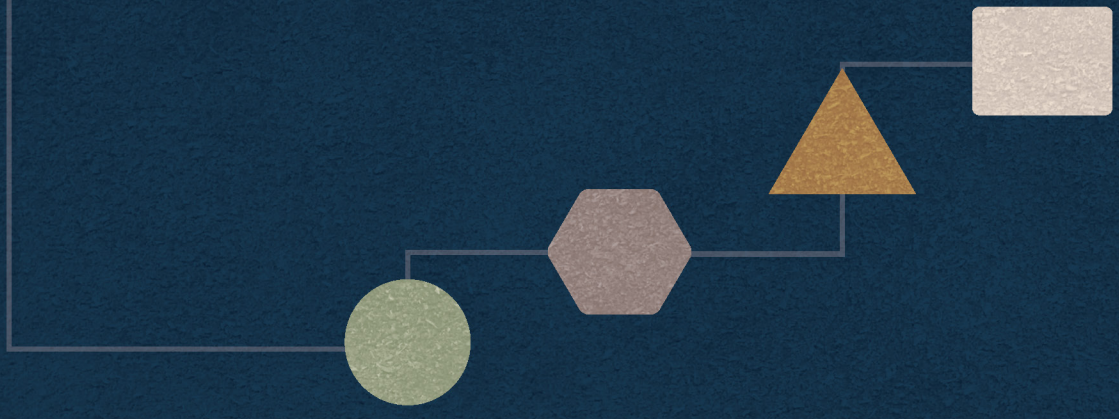
CREATING A VIGOROUS [ONLINE] COURSE

A STEP-BY-STEP GUIDE



BERLIN FANG

CREATING A VIGOROUS ONLINE COURSE

CREATING A VIGOROUS ONLINE COURSE

A STEP-BY-STEP GUIDE

BERLIN FANG

BRIDWELL PRESS
Southern Methodist University
Dallas, Texas

Bridwell Press is the professional publishing arm of Bridwell Library
(SMU Libraries and Perkins School of Theology)

SMU Libraries SMU Perkins School of Theology

Design by Alicia Beebe

Printed in the United States of America

ISBN: 978-1-957946-49-8 (ebook)
ISBN: 978-1-957946-50-4 (paperback)

Contents

Foreword

DR. BERLIN FANG, the consummate translator, fairly soars in this remarkably clear translation of the complexities of online course development into clear, simple, actionable strategies. It is hard to imagine a better resource for building an effective, student-friendly online course. Even for the seasoned practitioner of online instruction, *Creating a Vigorous Online Course* provides a surprising variety of proven strategies for improving one's online teaching.

Because I have seen up close for a decade Dr. Fang's unique way of helping faculty in need of assistance with technology, it doesn't surprise me that *Creating a Vigorous Online Course* is such a treasure trove of practical advice. The book is the product of years of personal experience, deeply informed by current research in the field of online learning.

If a book can have a "bedside manner," this one has it in full measure. In an eminently readable style, free of unnecessary jargon, the book patiently guides the reader toward the goal of creating a course that not only achieves the desired outcomes; it does so in ways that respect and enhance the personal, human, and humane dimensions to intellectual discovery and deep learning.

With patience and intelligence, the author guides the reader through the essential steps that lead to a functional online course. Yet the book is more than a practical how-to manual. While passionate and persuasive in his embrace of online learning, the author never loses sight of the essential fact that technology is a tool, the vehicle, to authentic human interaction, never an end in itself.

Through *Creating a Vigorous Online Course* Dr. Fang offers a window into the promising world of online learning that is both eminently practical and deeply respectful of students' diverse needs.

All teachers, including those who work exclusively in traditional classroom settings, are sure to find in this volume a bounty of excellent suggestions for enhancing their students' learning experience.

Darryl Tippens, Provost Emeritus
Pepperdine University

Introduction

I HAVE BEEN AN INSTRUCTIONAL DESIGNER since 2005 and I have helped numerous professors move their courses or programs online. One thing I learned is that nothing is impossible in online teaching, but everything can be challenging. Schools have varied ways to develop courses. Some hire instructional designers to take content from subject matter experts and turn it into courses, and others train teachers and equip them to develop courses themselves.

While working with faculty on courses, I try to find books on online teaching that can be used as handbooks. However, I found that some books are too conceptual about online learning, not touching the nuts and bolts of actual applications. At the other extreme, some books are collections of tutorials for a particular platform or learning management system. The bad news is that such content becomes obsolete when the technologies evolve, which is happening all the time. Besides, without learning things about principles in various aspects of online teaching, all the hands-on tutorials only teach you concrete functions and features, but not how they can be used to facilitate learning. They do not make teachers' work easier.

Well, since I could not find one that combines theories and practice, I thought I might as well create one. I am especially passionate about applying sound principles for online learning to learning management systems, which are the default platforms for hosting learning online in schools and universities.

For years, I facilitated a "boot camp" to help teachers develop online courses. The boot camp consists of presentations about online teaching and activities for teachers to complete. By the end of the boot camp, most teachers have learned the basic "grammar" of online teaching, developed a basic structure for their courses, and become acquainted with tools for course development and facilitation. I have been tinkering at the boot camp program from year to year. This book is a natural result of such effort.

I am also a literary translator and I often use translation as a metaphor. In translation, we seek dynamic equivalents, not exact cloning of words from one language to the other. We make sense of the sentences in the original language, we unbundle them, and reassemble them in novel ways. Eventually, I try to make my translation

read as if this is what William Faulkner or Betty Smith would write if they had been fluent in Chinese. Turning a course from its traditional format is a similar process, you want to achieve the same amount of learning, but you are constantly seeking dynamic equivalents, not carbon copies of the same things you do in the classroom.

You can follow the instructions and steps in this book to develop or redesign a course for online teaching and learning. It can be used by teachers at all levels, from K12 to higher education. Unless specific situations call for a different type of usage, I will use the generic term "school" to refer to different learning institutions, including K12 schools, colleges, and universities. I will use the word "teachers" to refer to various kinds of instructors, including college professors. While institutions vary, best practices of online teaching for each type of educational institution often overlap. I write to benefit the greatest number of educators. Even if you teach in a face-to-face, blended, or "hyflex" modality, you will find some of the chapters useful.

For each chapter, I will include ideas for you to consider and tasks to complete. The book is "platform agnostic," catering to teachers' needs using Canvas, Blackboard, Desire2Learn, Sakai, Google Classroom, Schoology, and other platforms. However, I may use a particular system when giving illustrations though other systems often offer similar functions or features.

This book follows the backward design principle, discussing outcomes and assessments first, followed by content delivery and instructional strategies. The chapter arrangement reflects the types of support teachers seek most from instructional designers. Each chapter focuses on one area of online teaching and usually provides a few tasks for you to complete. Please complete each task. As you complete the task, your course grows. By the end of the book, you should have the basic structure of a course and a sample module that you can use as a prototype for the entire course.

This book bridges the gap between conceptual thinking and practical application in online teaching. Dive deep into the foundations of effective online pedagogy, exploring the intricacies of learner engagement, community building, and assessment in the digital space. But don't get lost in the abstract – the book also translates these concepts into actionable strategies, demonstrating how to apply them within the specific context of a Learning Management System (LMS). You'll gain a clear understanding of the "why" behind the "how", empowering you to make informed decisions and leverage the full potential of your LMS to create transformative online learning experiences that truly resonate with your students. Whether you're a seasoned online educator or just starting your journey, I hope you can gain something from this book.

As you follow the chapters and tasks, I as an instructional designer often hope it is a linear process, following a cascading model of program alignment, objective planning, course mapping, assessment planning, unit, or module planning, down to the design of learning materials, activities, and interactions. The reality is messier: Course design is often iterative and incremental. As you develop content, you will often find yourself having to go back and revisit some of your assessment or interaction activities, and vice versa.

Course design and development can be challenging and often frustrating, but that's okay. It is a creative process: Through your work, you get to create something out of nothing or from a vague idea. You bring order and clarity to content chaos for students and help them grow in knowledge, skills, and helpful attitudes. By the end of the book, you will have a product you can use, revise, and reuse, often for years to come. You will also have a product that can be tailored for different audiences. There is great joy in this process. I hope this book will inspire you to make your course both rigorous and vigorous, a course that meets learning goals while engaging students along the way.

This book is not possible without the help and inspiration from many colleagues and friends. I want to express my deepest gratitude to Barbara Penney for her meticulous editing of this book. Her invaluable advice guided my revisions significantly. For years, Barbara has helped me edit my writing with great care. I once had Barbara as my writing professor, without knowing that she will remain a teacher for me for life. I am so thankful to her.

I am also profoundly thankful to Leah Wickersham-Fish for generously reading and offering insightful feedback throughout the writing process.

My colleagues at the Adams Center for Teaching and Learning at Abilene Christian University deserve special recognition for their contributions and unwavering support for this book. Particularly, I would like to extend my sincere appreciation to Jennifer Shewmaker, Laura Carroll, Amy Boone, Cliff Barbarick for the invaluable workshops they facilitated at the center.

I am further indebted to my colleagues at the University of St Augustine for Health Sciences, notably Maria Puzziferro, Raj Sen, Joel Rahn, Marissa Pardo, and Fernando Tazoe. Their pioneering work in leading program or course development and media design has been a constant source of inspiration for my understanding of effective online teaching practices.

A heartfelt acknowledgment goes to my children, Frank Fang and Faith Fang, for their crucial contributions. As students themselves, navigating both high school and college online courses, their perspectives proved invaluable throughout the writing

process. I frequently sought their feedback to validate or refine my assumptions, and their insights from the student viewpoint significantly enriched the manuscript. Faith, with her years of experience taking online violin lessons before the widespread adoption of Zoom, offered a unique perspective and unwavering enthusiasm for online learning. Both Frank and Faith give me confidence and hope for the future of online learning.

01 Get Ready

You may be happy teaching in the classroom, and why should you worry about online teaching? If this is the first question that comes to your mind, you are not alone. For decades, online teaching remained an option, but many educators had not found the need, motivation, or resources to try it until it was absolutely necessary. Some start to develop one because the principal or the department chair asked for it. I strongly believe in the value of online teaching, and I believe that once people learn to use the tools for online teaching, they will continue to use all or some of them in future teaching.

The Case for Online Teaching

Online teaching has a reputation for helping people overcome barriers in time, space, pace of learning, and it also provides as well as reducing the financial, professional or personal cost of learning. Adult students may have full-time jobs that do not allow them to study on campus at regular times. In a residential school, students may select three courses and not be able to fit the fourth one into their schedules. Students going home during summer vacation may not be able to come back to the campus to take summer courses. Similarly, schools in remote areas may not be able to find suitable local teachers for certain courses. Some students live far away from campus and find it difficult to go to school for several hours of class each week. Due to these barriers or inconveniences, students cannot complete the courses in one semester, fail to graduate on time, or even drop out of school. With online courses, many of these barriers disappear. In any of these scenarios, online teaching does not emerge as an across-the-board replacement of an earlier modality, but as an alternative to fill gaps, and as such, it will continue to thrive and evolve. For schools, online teaching helps with student retention, especially in higher education, as instruction can now reach areas that have not been traditionally served.

