provided with achievement targets, such as a certain revenue figure or point system. As an example, in a different simulation, students were tasked with playing against a computer over five decisions rounds, each round representing one year of a business. As students complete a round and receive a score, these scores are shared with the whole class. This sharing provides a benchmark which tends to elicit virtual high fives from groups who are leading and added motivation to trailing groups. The creation of a shared goal tends to facilitate group bonding, even when they are not in-person.

Monitoring the action

When conducting small group activities, an important part of managing the class is judging and evaluating the progress of each group. When in person, the instructor can pick up on cues by simply walking around and listening in, to see if groups are on task, how they are progressing, and provide guiding feedback as needed. Instructors must decide how much involvement they want in this process – is it best to let students flounder or are gentle guiding prompts appropriate? In online learning environments, the instructor must be more purposeful in their involvement. For example, if the instructor simply appears in a breakout room, it can break up the flow of the discussion as students may feel the need to address the instructor. When considering how to monitor the action in the breakout rooms there are a variety of different considerations. First, it is important to set the expectations for the group.

Before the first break out room in a virtual class, we set the expectation that you can ignore the instructor. It is not necessary to address us when we come into the room unless there is some value to you. Second, setting expectations for the amount of time that students will be in breakout rooms and then using the messaging feature in Zoom to provide time checks and updates can help keep groups on task. Finally, we have found that a central whiteboard application, like Miro, can provide the instructor with a tool that can be monitored without joining the rooms. For example, setting up a Miro board where students can add sticky notes, is much like walking around the room and observing what is being written on a physical whiteboard. We also observe a stronger degree of affective association when students are broken into groups. Students who leave their camera off in the large group discussion, often turn them on in small groups. As instructors are engaging with these smaller groups, it often provides a richer context to interact and engage with the students as well.

In the case of the negotiation simulation, we also discovered that there were some elements of the virtual space that made it easier to run. First, in some of the simulations the instructor played a role; this included providing timely information or taking a

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vote on a proposed resolution. In this instance, the use of virtual breakout rooms made facilitation easier as the instructor could simply join the virtual room, rather than having to physically travel to each of the breakout rooms dispersed throughout the physical building. The second benefit is that the instructor has

full control of the breakout rooms and can ensure an efficient end to the simulation at the predetermined time. In this case the instructor simply "ends the breakout rooms" in Zoom and all of the students are taken to the main room. This is more efficient that waiting for groups to finish the simulation or trying to physically track them down as they are dispersed throughout the building.

Conclusion

There are many benefits to running small group simulated activities in a virtual context. In a fully online course, they provide an opportunity to foster stronger social presence among student participants. While at first, they may seem more challenging to run and design, with purposeful design these simulations can provide a rich learning environment that can often be easier to manage and control than their offline counterparts. In fact, following the experiences of running this online group simulation, one of the authors was running a different simulation in a face-to-face class and chose to run the simulation virtually instead. The virtual context provided more control over the timing, made it easier to manage without having to book multiple rooms, gave the students the freedom to work where they wanted and using additional resources as needed, and made it easier for the instructor to drop in and engage with student groups as needed.

Recommendations

What we have endeavoured to show here is that:

1. Many experiential activities designed for the in-person classroom can be modified for the online classroom, and in some cases may even be improved.

2. Facilitating experiential activities in the online environment involves thoughtful planning and preparation regarding material distribution and the flow of the activity.

3. Effective online delivery of group activities can be facilitated by developing an advanced understanding of the online platforms available and the features that can be used.

   - How the tools can enrich spaces for learning.

   - How the tools can facilitate communication between all parties.

   - How the tools can be used to manage and monitor the activity.

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Final Thoughts

The chapters in this guide provide a wonderful palette of ideas for fostering student success in online courses. In conclusion, we offer the following questions to further prompt your thinking about online learning environment and how you might structure it for a rich student learning experience:

- How might you provide quality feedback to students in online courses while considering grading efficiency and instructor well-being?

- How might you leverage the online environment to bring in outside experts in the field?

- What Open Education Resources might be used in your course to support student learning? What OERs could students create in support of peer and their own learning?

- How can you promote human flourishing in online courses, for both students and yourself, through the principles of presence, connection, and authentic learning?

- How might you use eportfolio assignments to promote student reflection?

- How could flexible assessment design promote student engagement and autonomy in your online course?