There is also a pedagogical case for online teaching. When courses are partially or completely online, students can spend more time with video lectures if they fail to comprehend certain content the first time. Students can take low-stake quizzes multiple times to better process the material presented. Introverted students feel liberated by online formats of discussions in which they are less intimidated by public speaking, thereby contributing high-quality responses. Teachers can use online teaching platforms to communicate with a large class, specific groups, or individual students. Teachers can individualize and personalize content, assessment, feedback, and interaction. Online teaching can show a student's learning progress using learning analytics so that teachers can intervene before it is too late to do anything.

Online teaching also benefits you, the teachers. Often when people talk about online teaching, they wave the flag of "student-centered", which is all great, except when they ignore the needs of teachers. Teachers are busy, with schedules packed with classes, office hours, research, writing, committee meetings, and so on. Why would you dedicate time to develop an online course? To put it simply, because you care about student learning and you want to do it right. Besides, it is an investment that will come back to serve you later on. For instance, you can post documents and instructions online to reduce the busy work of printing and sending the same document repeatedly to the students who forgot or lost what you gave them earlier. You can administer online quizzes that can be graded automatically, saving time and drudgery. For the grading of standardized tests, a learning management system usually completes the task more efficiently and accurately, liberating you to do what you do best. You can use technology tools such as online annotation or media comment tools to grade student work effectively and efficiently. Another benefit is that you can reuse courses or course components from semester to semester with some modifications. Once you have mastered a tool for online teaching, you can apply it in other teaching situations. The process of designing online courses also helps you to reflect deeply upon your teaching methods, thus making you better teachers in all settings, whether online, face-to-face, or hybrid.

Before I proceed to discuss the creation of an online course, I would like to comment on the general preparation you will need to shift to online teaching. In most cases, great teachers are great in either online or face-to-face modalities, but there are enough differences in the modalities to warrant some deliberate preparation.

Join A Learning Community

There are many great communities of practice where you can share ideas and find methods. Explore their websites or subscribe to their mailing lists. You may be struggling with an issue others have already faced, and they may have the solutions you seek. In my experience, most online teaching communities are extremely helpful and positive, free from the toxicity that can sometimes be found in other online spaces. You will find that people are very willing to share what they have learned. I don't know what group altruism looks like, but I find it everywhere in communities about online teaching pedagogies. Here is a list of some of the communities.

- **Online Learning Consortium** (OLC, onlinelearningconsortium.org). The Online Learning Consortium (OLC) is a membership

organization for institutions and individuals involved in online learning. The OLC offers an online community where ideas are exchanged.

- **POD Network** (https://podnetwork.org/) is a national organization of professionals involved in faculty, graduate students, and organizational development. Though this community serves mostly faculty developers, many members are instructional designers and teachers who excel in course design.
- **Educause** (https://www.educause.edu/) is a non-profit association that provides leadership and support for the advancement of higher education using information technology. Educause is an online community for educators, including one for online teaching.
- **The International Society for Technology in Education** (ISTE, https://www.iste.org/) is a community for educators. The community offers members access to ISTE's resources, as well as the opportunity to connect with other online educators.

You may also benefit from open-mindedness to ideas and practices from other countries. For example, some countries used synchronous instruction in online teaching, which has been frowned upon by instructional designers in the US because the synchronous format disregards the value of learners' flexibility. However, the modus operandi of asynchronous teaching is rooted in the deficiencies in bandwidth, storage, and poor online meeting tools of an earlier era. As technologies advance, some earlier concerns with synchronous teaching are no longer relevant. By observing what happened in other countries, we can learn valuable lessons and best practices about synchronous teaching that helped us conduct faculty training in the United States.

The cross-pollination of ideas also happens elsewhere in the world. Years ago, I attended a conference organized by the World Summit for Innovation of Education (WISE), an international organization that explores opportunities for educational innovations. WISE played a pivotal role in helping to spread ideas for teaching by organizing forums and publishing podcasts or whitepapers. They helped educators around the world disseminate their creative solutions to educational problems to a host of countries. Although not everyone in the world has reliable Internet access to implement the teaching ideas in this book, progress is being made, and I see governments, international organizations, and for-profit or not-for-profit organizations collaborating toward increasing access to education. In the Peruvian Amazon, for instance, UNICEF installed loudspeakers to broadcast lessons to communities

without the Internet (Alcázar, 2020). As more and more communities move to the Internet, those of us who have experience designing or teaching online will have opportunities to extend helping hands across the globe.

Get a Toolkit

You may not be able to develop a course in a few hours or in a day; however, knowing which tools and resources are available can speed up your development. Most schools now provide templates teachers can use to quickly adapt to online teaching. For instance, many schools have sample online course modules, welcome pages, help pages, and video tutorials that teachers can easily import into their courses and customize to suit their own needs. Remaking the wheel is unnecessary if something already exists in your university. It is desirable for you to make use of such resources to provide a consistent learning experience for students.

As you develop your toolkit, learn the technological tools that are available for teaching in case of campus emergencies. Find out about tools for synchronous teaching (such as Teams, RingCentral, Zoom, Canvas Conference, WebEx, Google Hangouts, and Skype), learning management systems (such as Canvas, Blackboard, Moodle, Google Classroom, Desire2Learn), tools for video production (such as TechSmith, Panopto, and Kaltura), and tools for file sharing (such as Google Drive, Box, and Dropbox). You and your students need to have practiced using these tools. You may also want to schedule a remote learning day on which you teach from home using these tools.

Develop a Plan

You may have started using certain tools for the first time to deal with an emergency, but it will benefit you to keep using some of these tools for face-to-face teaching. This will make it easier to have a plan for the "rainy days" of teaching when you need a quick pivot to an online teaching mode. Here are some tips for changing your face-to-face teaching to better prepare for sudden shifts to online teaching:

1. Update your syllabus to reflect changes in the teaching method.
2. Communicate with students about whether and how you will teach when the campus is closed.
3. Back up documents in case of system failure.

4. Maintain constant communication with students.
5. Optimize your instructional activities for online teaching, considering which activities can be moved online or offline without hurting the effectiveness of teaching.
6. Post documents that can be easily accessed on mobile devices as some students may not have easy access to computers where they are.
7. Post announcements or videos as quick responses to issues students are most concerned about.
8. Balance synchronous and asynchronous teaching.
9. Use your learning management systems to assign, collect, and grade student work; and
10. Balance functionality with student needs when you choose tools for teaching.

Get Trained

It is never a waste of time to sharpen the ax before you cut the tree. Training is extremely useful as you ponder shifting in modality. Do not just go into development before you learn anything about the differences in tools and methods of online teaching. You may waste a lot of time starting on a journey without knowing what the journey will take.

Your institutional setting may have various training opportunities for learning to teach online either temporarily or for long periods of time. The formats of training can include summer programs, workshops, single training sessions, tutorials, or courses that your school purchases from vendors like LinkedIn Learn. You can also obtain one-on-one coaching with a professional in your school who is responsible for online teaching: a distance education specialist, an instructional designer, or an educational technologist. Whatever resources your school has, make good use of them.

During training, your trainer may teach you only the functions and features of a tool, so it is your responsibility to apply them in your teaching. When you get training, consider changes you could make to your teaching. No technological tool can fully replace us as teachers (thankfully). Rather the tools need to be integrated into your teaching activity in a manner that makes sense for you and your class.

Not all teacher problems can or will be solved through training. In some cases, efficient support from well-trained professionals is the best course. For example, there are certain tasks you perform only once a semester -- e.g. how to cross-list

courses, how to create a course, and how to add teaching assistants -- and you may not remember how you do them the next time around. You should reach out to your technical staff for help without hesitation or guilt. These tasks that are rarely performed by you may be performed by other professionals routinely and at ease.

Adjust Time

Teaching in schools often revolves around seat time, credit hour, or the Carnegie hour. Colleges and universities may require instructors to fulfill 45-hour teaching requirements even for online teaching. Eventually, you as the instructor decide what to do to fulfill such requirements once courses move online.

When a campus is closed for a short time due to inclement weather or other temporary situations, some teachers simply cancel their classes to give students a break, not necessarily finding alternative teaching methods. However, use technology to teach if the disruption is likely to endure. This requires creative ways to deconstruct face-to-face teaching and reconstruct it for alternative delivery methods.

Some face-to-face instructional activities are not easy to replicate online; they require you to find creative solutions. Believe me, you can! In the universities I have worked for, I have seen how teachers move art or even physical education courses online. Shifting a course online will also provide additional opportunities for you to rethink your teaching. For instance, you may use peer reviews for students to review each other's work or Turnitin to help students check their writing.

Teachers sometimes overcompensated for the time they perceived as lost from the classroom. They unintentionally assigned additional work to students. When everyone did this, students were set up for failure and undue stress. Remember, online learning should achieve equivalent student learning outcomes. It should not be more or less difficult than traditional learning. If you are not sure about student workload, generate a rough estimate using the course workload estimator developed by Rice University at this website: https://cte.rice.edu/workload. You could also seek feedback from more experienced colleagues to estimate if the workload is too heavy or light.

Key Success Factors

When courses move online, teachers often find themselves having to reflect on their teaching. Online course design and development can feel like the process of

translation in which I seek dynamic equivalents in the target language for the original work. Anyone can try to clone what they do offline, but that often leads to inferior work. For online courses to create an equivalent or better learning experience, consider the following key factors for success:

Granular. A traditional lesson, whether it lasts 45 minutes or two hours, consists of multiple parts when it is viewed under a microscope: the communication of the learning objectives, the presentation of content, class quizzes, other assessments, discussions, feedback on homework, student feedback to teachers (including body language), as well as jokes, digressions, and interruptions. Putting a course online is not a simple process of videotaping a lecture to put it online. Rather, things are broken down into smaller units for easier arrangement and reuse. In situations where a professor wants to post a recording of a 45-minute lecture, learning becomes passive and often less satisfactory. Student attention span is another issue for long lectures. Teachers can rightly complain about a new generation's shorter attention span as videos on Instagram, TikTok, and YouTube are often short. When students are not in the same classroom where teachers can monitor their behaviors, teachers must make learning more active to sustain student attention.

Not every teacher is fond of online teaching, and some resist it fiercely. There are many reasons for this to happen: Not being willing to learn new things; Not having time for development; No incentive for front-end development work, among other things. Over the years, I have found an interesting phenomenon: Some rock star teachers in the classroom are horrible at online courses because they fail to shift their classroom-teaching mindset and try to replicate what they do in the classroom without modifications. Breaking things up and reassembling them can be a painful process for them because they enjoy the flow, energy, and diversity in the classroom atmosphere.

Reusable. Building an online course can take a lot of effort and the front-end investment in time and effort is often rewarded with time savings later. A well-designed course is a reusable course. It can be replicated for other semesters and even taught by teachers other than the designer. When different teachers facilitate the course in a new semester, they add their unique character to the teaching process, but it would help to keep the course content standardized. From a cost-benefit perspective, an institution of higher education often invests in the development of a course by providing funding, leave of absence, reduced load, or a combination of these measures, and schools want returns on these investments. Eventually, a well-designed course should be like a textbook that can be put to use in varied settings. To make

a course reusable, the content should be granular and modularized to make it easy to customize. Teachers should try to remove references to specific times, locations, and other specific contexts, as well as page numbers and chapter numbers because textbook publishers constantly release new versions. When designing the course, the designer or subject matter expert ought to imagine what it would be like when the course is being taught two years from now. It's also important to remember that course content and technology keep changing and it is prudent to revise courses at regular intervals to reflect the relevant changes.

While I advocate making a course reusable to best utilize teacher time and expertise, I also admit that too great a focus on reusability may inadvertently transform a course into a bland, generic one devoid of personality and character. In this book, I want you to strike a balance between rigor and vigor. As you develop more and more courses, you will find a good balance between the two competing needs.

Equivalent. The single most important criterion to evaluate an online course is that it should help students achieve the same learning outcomes as they could in a face-to-face setting. An online course should not be construed as a watered-down version of a face-to-face course, nor should it be more difficult. Having equivalent learning outcomes also means that learning outcomes should be the primary focus, not polish, fluff, or eye candy unless they serve to help in achieving learning outcomes.

When teachers hold the learning outcomes constant, they can be creative in their teaching methods. One teacher wrote to me: "Online teaching differs from regular teaching in the delivery format. To protect students' eyes from staying in front of the monitor all the time, I carefully select my content. At the beginning of my lesson, I ask students to read aloud, and then I spend the latter part of my lesson explaining the text. Surprisingly, students seem to like this method as they enjoy hearing their peers' voices at the beginning of the day. ... I also use voice response, text chat, or polling methods to figure out if students are online [in the virtual class]." I found from her testimony that online teaching can be multimodal in content delivery. She also illustrated that online teaching could have equivalent formats of classroom interaction, such as the use of polling and text chats.

Achievable. Teachers cannot simply dump the granular content described above into a course container and let students navigate on their own. You cannot eat an apple with one bite; it is better to slice it up for easier consumption. After some slicing, the content will have to be sequenced in a logical way to maximize the possibility of student completion. The content can progress chronologically (week 1, 2, 3, etc.), conceptually (Module 1, 2, 3, etc.), or follow other meaning schemes of categorization.

In addition, the content should proceed from easy to difficult so that students can gain confidence in the learning process. If you take a discovery approach to learning, you could present a challenging question or scenario at the start to jump-start a process of inquiry. When content is arranged in a logical sequence, use modules to contain each section, just as credit hours are used to contain face-to-face classes. After building the modules with specific content, teachers can also apply selective release methods to allow students to proceed only when they have completed the requirements for the previous module.

Timely. When a teacher facilitates a course, time or timing are key considerations for student success. Ask how much time a student needs to complete an assignment or quiz, when is the best time to let them begin, and when an assignment should be due. If the assignment involves a discussion post, when are they supposed to make their initial posts? When are they supposed to respond?

While face-to-face classes have 45-minute sessions, online courses can use a week as the unit for time. Some teachers set courses on a Monday to cater to the needs of students who use the weekend as the primary time for study. Others use the weekend as the natural due date as it is easy to remember. Either approach works, but make sure you are consistent in what you do. Set due dates in your course to generate a calendar or to-do list item, which students increasingly rely on to track all their activities in a week.

Student flexibility comes with a cost. If you do not provide a strong structure, guidance, or alerts for completing their course work, they may miss content or activities while wandering around in their course. You give students limited autonomy to complete their work within a week. Students should also have strong self-regulation to complete their work on time. Encourage students to develop a routine that works best for them so that they do not procrastinate. For K12 students, self-regulation is weaker. It is better to use a hybrid approach to teach during a fixed window of time while allowing students some flexibility in completing their work within a larger window of time. Give students a structure to guide them in their learning.

Below is a checklist of tips to apply some of these principles:

TABLE 1.2

Principles for GREAT Courses

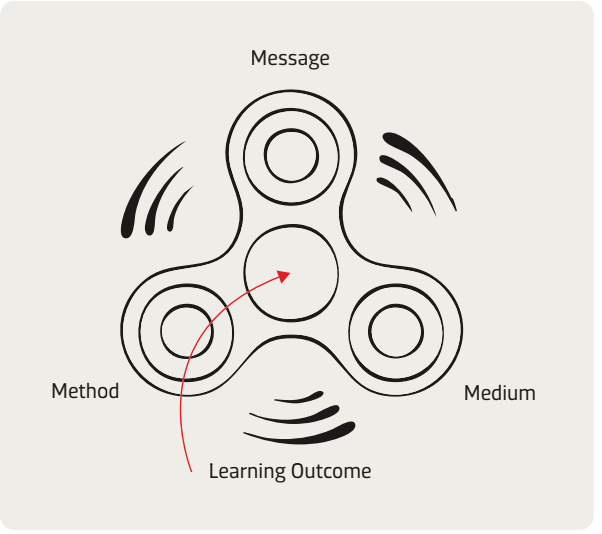
Principles	Tips
Granular	• Break up the content presentation, content processing, assessment, interaction, and teacher feedback. • Chunk presentation videos to make them shorter and focused on specific topics. • Make content accessible for consumption on a variety of devices, including mobile devices.
Replicable	• During course production, avoid time and location information ("Yesterday", "Room 200") that would be outdated when the course is offered in a new semester. • Keep the course lean for easier duplication in the future by moving large files to other professional hosting services, such as YouTube for videos and Google Drive for large presentation files. • Use an intuitive structure. • If you intend to have others use the course, add instructor guidance and resources.
Equivalent	• Articulate learning outcomes in your course, and how you align assessments and content presentation with the learning outcomes. • Choose from multiple assessment forms to measure learning and select the optimal methods. • Consider multiple forms of content presentation. For instance, use audio for text.
Achievable	• Create modules to divide your lessons into meaningful units. • Follow identical patterns for module content to develop a routine. • Make due dates and grades explicit for activities; • Set completion requirements for modules. • Use selective release methods to guide students toward completion.
Timely	• Use a week as your instructional unit. • Schedule your activities in a way that caters to diverse students. • Set due dates, available dates, and feedback dates in a consistent, obvious, and predictable way. • Provide guidance at the beginning of a semester for students. • Send reminders at the beginning of the course.

Get Started

Creating a course is similar to building a house. You start by finding the location and the community in which you will live. You create a blueprint. You build the structure of the house. You secure water, electricity, gas, and other utilities for the house. Once the house is built, you also make the house attractive by adding wall decorations and landscaping that reflect your preferences. Creating a course will also involve getting a course site, creating a home page, adding resources, and creating the modules, among other things. At different times in the course development process, you are an architect, a technician, or a construction worker. It is an intellectually stimulating and creative process because you consider technology, student psychology, your workload, and the institutional culture. Course development is a process in which you translate your face-to-face course into an online format. It is not a mechanical process of moving things from point A to point B. Rather, it is a dynamic process in

which you bring together different elements of teaching. I often use the following graphic to explain the frame of mind one should have in developing a course for online teaching:

FIGURE 1.1
The 3M Model for Online Course Design



As you can see from Figure 1.1, designing a course involves three Ms: Message, or the content of your course; medium, or the delivery mechanism of your course; and method, or the pedagogical methods you will use to teach. The message-medium-method continuum was originally proposed by Atwan (2005) to explain how to communicate, and I find it useful in the design of instruction as well. At the center of this model, you have the learning outcomes, which can be held constant while other elements change. This figure resembles a fidget spinner, which has gone out of fashion, but for those of you who have not used it, when you hold the center and give it a spin, all three little wheels spin in unison. Likewise, when you design an online course, a change in one element, such as the method, may also involve a change in the two other elements, such as medium and message. Designing a course is often an iterative process. You may find yourself having to adapt content to make the best use of a technology's affordance, or a technological feature may inspire you to change an assignment or assessment for better results. If a teacher is rigid and tries to force a course online without changing any components of the course, the course often fails or becomes problematic for either the students, the teacher, or both.

This chapter provides a comprehensive guide for educators seeking to transition to successful online teaching. By making a compelling case for online instruction, engaging with the learning community, acquiring essential tools and skills, developing a strategic plan, and prioritizing key success factors, educators can navigate the complexities of online teaching with confidence and deliver meaningful learning experiences to their students.

This book is a practical guide to help you design your course. For each chapter, you will have tasks to complete. If you follow through with these tasks, you will either have built the course or have the structure you will need to build your course. There are two items I would like you to complete before you move on.

TASK 1.1 Create a Course Space

Your course has to exist somewhere, often in the learning management system (LMS) of your school. Some common ones are Canvas, Blackboard, Moodle, Desire-2Learn, Google Classroom, or Schoology. They vary in feature or function, but most of them have the features I will describe throughout this book. If you are not sure which one to use, ask an instructional designer or technical professional from your school. If your institution does not support an LMS, you could use some free versions, including Google Classroom.

Once you decide which LMS to use, request a course shell to work with. Usually, your school's LMS administrator can create one for you. Be sure to request a course shell for the course you will be teaching, with students enrolled in it for a future semester. If you request a shell for a live course, make sure you keep the course unpublished so that students do not see your work in progress. Alternatively, you can request a sandbox course to work with. A sandbox course would be one without actual students enrolled. It allows you to test your design and use different functions or features of your LMS. It is useful to keep this sandbox course throughout the semester. The content you develop can be easily moved to a live course when you are ready. You can keep using the sandbox course and experiment with it to learn more about different features without having to worry if students will receive notifications of the changes you make.

In some cases, your school may have developed a template or several templates to choose from. This is an effort to make courses consistent in theme and look. Most templates also include common resources that your students will need. There is no need to reinvent the wheel. By all means, use the templates to make your course development easier

If you put your course in a learning management system, it usually creates a unique web address (or URL). Bookmark this course and any other information you will need to access it.

TASK 1.2 Create a Resource Inventory

Conduct a little scavenger hunt on your school's website to find the resources you will need for yourself and your students. Using Table 1.2 below, write down the names of people or departments you will need to contact in each of the areas listed below. Include their office contact information and links to their websites. In other words, create a quick contact information sheet for yourself. Create a resource list for students as well and include it in your course site in your learning management system. It is important to develop a list of such resources for yourself so that it is easily available when you need them. If you are not sure how to find such resources, interview the instructional designer at your school. Usually, an instructional designer knows how to locate these resources.