- What learning technologies are available that:

  - Enhance student engagement and active learning? Encourage student self-monitoring and self-reflection?

  - Enable feedback in different modalities, such as video?

  - Facilitate peer feedback?

  - Streamline the process of collecting, organizing, and storing student grades and feedback?

- How might you structure course-based undergraduate research experiences in online courses? What strategies might be implemented for students to share their research within the online course, and outside of course boundaries?

- How might you employ active learning strategies in large-enrollment online courses?

- What strategies can you use to help keep students on track in large-enrollment online courses?

- What does experiential learning look like within your disciplinary context and how might it be implemented in your online course?

- What strategies do you have for building community and enhancing social presence online?

We hope this guide has sparked some new ideas you to try in your online courses and allowed you to gain new insights into opportunities for enhancing student learning in online courses.

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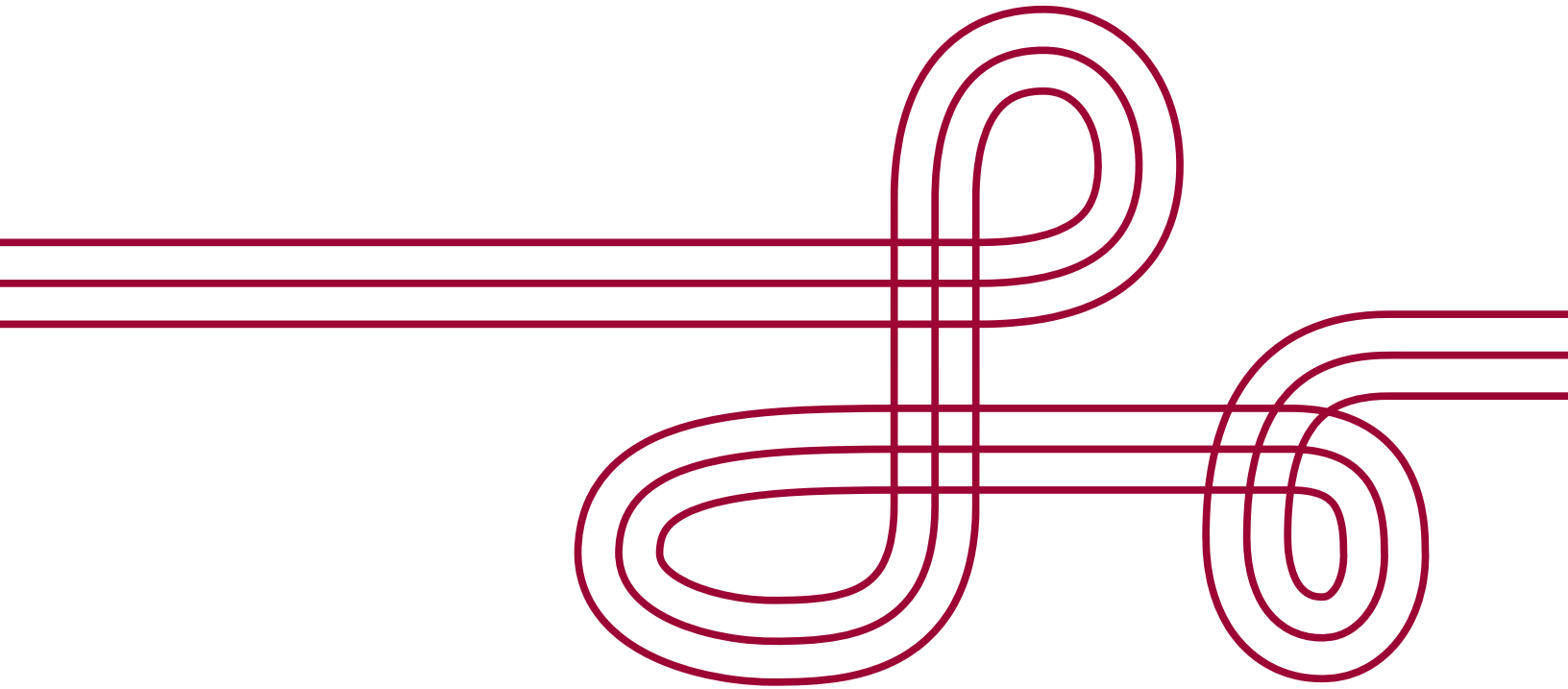
The **Fostering Student Success in Online Courses guide** is available on the Taylor Institute for Teaching and Learning website.

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