TABLE 1.2

Support Structures for Online Teaching

Category	Resources for You	Resources for Students
Management Support Include contact information for the person in charge of your school's online teaching program in case you have a question.		Usually not applicable
Instructional Design Support Include contact information for the instructional designer or instruction team.		Usually not applicable
Technical Support Include contact information or a link to your school's helpdesk for teachers and students.		
Media Support Include information or a link to your school's media studio or the professional software that your school may provide and hardware that you or your students can use or borrow.		
Materials Support Include contact information or a link to your librarian and bookstore.		
Legal Support Include contact information or a link to your school's legal office or personnel.		Usually not applicable

References

Alcázar, B. (2020, November 2). *In the Peruvian Amazon, loudspeakers help remote learning continue in indigenous communities*. https://www.unicef.org/lac/en/stories/peruvian-amazon-loudspeakers-help-remote-learning-continue-indigenous-communities

Atwan, R. (Ed.). (2005). *Convergences: Message, method, medium* (2nd ed). Bedford/St. Martin's.

02 Synchronous Teaching

SYNCHRONOUS VIRTUAL TEACHING, or remote learning as it is often called, is closest in format to face-to-face teaching. It is not always a favored form of instruction, but it has its place in education nowadays. In this chapter, I will discuss what a virtual platform looks like to help you make the choice of synchronous teaching tools, and I will discuss the preparation you can make to improve the synchronous sessions. At the end of the chapter, we will discuss how to use multimedia and cognitive load principles to increase the effectiveness of your virtual classes.

From Room to Zoom

"I will teach you in a room. I will teach you now on Zoom. I will teach you in your house. I will teach you with a mouse. I will teach you here and there. I will teach you because I care. So just do your very best. And do not worry about the rest." Many of you have probably seen this meme, which well illustrates the changes in education. Teachers may start what they believe to be online teaching with Zoom, Google Meet, Microsoft Teams, or some other virtual meeting platform. As long as the initial technical problems are solved, it may be the easiest way to shift from face-to-face teaching to an online format. The instructional design community used to frown upon synchronous teaching, as it spoils one of the key principles for online teaching, namely the flexibility of asynchronous online teaching that allows learners to learn anytime and anywhere.

Several changes have taken place that create a strong case for adding more synchronous teaching modalities to online teaching. Colleges and universities want a substantial number of their students to remain in the residential setting, both to create a learning community and to generate income from room, board, and other services. At the same time, colleges and universities want to use synchronous teaching methods to cater to the needs of remote students who cannot attend, for all or part of the semester, due to various reasons, including weather, sickness, or childcare responsibilities. Therefore, we now see a need for some students to be in the same room and other students to be in remote locations as compared to earlier ideals of online teaching, which assumes students can be anywhere they want. If residential schools want to maintain their operation, this type of hybrid scenario will have to be considered when discussing online teaching.

Technology has also changed to allow for easier synchronous teaching. Compared to the early days when IT professionals struggled with reliable video streaming and recordings, video conferencing is now stable, economical, and scalable. Teachers do not have to possess strong skills in video editing to handle recordings

and storage either. Some of these tasks are partially automated, requiring minimal editing. It is now possible to hold synchronous meetings for students who can gather in person while sharing the recordings with the few that cannot. Of course, this creates a new dynamic that requires caution on the part of the teacher. The regular release of recordings may encourage students to rely on them instead of attending virtual classes that might have benefited students. Some rules or expectations must be shared with students, and the release of recordings ought to be strategic if the preference is for students to attend in the physical classroom.

The use of any tool, including a virtual meeting platform, will fundamentally change human activity mediated by the tool. The tool will cause changes in the way people do things. To switch from offline teaching to online live broadcast, teaching methods should be adjusted. Teachers should also make decisions about which type of content to cover online in a synchronous class, which content to publish online for asynchronous completion, and which content ought to be moved offline for students to complete on their own or in a team. These decisions increase the complexity of teaching.

Another factor to consider is that, when teachers teach in a face-to-face classroom, without being recorded, errors and gaffes will happen, both teachers and students have the luxury of moving on. With live virtual teaching and recordings, some unsavory content may stay online for much longer or go viral, for good or bad reasons. Teachers who are bad at their craft become more vulnerable, while strong teachers may prosper in this new environment. All teachers, however, can keep improving if they are aware of teaching strategies that work well in the new environment.

In this chapter, I am going to explain how to use a virtual synchronous teaching platform and software, how to set it up, and how to use the principles of multimedia learning to improve the efficiency and effectiveness of live virtual lessons.

Learn Your Platform

One of the keys to the success of live virtual teaching is the use of a reliable platform. It is fine to use general platforms for professional meetings, but it would be better to use a platform that has dedicated functions and features for teaching and learning. You could experiment with a few and see which one provides the functions that suit your needs.

However, if your school provides a standardized platform, use that one. It may not have exactly the functions and features you look for but using a school-provided platform gives you many benefits as compared with "going rogue" with your own choices. With the use of the same platform across the school or district, your

students do not have to create new login credentials or switch to a different platform every time a class changes. Furthermore, you and the students may get better support from your school's computing services if you use authorized platforms with which school staff have developed some expertise. With other platforms, you and the students may have to troubleshoot problems on your own when things do not work. There may be cases where you require students to develop expertise in using various platforms, for instance, when teaching educational technology or computing services. In most other cases, students should focus their time and effort on dealing with the difficulties of learning content rather than shifts between platforms.

Most platforms have some essential tools such as two-way communication with voice, talking head, screen sharing, text chat, and a whiteboard. Both Zoom, Microsoft Teams, and Google Meet provide "cloud recording" options that put your recording in a cloud storage space, such as Zoom's cloud storage or Google Drive. This is most convenient when you are using a device that is not your own to conduct the virtual meeting. However, remember that sometimes cloud space is limited. Download that recording, post it somewhere more permanent, such as YouTube, and then delete the recording from the cloud space.

So far, instructors I have worked with have used Zoom, Adobe Connect, Google Meet, Microsoft Team, and BigBlueButton. All of them work reasonably well and have only minor differences. If you have a choice, use a platform that is dedicated to teaching and learning. There may be other tools within a social media platform that also allow for synchronous meetings. When you use any of those, be prepared to handle potential distractions for students.

Tips for Synchronous Teaching

We have a few suggestions for those pondering the use of real-time sessions for online teaching:

BEFORE YOUR CLASS

1. **Test your software and hardware.** Check if you have the application or plug-in to run the meeting. Also check your audio, video, and lighting beforehand so that you do not waste precious class time troubleshooting. Try a mini session with a friend, colleague, or even yourself to make sure

everything works on your end. If your device does not have quality audio or video, consider equipping yourself with external microphones or cameras. Often, we find that the computer's internal microphone may pick up the fan running and other computer noises that you do not want. Of course, you could also turn off the system sound when you share the screen.

2. **Schedule your meeting.** When you have scheduled your meeting, the meeting platform will usually generate a link that you can share with the class ahead of time. Ideally, you send the link via a calendar invite or put it in the course calendar so that it shows up at the time of the meeting for students to click on. Set one or more reminders before the meeting to increase attendance. Like many of us, and perhaps more so, students increasingly rely on calendar events and to-do lists to run their lives. If they do not see a calendar or to-do list item, they may not know when a meeting is supposed to take place. Try to set up recurring meetings with the same link so that there is some predictability where to go for synchronous sessions.
3. **Prepare digital assets.** If you intend to share images, presentation files, links, and questions with students, make sure that these assets are ready to use when you present. You do not want to spend time searching for them in folders and subfolders you cannot easily access, or worse, from sites you will need to download from at the time of presentation. Load such assets to your virtual classroom beforehand if possible. If you intend to share multiple websites, use a bookmark or tab management extension or app to collect all the tabs in one place for easier retrieval. I use a Chrome extension called Tabli that curates all the tabs needed for a particular session and so far it has worked well. Alternatively, you can put them all in a Google Doc for easier display and sharing if your students need the same links. It is also a great idea to create QR codes for essential resources for students to easily access them, especially resources you would like them to access on a mobile phone while attending your session.
4. **Organize your computer.** Keep your desktop clean if you intend to share your desktop with students. It might even be better to create a separate presentation account on your computer. The separate account can have a clean desktop and no notifications to distract from the presentation. This separate account would have all the software and assets you need.
5. **Provide tutorials.** Prepare tutorials for students to get ready for the live sessions. Usually, the vendor of the platform has some video tutorials you can share, or you can schedule a pre-session for orientation.

6. **Set rules for engagement.** Do you intend for students to use chat in the middle of a lecture? Do you allow chatting among students? When do you expect them to raise their hands and ask questions? Do you anticipate that students will share their videos? Do you want to discourage the sharing of irrelevant information during a session? All such questions ought to be communicated before a live session. Prepare an etiquette list for your virtual classes.
7. **Appoint a co-host or a meeting buddy.** Designate your teaching assistant or assign students on a rotating basis to assist you in running the live session. Your meeting assistant can help you monitor what is going on in the chat room, admit people in waiting rooms, share resources, collect questions and feedback, and take notes for the class.
8. **Find a location.** When you are having a live session, make sure you have sufficient light indoors or hold the session outdoors that allows you to hold the sessions with minimal distraction. You do not want to have the sound of your family vacuum in the background when you are teaching. Similarly, you do not want to be a distraction or problem for others in your environment. Post a note on your door telling people when your session starts and ends. If your environment is messy and distracting like mine, using a virtual background might help. However, I have found that students tolerate and even appreciate authentic environments that show who you are.
9. **Disable notifications.** At the start or soon before your session, turn off the notifications so that your calendar reminders and Facebook notifications do not pop up and distract both you and your students. You should be able to do this in your device's settings. Find a way to remind yourself to turn your notifications back on once the meeting is completed or set your notifications to be turned off only during the time of the meeting. I learned all of these the hard way, either by having undesirable notifications pop up during a live session or by missing important meetings because we forget to turn notifications back on.

DURING YOUR CLASS

10. Record while broadcasting. Most virtual platforms now allow hosts to record the session for users who cannot participate. Before I say anything else, I'd like to remind you to press the record button when you present. You may have the intention to record, but halfway through the

presentation, you remember that you have not started to record it (Don't ask me how I found this out). Take advantage of this feature in case some students want to access the recording later on. If you record your session, inform students ahead of time that the session will be recorded. If a session is a private, one-on-one meeting, such as an office hour when a student is struggling with individual questions or issues, it may not be desirable to record the session, unless the student requests to have the session recorded. If you are willing to share the recording with only a few students, you could post the recording to the video storage site in a way that restricts access, for instance using the "unlisted" option on YouTube so that only students with the link can access the recording. Some recordings have limits on how long they are available. For instance, some tools keep recordings for only fourteen days, after which users lose access. In this case, download them before the expiration date if possible. If downloading is not possible, consider playing it and recording with another software if the software agreement allows it. With some virtual meeting applications such as Zoom or Google Meet, you can set up the meetings to have the recording start automatically.

11. **Prepare for future use.** If you intend to use your session repeatedly, consider whether you should constantly refer to specific time, place, and people which may render your recording not very useful for future students. It is a difficult balance as you want the lecture to be embedded in the current class environment, and you also want it to be general. If it is not possible to avoid such references, or if removing such references would make your recording less usable, consider recording a generic video to be shared with future students instead of sharing the recording of a live session.
12. **Use multiple devices.** Sometimes it is difficult to have your virtual interface, your presentations, and a whiteboard all appear on a computer. It may be easier to conduct the meeting on a computer, while it may be easier to demonstrate things on an iPad, for instance, for math or music classes. Instead of trying to get everything to work on your computer, use an extra device (such as a smartphone or iPad) to present. Keep either your computer or mobile device on mute to avoid echoing sounds. Having a mobile device also makes it easier to show other students or objects in your teaching environment because you can place the device in a position to capture what you want to show to remote students. With a mobile device, you can do a "walk and talk" session, speaking while you are on a trail or a park, but use caution. We don't want a virtual class to turn into an accident!

13. **Polling:** You can use polling to gather feedback from students instantly. Of course, you could also use chat to do that, but the results in chat are more difficult to aggregate and display. Polling students during your virtual meeting can function like the classroom response system promoted by Derek Bruff as a way to improve student learning (Bruff, 2009). Prepare your questions ahead of time for prompt delivery of the questions with minimal disruption. If you use Google Slides for your presentation, you can also launch a question-and-answer session with your slide show to gather audience feedback, which you could choose to post to the entire class. However, if there is a need for confidentiality and anonymity, you can see the answers yourself without sharing them with the entire class. You can answer some questions during office hours. In either case, polling helps you estimate how well the class understands the issues at hand.
14. **Breakout rooms:** Breakout rooms are becoming increasingly popular among teachers, especially for large classes. It gives the class an opportunity to complete group work for some time during the session. Teachers, or any hosts, can hop in and out of a breakout room just as they would go around the room to listen to discussions of various groups in a physical setting. You can set time for breakout rooms as well as reminders to come back to the main room. Setting up breakout rooms may take some time during the session, so you may want to assign students to breakout rooms ahead of time. Alternatively, you might designate a co-host, usually a teaching assistant, to assist you in assigning students to breakout rooms while you focus more on teaching tasks. If you want the members of the group to collaborate while in the breakout room; use your learning management system to set up the groups that correspond to the breakout rooms. Groups in the learning management system might have their own spaces or pages that they can work on while they are meeting each other in the virtual session. Alternatively, you can use collaborative documents such as Google Docs or Google Slides, shared with everyone in the breakout groups, to have groups work together on certain tasks or simply to take notes. I have also found that it is more productive for breakout rooms if you assign a facilitator and/or note-takers.
15. **Classroom management.** Some professional virtual classroom platforms provide tools for easier classroom management. For instance, you can mute students or unmute them as a host. Of course, it may be even easier to delegate such tasks to teaching assistants or have students rotate as meeting assistants. Students can raise their hands. They can post their reactions,

such as thumbs up or clapping. Or take advantage of the text chat function. You can have students post their questions in the chat box and then leave time to review them and respond to them.

16. **Annotations.** Meeting hosts or designated participants can use annotations to mark up on either a blank screen or a particular background, such as musical scores for a musical theory class. If you want this annotation tool to be more versatile, use a whiteboard app such as Showme or Explain Everything on a mobile app, which makes annotation even easier.
17. **Be present for online students.** If you teach both face-to-face and remote students, pay attention to remote students and check their feedback from time to time to make sure they are engaged. It is also necessary to show your face and classroom to remote students. Show what you are doing when you are demonstrating things. As mentioned above, if your computer does not show everything at a good angle, use an additional device, such as your smartphone or an external camera that you can move so that remote students have equal access.

AFTER YOUR CLASS

18. **Edit your content for reuse.** You may want to edit the video that can be reused in the future. Enlist the help of a media specialist if necessary.
19. **Reflect on the delivery methods.** So far as I know, there is no one method or medium of teaching that will be better than everything else. After a few sessions, consider which method works best for you. For instance, if the desire to reuse the current session outweighs the desire to interact with the current class, you might want to consider recording your lecture in a studio. It is not my intention to argue that I have found a panacea for the problems of teaching online. Rather, I would like to emphasize that some situations call for real-time, different-place teaching, and other situations call for asynchronous teaching. The choice is up to you.

Apply Multimedia Principles in Your Synchronous Teaching

This is not a book about creating effective presentations, but many teachers are tempted to share presentations or their screens in a synchronous session, which makes it necessary to consider applying media principles in teaching (Mayer, 2009):

TABLE 2.1

Applying Multimedia Principles in Your Synchronous Teaching

Multimedia Learning Principles	Mayer's Explanation	Application in Synchronous Teaching
Coherence principle	"People learn better when extraneous words, pictures, and sounds are excluded rather than included. "	Delete ornamental text, pictures, and audio that distract from learning. Turn off infrequently used functions.
Signal principle	"People learn better when cues that highlight the organization of the essential material are added."	At the beginning of the course, spend some time to introduce the course objectives, content organization, and teaching methods.
Redundancy principle	"People learn better from graphics and narration than from graphics, narration, and on-screen text. "	Do not dump text on the screen and then read it exactly as it is.
Spatial contiguity principle	"People learn better when corresponding words and pictures are presented near rather than far from each other on the page or screen. "	If there are multiple pictures and words, keep the corresponding ones together rather than arranging them in a random fashion. This is especially important when making a PowerPoint presentation.
Temporal contiguity principle	"People learn better when corresponding words and pictures are presented simultaneously rather than successively."	Pictures and words that belong together should be arranged on the same page rather than on different pages. The separation makes it more difficult to remember the material.
Segmenting principle	"People learn better from a multimedia lesson presented in user-paced segments rather than as a continuous unit."	Break down long lectures into smaller segments. Also, consider recording mini lectures to let students watch at their own pace.
Pre-training principle	"People learn better from a multimedia lesson when they know the names and characteristics of the main concepts."	Expose students to new concepts or definitions before a live lecture.
Modality principle	"People learn better from graphics and narrations than from animation and on-screen text."	Do not waste time making flash or animated videos. It is usually more effective for you to explain pictures.
Multimedia principle	"People learn better from words and pictures than from words alone."	In your synchronous classes, use pictures to illustrate what you explain.
Personalization principle	"People learn better from multimedia lessons when words are in conversational style rather than formal style."	Use informal language and tone in your explanation, rather than speaking as if you are narrating a textbook or academic paper.
Voice principle	"People learn better when the narration in multimedia lessons is spoken in a friendly human voice rather than a machine voice."	Use authentic human voices, rather than text-to-speech recordings to capture student attention.w
Image principle	"People do not necessarily learn better from a multimedia lesson when the speaker's image is added to the screen."	Mayer believes that talking head videos do not help learning, but many students say in their feedback they like to see teachers' talking head videos or even the background of their homes. It helps with the social presence of a teacher in the course.

(MAYER, 2009)

Optimize Cognitive Load for Synchronous Teaching

When teachers start to teach classes virtually, they need to navigate between the course content, classroom management, and technological configurations. This is a new process that may pose difficulties for many. However, once you become accustomed to the process, you will find that it can simplify things quite a bit. For instance, in a face-to-face classroom, students can be rowdy and hard to manage at times, especially for new teachers inexperienced with classroom management. With a virtual session, teachers can simply mute and unmute students, making the classroom simpler to control. To reduce the complexity of a virtual class and to increase student attention, teachers should restart the computer or other devices they use close programs or browser tabs, disable notifications, and get their content for presentation ready -- all before a session starts.

More importantly, consider how you can keep students focused on their learning. This will require you to optimize their cognitive load. Cognitive load, a theory proposed by the Australian cognitive psychologist John Sweller, refers to the amount of working memory that is engaged during the learning process. The theory ties cognitive processes to the effectiveness of learning.

The human brain sometimes works like a computer. A learner is exposed to information, some of which is lost during the transmission process for internal or external reasons. What is left of the information goes to a person's working memory, which functions like the R.A.M. for a computer. Again, information in a person's working memory is partially lost. The remainder goes to long-term memory due to storage, elaboration, processing, recall, or practice. Learning happens when information is retained in long-term memory.

To help students recall information retained in long-term memory, teachers should optimize the use of cognitive load, which is divided into intrinsic, extrinsic, and germane cognitive load (Sweller et al., 1998). In the following table, I briefly apply the theory of cognitive load to synchronous teaching:

TABLE 2.2

Optimize Cognitive Load in Synchronous Teaching

Category	Explanation	Application in Synchronous Teaching
Intrinsic cognitive load	Cognitive resources used in processing the learning content	• Allow students to proceed from simpler and easier content to more challenging content. • If students display a greatly varied knowledge base or skills, use videos or other teaching methods before a class so that students can gain prerequisite knowledge or skills in advance of the class. • Make your learning content granular so that students can more easily tackle difficult points or bottlenecks in their learning by spending more time on specific segments they are not familiar with. However, show the big picture so that students know how a node in the teaching relates to the larger web of learning. • Encourage students to embrace "desirable difficulties" in mastering the content (Brown et al., 2014).
Extrinsic cognitive load	External factors that might affect teaching, including factors that distract from learning	• Reduce the use of eye candy in your teaching. These elements (such as decorative animations and transitions) serve no particular purpose. • Consider always using the same platform for visual teaching instead of switching platforms from time to time. Such switches may use up cognitive resources without adding to student learning. • Avoid platforms with too many distractions, such as pop-up ads, plug-ins, or notifications. • Reduce the number of items you cover in one sitting so that both you and the students can focus on the outcomes you intend to achieve.
Germane cognitive load	The processing and creation of mental models for additional learning.	• Learning is a process in which our mental schemas gain sophistication through mental associations. In your teaching, relate existing learning to prior and future learning. • Use advanced organizers such as tables, figures, or mind-mapping tools to show students where they stand on the map of learning. • Use active questioning to help students relate their study materials to their own backgrounds, concerns, and expectations.

All in all, with live classes conducted on virtual platforms, teachers should consider using multimedia principles and cognitive load theories to maximize learning effectiveness. With regard to content, proceed from the easy to the difficult to scaffold students towards mastery. If teachers can help students create a mental model where prior, existing, and future knowledge are linked, students will be able to see the forest, not only the trees.

Remember, synchronous teaching is only one modality of teaching. Synchronous teaching can work in conjunction with other modalities, such as recorded lectures or reading deployed asynchronously. You do not have to make either-or decisions about which modality to choose. The various modalities can work together. For instance, some professors use recorded lectures to teach asynchronously, but

use synchronous sessions to conduct group work, answer questions, give feedback, or conduct one-on-one office hour meetings. As you continue to teach using a variety of modalities, you will eventually find the configuration and rhythm that work best for you.

TASK 2.1 Set up the Account

Ask the computing service at your school about the virtual conferencing platform that they support. Request a license if available. Activate your account.

TASK 2.2 Use a Checklist for Synchronous Teaching

Please use the following list to get ready for your synchronous teaching:

TABLE 2.3

Checklist for Synchronous Teaching

Categories	Tasks	Notes
Before a live session	• Download a platform or application for live teaching. • Send students instructions for downloading and installing the platform or application. • Set up virtual meetings. • Add meetings to the class calendar or course web site. • Create breakout rooms or groups and corresponding collaboration pages, if needed. • Prepare an etiquette list for virtual classes.	
During a live session	• Use a generic slide to share some common "housekeeping" items for a session (Note 1). Check if students can hear and see you and/or your shared screen. • Remember to record your session if needed. • Pause occasionally to check student responses or reactions. • Remind teaching assistants or the student on duty to monitor the chatroom for questions and problems.	
After a live session	• Save the recording of the session. • Edit session recording if needed. • Share resources that may have been discussed in the live session. • Post/send session recording.	

Note 1: Here is a list of "housekeeping items" I often share at the start of a synchronous meeting:

1. This meeting will be recorded and shared next week in Canvas [or any other platform you use].
2. Please mute yourself when you are not speaking. Remember to unmute when you speak.
3. For non-urgent questions, post them in chat and I will cover them before the class ends. For others, unmute and speak up.
4. I would prefer that you leave your cameras on during the session.

References

Brown, P. C., Roediger, H. L., & McDaniel, M. A. (2014). *Make it stick: The science of successful learning*. Cambridge, Massachusetts: The Belknap Press

Bruff, D. (2009). *Teaching with classroom response systems: Creating active learning environments*. Jossey-Bass.

Mayer, R. E. (2009). *Multimedia learning* (2nd ed). Cambridge University Press.

Sweller, J., van Merrienboer, J. J. G., & Paas, F. G. W. C. (1998). Cognitive architecture and instructional design. *Educational Psychology Review*, *10*(3), 251–296. Doi: 10.1023/A:1022193728205

03 Structure Your Course

A FACE-TO-FACE CLASS has a brick-and-mortar classroom. The "classroom" for online teaching is usually the course site in your school's learning management system, such as Canvas, Blackboard, Moodle, Desire2learn, Sakai, Schoology, or Google Classroom. The learning management system becomes the virtual environment for online teaching and learning. It is important to use a learning management system rather than your own website to design and implement online teaching. Learning management systems are complex platforms with functions and features other applications may not have. It is also a good idea to use your school's dedicated learning management system to implement online teaching because the designated system is usually supported by the school's technical infrastructure as well as technical professionals. For instancwwe, your learning management system may be integrated with your student enrollment system and your school's Intranet.

Dedicated learning management systems cost universities and colleges a lot of money, but if you are an administrator reading this, I would reassure you that this is an investment that has a high rate of return. These learning management systems often come with teaching and learning functions that you, the teacher, will need. If schools buy other systems to support such functions, they may end up with a much larger bill. Furthermore, if school administrators want to have online programs or online courses and do not provide a learning management system, it would be like moving to a new state without a place to live. A learning management system is one of the essential requirements that you should never bypass when you start considering putting courses or programs online.

Using the learning management system your school uses, create a course site in this learning management system for the class you will be teaching. Each school may have a different set of requirements for course creation. Some schools may create a blank course for you. Some may have a course already developed, and you will be added as the instructor of record. In other schools, you will have to take the initiative to create courses using the school's learning management system. Then you can add outcomes, content, assessment, interaction, grading, events, and other components to the learning management system.

Overview of a Virtual Learning Environment

When developing your course online, you will need to break down your regular teaching content into chunks and then reassemble them on the course site. Typically, you will have written instructions, instructional videos, reading materials, discussions, low-stakes quizzes, and high-stakes tests. Throughout my career, I have helped teachers learn to use the tools provided by learning management systems. Some of these tools, in descending order of frequency, are the following:

Grade book: You can add new assessment items, put them in categories, and assign weights if needed. With many systems, it is also possible to drop one or several low scores in a category and excuse a grade when a student has a legitimate reason. You can also curve student grades if the design of the assessment causes most grades to skew to extremely low or high scores. You can choose when to post grades to students. It is also possible to send messages to students from the grade book when you want to send students reminders or notes of encouragement.

Assignments: You can create assignment submission drop boxes for students to submit their work, which can then be graded online, using annotation tools and text, audio, or even video comments. Your learning management system may have a rubric function for assignments. Using the rubric, you can grade the assignment by detailed criteria to assess the quality of work. You can use authenticity detection tools such as Turnitin to discourage students from cheating on their assignments. Another common function of assessment is peer review, which allows students to review and comment on each other's work. For courses with large enrollments, it may be challenging for you to grade each one of the students' submissions. Consider using peer review in evaluating assignments. Another good use of peer review is to have students work on each other's drafts to iron out each other's minor issues before you grade the assignments.

Assessments: You can create quizzes or exams for students to take online. Sometimes you might use Lockdown Browser or other secure testing tools to improve the security of exams. Tools like HonorLock can even "kill" results students try to search online during an exam. Such tools may also send alerts when a student navigates away from a testing page. Using these tools, every teacher can administer an exam with the security measures often afforded only to high-stake national exams such as the ACT, SAT, or the GRE.

Discussions: You can use discussions for students to respond to prompts. Once students post their responses, they can also comment on each other's responses. Discussions are becoming increasingly sophisticated tools, allowing students to use voice or video to chat. Some teachers even use external apps for discussions, including Voicethread or Flipgrid, to make online discussions richer and more engaging. There are also tools like Packback that uses AI to assess student writing, which can greatly reduce faculty workload. Discussions can be graded just as assignments or quizzes are. If you have an assignment that you want other students to access, using a discussion format will make the assignment visible to both you and the students, while assignments are often visible to you only.

Collaboration: Many learning management systems have collaboration tools that enable students to work together on the same document. Collaboration tools might be external applications such as Google Apps or Microsoft Office tools that are integrated into the system your school uses. Some systems include Wiki pages so that students can work together on a page editable by students or specific groups. When classes are large, you can also use group tools to facilitate group work among students.

Videos: Some learning management systems work with video platforms to streamline video creation, sharing, and utilization. You can embed videos from YouTube, Vimeo, or other platforms, but these external platforms use algorithms to figure out what students may want to see, thereby creating distraction if students are simply sent to these platforms without any filtering. It is better, if possible, to use dedicated educational video platforms to create, store, and distribute video content. Tools like Kaltura (https://corp.kaltura.com/), Panopto (https://www.panopto.com/), Canvas Studio (https://www.instructure.com/canvas/en-gb/higher-education/platform/products/canvas-studio), TechSmith Relay (https://www.techsmith.com/knowmia-education-enterprise.html), among others, not only make the creation and sharing of videos easy, but most of them also provide analytics to check whether and how students watch and interact with the videos. With some of these video platforms, you can even embed quizzes in the videos to test students along the way!

Users: Most learning management systems have user management functions for you to add, temporarily deactivate, or remove users. Your schools may integrate student enrollment systems into the learning management system to automate enrollment in the courses. When there is an update in the student enrollment system, the changes will also be updated in the learning management system. In such cases, you may not have to worry about student enrollment for your classes. Check with your school's computing services to find out if the enrollment is automated in this way.

Communication: Communication in a learning management system can be directed to the entire class, to a group, or to an individual, using internal emails, announcements, or private chats. Skillful use of communication tools will save you and your students time and trouble. For instance, rather than responding to a lot of similar emails, create an announcement or a frequently asked questions page or discussion area where you can post your answers. When you use a discussion for this purpose, students can also help each other with certain questions.

Virtual classes: Usually, you can use applications such as Zoom for synchronous teaching needs. These tools can be integrated into your system for easier administration. Some learning management systems also have their own synchronous teaching tools using external apps such as BigBlueButton (https://bigbluebutton.org/) or Adobe Connect (https://www.adobe.com/products/adobeconnect.html).

Mobile apps: Good learning management systems also come with mobile apps so that students can use their mobile devices to complete the majority, if not all, of their learning tasks. This feature is important because some students may have only smartphones or tablets with which to take their online courses. In your course, provide instructions or links for them to download these apps. Also, consider the type of device students may have, direct them to a page that has apps for both Android and Apple systems.

Other common functions or tools include outcomes management, data analytics, calendars, and portfolios. With all these tools, your course site in a learning management system becomes a one-stop shop for all students' learning needs. If you are not familiar with a learning management system, spend a couple of hours taking an online course in LinkedIn Learning (https://www.linkedin.com/learning/)or watch videos provided by the vendors. Learn the ins and outs of a learning management system so that you understand what kinds of functions are possible before you plunge into using it.

General Course Structure

The first step in building your online course is planning the structure of what you are going to teach. Some preliminary need assessments of students might help. You may not learn much about the students until the course starts but see if you can find data on their age, full-time/part-time status, and major/non-major designation from the school databases available to you. In some cases, you may be able to get some basic understanding from other professors that have taught a prerequisite class, or the chairperson of your department. Some preliminary knowledge helps you to plan the structure of your course. For instance, younger students or students who do not have a lot of experience with online courses may benefit from having specific schedules and structures. Mature students in graduate-level courses would probably appreciate more flexibility in structure. Working adults may appreciate more time flexibility as they shuffle their jobs, family, and school responsibilities. For these students, it may be better not to set the deadlines for assignments on Fridays, as weekends may be the time for them to work on these assignments. When the class starts, you can use an introduction exercise with prompts containing the questions you want answered to learn more about your students. Once you understand the demographics, characteristics, and preferences of your class you can adjust the course as needed.

Based on your subject matter and your knowledge of the students, you might choose any one of the following structures:

THE HIKE STRUCTURE

In this structure, you arrange your course content in several broad categories, such as files, quizzes, assignments, discussions, exams, announcements, course calendar, and grade book. Students access the content and activities on their own, using whatever order or sequence they prefer. This structure is like a hike in which a person can wander and wonder. It works best for courses targeting more advanced students who appreciate the flexibility that you provide. You can gamify the experience by adding badges for the completion of individual tasks. Or you can turn your entire course into a scavenger hunt activity with an overarching guide document at the start of the course. However, students who have little online learning experience may feel at a loss because of the lack of sequential structure.

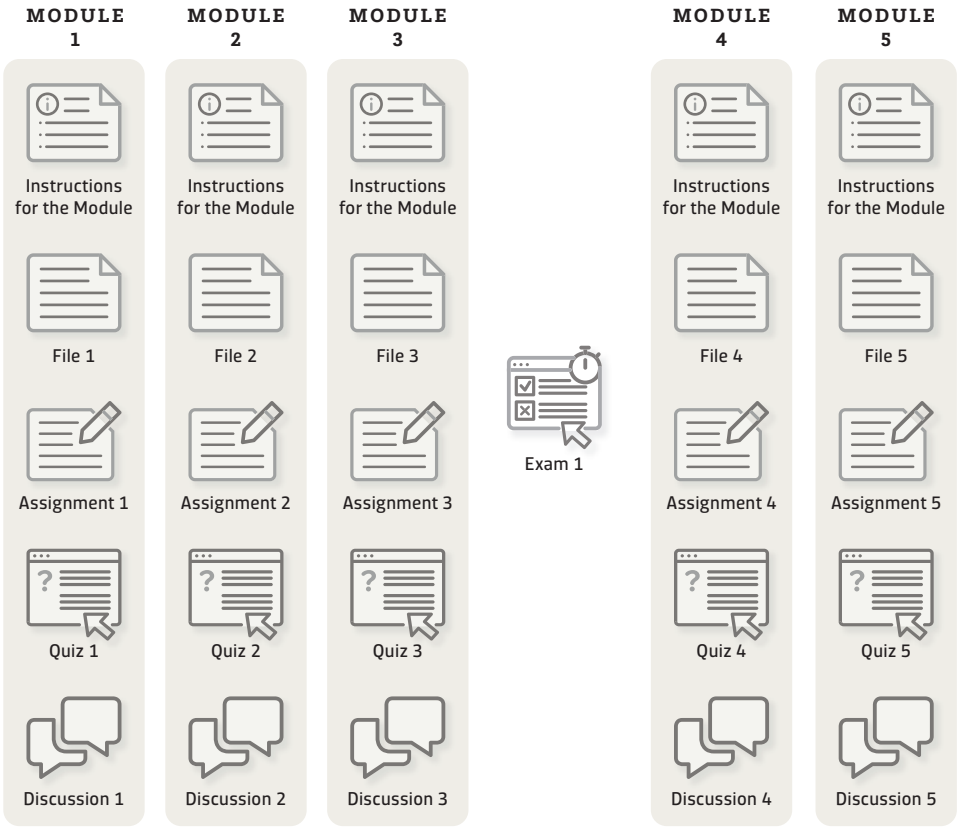
FIGURE 3.1
The "Hike" Structure

THE "GUIDED TOUR" STRUCTURE

In this structure, you use modules to arrange your content to guide students toward completion. Students follow your lead just as tourists follow a guide on a guided tour. Modules are units of learning organized by week or by topic. In each module, you include instructions, files, assignments, quizzes, and discussions arranged in sequential order for that module. Students complete one module and proceed to the next with your guidance. This approach is best for students who need a lot of structure, especially students new to a field who would not be comfortable navigating tasks on their own.

FIGURE 3.2

The "Guided Tour" Structure

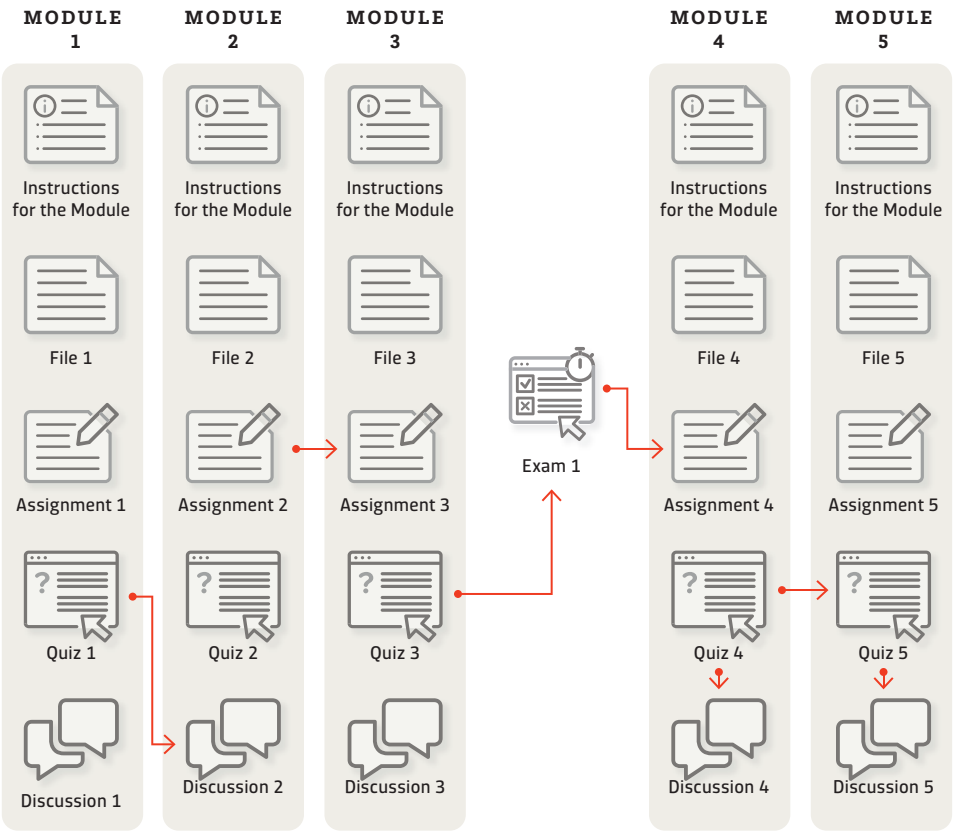


THE "MASTERY PATH" STRUCTURE

I took this structure's name from a function in the learning management system Canvas, where students can follow a "mastery path" to work on their content. To design a mastery path, you first arrange the content in modules as you would for the "guided tour" structure, except that students do not follow the order in each module rigidly as you lay them out. Rather, you use their performance in different assessment activities to determine how they do next. For instance, for module 1, if students make a score of above 80%, they can skip module 2 and proceed to module 3. If students score less than 80%, they may be directed to module 2 or even a prerequisite module until they can demonstrate mastery for module 1. Using this structure, all students do not follow exactly the same paths of learning. Students who are more advanced will get to skip certain content for which they have already demonstrated mastery. Students who are not advanced will spend time working through more content and activities.

FIGURE 4.3

The "Mastery Path" Structure



Components of A Module

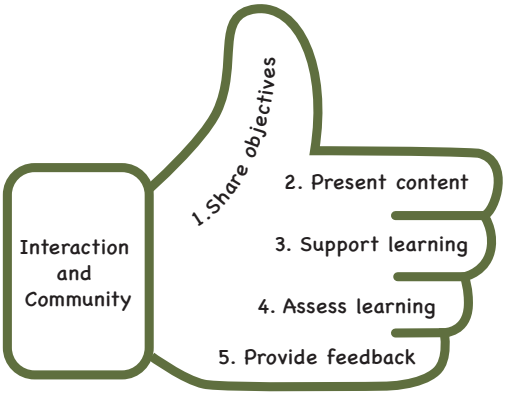


FIGURE 3.4
The Five-finger Rule for a Module's Structure.

In two of the structures above, you will be using "modules." A module is a chunk, a slice, a piece of the total of things you want to teach in a semester. What exactly goes into a module? The classical theory of nine instructional events by Robert M. Gagné can be very helpful in the design of a module. Gagné described nine instructional events as basic building blocks of optimal teaching: 1) gaining attention; 2) informing learners of the objective; 3) stimulating recall of prior learning; 4) presenting the stimulus; 5) providing learning guidance; 6) soliciting performance; 7) providing feedback; 8) assessing performance; and 9) enhancing retention and transfer (Gagné, 1977).

Using Gagné's theory to perform an analysis of your face-to-face teaching, you would probably find that you use a combination of these instructional events, probably without being conscious of it. However, the nine events are complex and prone to misunderstanding. For example, providing stimulus may be misinterpreted to mean providing a thrill, leading some teachers to use melodramatic and gimmicky methods in the teaching process, including the overuse of jokes, eye candies, and flashy transitions. Such practices do not necessarily help learners, and in some cases, they distract students and make it more challenging for them to learn. Gagné, however, was advocating "stimulus" in the Pavlovian sense of stimulus and response. Namely, you ought to consider how to optimize the presentation of content for effective learning. It involves breaking content into chunks, arranging them in effective sequences, and selecting the appropriate media in the instruction. Gagné also emphasizes the internal conditions of the learners. For instance, whether they care about their learning, and whether they have the appropriate prior knowledge, skills, and attitudes for current learning.

I have simplified the instructional events for conditions of learning into five steps, which I will show in the following figure to guide the design of a module in an online course:

Share objectives: In each learning module or synchronous session, the teacher informs the students what that module or session will cover, what activities should be completed, and what objectives students are expected to complete. Without such information, students will be confused and unsure of what is expected of them. Some of you may say, "All this information is in the syllabus already. Students can check the syllabus." However, how many times does your "It's all in the syllabus!" fall on deaf ears? I would suggest that you keep your syllabus concise, showing only overall course objectives, while offloading specific objectives and instructions for a week or module to the module itself.

Present content: In this process, you use reading materials, audio, video, games, or other content-sharing tools to present your understanding of the subject matter. This can be like face-to-face lectures. If you intend to use videos, consider recording short videos around specific topics, instead of trying to replicate a 45-minute class completely online. With short videos, it is easier to keep student attention, and it is also easier to index these videos for later retrieval by students and teachers.

Support learning: Provide assignments or activities to support student learning. Such support activities may include discussions, exercises, drills, peer review, games, and other activities to reinforce mastery of the specific subject matter.

Assess learning: Use quizzes, assignments, and graded discussions to test student content mastery.

Provide feedback: Post your feedback to the entire class, to groups, or to individual students. Feedback should follow the submission of assignments or tests. In traditional teaching, teachers frequently give feedback to an entire class. However, students may face different challenges that make it more attractive and effective to have personalized feedback. I recommend using audio or video to give feedback because it is often faster to speak than to write. In some learning management systems, teachers can use the media comment feature to leave comments for students.

Interaction and community: Learning would be incomplete without social interaction. Learning solo can lead to shallow learning and narrow understanding. I would encourage the creation and maintenance of a vibrant online

learning community. Try to promote student-teacher and student-student interaction throughout your course. Online discussion is one of the tools for interaction, but you can also use collaborations and chats for rich interactions as well. Text alone can deprive a community of the richness of human interaction; I encourage the use of synchronous conferencing to promote community formation.

To sum up, consider using these five components in the design of your modules:

1. Share objectives.
2. Present content.
3. Support learning.
4. Assess learning.
5. Provide feedback.

You might start by building one sample module, test it with a student or a colleague, and then replicate the structure for additional modules. Having a more-or-less identical structure in every module makes the course consistent and predictable. However, it could also become monotonous once students have settled into the routine. It is fine to create some small variations in each module, substituting a familiar item with a different format. For instance, instead of a file of reading for the week, including a video clip for a slight variation.

Adapt Content for Online Modules

When you consider adding to a module, try to avoid rigid replication methods, such as recording the entire teaching session into a video to post online, because student attention span is limited. For online and blended courses, Dr. Ruben Puentedura proposed the SAMR model, an acronym for substitution, augmentation, modification, and redefinition (Puentedura, 2012). Augmentation and modification are difficult to untangle as two distinct constructs. By merging these two, I have simplified this model into substitution, augmentation, and redefinition.

Substitution: This model changes only the medium of delivery and seeks to clone teaching methods used in face-to-face settings. Here are a few examples of substitution:

- Record your classroom teaching and make the recordings available to your class without further modification.

- Ask students to use paper and pencil to complete assignments, scan or photograph them, and then send them to you.
- Ask students to visit testing centers or use designated proctors for testing at a specific time and place.

Augmentation: With this model, you can use instructional methods of face-to-face classes and incorporate the functions and features of online tools to enhance teaching. Here are a few examples:

- Use synchronous sessions to teach but use online polling to enhance the lecture experience or use mute/unmute functions for classroom management.
- Require students to submit assignments to their learning management systems so that you can grade the assignments online and utilize tools for annotation and audio/video feedback. For assignments with multiple drafts, you might require students to review each other's work before collecting their final drafts.
- Design online quizzes for students to take online at their own convenience. You can set the exam available time to be an entire day while reducing the clock time allowed for the exam. Online quizzing is an enhancement because teachers can use question banks to push various versions of a quiz to different students. Quizzes can also be released to different individuals with different timeframes.

Redefinition: With this model, teachers can take advantage of a learning management system, other technologies, and artificial intelligence to reinvent the method they use for teaching. Examples include:

- Innovate in the way you present content, using synchronous sessions as well as recorded videos to allow students to access content anytime, anywhere.
- Design engaging learning experiences using games, simulations, and digital stories.
- Use external resources as the main source of content.
- Develop creative ways for students to process the content. For instance, allow students to produce online quizzes, group discussions, games, and contests.

- Incorporating students' backgrounds, geographies, knowledge, and skills to enrich classroom teaching. 3) Broaden student assessments beyond quizzes and exams; include project-based assignments, presentations, and/or authentic tasks appropriate in your field.

These three strategies progress from one to the other. The substitution model should rarely be used as the norm for online teaching, as it is not sustainable. Turning a course into an online course should not be a cloning process with only the delivery method changed. When courses are launched online, both teaching and learning processes are fundamentally changed. Based on the Activity Theory of Lev Vygotsky, when human activity is mediated with a tool, it will alter the subject, object, and outcomes of the activity. Later, Dr. Yrjö Engeström from the Center for Research on Activity, Development, and Learning (CRADLE) of the University of Helsinki extended the theory by stating that tools would also change the community, rules, and division of labor associated with the activity (Engeström, 2000).

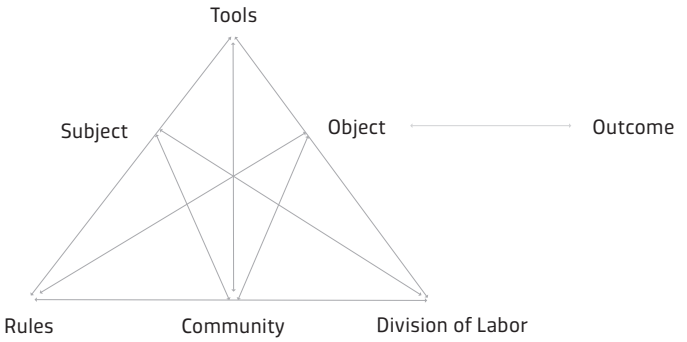


FIGURE 3.5
A Diagram of Extended Activity Theory (EAT) Framework.

From "Activity Theory and the Social Construction of Knowledge: A Story of Four Umpires" by Y. Engeström, 2000, *Organization*, 7(2), p. 303. Copyright 2000 by Sage. Adapted with permission.

The Extended Activity Theory offers new ways to view virtual classrooms. When classrooms become virtual, the division of labor changes: You will work now with an instructional designer and an educational technologist. Virtual classrooms also change the community, including the method of interaction between parents, students, teachers, and schools. The virtual classroom also creates or changes the rules of the community, including rules for muting/unmuting speakers in a synchronous

session and online etiquette for discussion forums. Consider using EAT in rethinking the way you design your virtual classroom and all the components associated with it.

Additional Elements for an Online Course

Beyond your modules covering content, there are many other components that should go into your online course to provide onboarding, orientation, and ongoing support to students. These include, but are not limited to, a home page, the course syllabus, a calendar, an orientation module, student resources, and teacher resources.

Course home page: This is the entry page for your online course that should provide a learner with information on how to proceed. It should be the executive summary (or course description) and should contain the course number and name, teacher's name, title, and contact information, as well as links to resources for the course, such as the syllabus and course modules. Ideally, you should also include information about office hours, a link to the website where you manage appointments. For instance, you can use Youcanbookme (https://youcanbook.me/), calendly (https://calendly.com/, or Google Calendar for booking. Since the entry page also seeks to create a welcoming atmosphere, be sure to include a friendly welcome message in text, audio, or video.

Please note that some teachers change their entry page as the semester goes on. When students become familiar with the way the course is structured, you might alter the course home page slightly to push out information that may be more relevant as the course progresses. However, refrain from dramatically rearranging everything overnight as they do in large department stores. They want you to spend more time looking for things and buy more after things move. You want some predictability in courses to reduce student workload and frustration.

Course syllabus: Use a separate page for the course syllabus and be sure to document your policies and expectations. Please note that a syllabus can be a lengthy document. Include a printable copy if necessary. If you depend only on the web page in your course, consider chunking your content using tabs or sub-pages.

If you consistently find many students miss information contained in your syllabus, something is not right. For instance, some teachers add all their assignment instructions to the syllabus while not offering the instructions in the assignments area. You should not just blame the students for that design issue. Instead of having a bloated 20-page syllabus with everything students need to know, I suggest moving

some of the instructions and rubrics to the assignments area so that students can review your instructions, check the rubrics, and submit their work all in one place.

Course calendar: You can use a course calendar to show exactly when something is due. Make sure you assign due dates and available dates for your assignments, discussions, quizzes, and exams so that they appear in students' calendars. It might also be possible to use the calendar feed to import a course calendar to students' regular calendars in Google or Outlook so that all students' daily activities appear in the same place. Some students already do this. Others may need instruction or a demonstration.

Orientation module: I encourage our teachers to include a "Module 0," "Start Here," or "Orientation Module" at the very beginning of the course. Like any other module, it should include content and activities. The content in a course's orientation module should include common course resources, tutorials on how to complete certain tasks such as submitting assignments and checking grades, instructions, and suggestions for taking an online course, information on where to get help, and a page of "Frequently Asked Questions" to answer some common questions from students. You could also include some orientation activities, such as a discussion board letting students introduce themselves to each other and to you. Many schools have a standard orientation module developed for you to import and customize if needed so that you do not have to reinvent the wheel. Check with your school's instructional design professional and see if such a module is available. You could also ask experienced online teachers from your department and see if they can share such a module with you to speed up your own course development.

Teacher Resources: You might want to include a page in each module or for the course in general that includes resources for teachers to use when facilitating the course. You may also benefit from the resource list because you can use it to bookmark resources you will need yourself instead of just leaving these bookmarks on a particular computer. If you change resources frequently, consider using a social bookmarking or curating tool such as Diigo (https://www.diigo.com/), Wakelet (https://Wakelet.com/), or Pocket (https://getpocket.com/). With these cloud-based bookmarking tools, you can access the resources on any device and even invite collaborators to expand or revise your resources. Remember that this is the age of abundance with no shortage of information. Include only what is absolutely necessary and be careful not to fill your page with too many resources.

Design Considerations

Even if you have all the elements lined up, you still must apply good design thinking when structuring your virtual classroom. A poorly designed course confuses students and increases your work because you have to answer questions. It is best to minimize problems as much as possible because your time is better spent teaching, and student time is better spent learning.

Many books on design thinking can be applied to the design of courses, and one of my personal favorites is Norman's *Design of Everyday Things*, which includes several insightful principles that I think will help you optimize your virtual space for online teaching: affordance, signifiers, mapping, constraints, and feedback (Norman, 2013). The following table explains what these principles are and how they can be applied to an online course design.

Norman also emphasized that we should, in the spirit of distributed cognition, put some knowledge in the world and some in the head. If you and your students must think hard to figure out how to proceed in your course, it is a case of design failure. Things ought to be so simple that students never feel at a loss on how to proceed in your course. Course design failures are rarely fatal, but design failures create frustration, confusion, and even bitterness. Poor design also adds to a teacher's workload. For instance, if you have too many choices and mapping that is not intuitive, students will not be sure what to do, and they will email you, wasting your time helping them with logistical or technological issues rather than content issues. The more deliberate and careful your design, the more bandwidth students will have for learning what you intend them to learn.

In this chapter, I have shared what a virtual course space looks like using a learning management system, which should include functions and features to support a variety of teaching and learning activities. An online course must be intentionally designed due to the lack of immediate feedback from students. Please make smart choices about the structure of your course and follow good design principles so that students' learning will be efficient and effective. In the next chapters, I will share ideas about specific areas of your course, such as assessments, content, interactions, and media. These components will be used to fill in the structure you have put in place.

TASK 3.1 Create a Course Map

Your first task for this chapter is to create a course map, course outline, or storyboard, which will help you to assemble resources and develop the course. The checklist

TABLE 3.1

Applying Design Principles to Online Course Design

Design Principles	How to Apply it in Online Course Design	Common Mistakes When This Principle is Not Applied
Affordance "...relationship between the properties of an object and the capabilities of the agent that determine just how the object could possibly be used." (Norman, 2013, p.11)	• Use each tool for the purpose for which it was originally intended. For example, use the discussion forum for online discussions.	• Using the wrong tool for teaching needs, for instance, using the discussion tool to collect assignments. • Using the same tool (such as course file attachments) for every single teaching need.
Signifiers "...any mark or sound, any perceivable indicator that communicates appropriate behavior to a person." (p.14)	• Set due dates to push to students' apps with sounds or pop-up windows so that students can check off the items on their online calendar or to-do list.	• Simply mentioning a due date in text, without setting it in an activity's configuration. Remember, some students rely heavily on their calendars or to-do lists for items that require their action.
Mapping "...that relationship between the elements of two sets of things." (p.20)	• If you use graphics, acronyms, or symbols, make sure that their meaning is obvious. • Make sure that module titles correspond naturally to either time (week of a semester) or topic (chapter in a book). • Arrange course content in modules that are easy to find. • If sub-pages are used, provide a way to come back to the main page.	• Using symbolic representations that are abstract, ambiguous, or capable of multiple interpretations makes it difficult for students to figure out what they stand for. • Using frivolous graphics that serve no practical purpose and serve only to distract. • Burying pages beneath many layers and not providing sufficient information on how to get there and back.
Feedback "...Communicating the results of an action." (p. 23)	• (This should be the responsibility of learning management system vendors) Show a confirmation message when students succeed or fail in submitting tasks such as assignments, tests, or discussion posts. • Show results of quizzes or exams or explain ahead of time that you only post the results at a certain time. • Show an alert if students click on the wrong link.	• Providing no message to indicate whether a submission is successful. • The learning management system or the teacher does not provide students with feedback for a prolonged time, without prior explanation, after students have completed certain tasks.
Constraints "... clues, limiting the set of possible actions," including physical, cultural, semantic, and logical constraints (p. 125)	• Have a designated place for each item instead of allowing students to "figure out" where things are. • Construct modules so that they repeat the same pattern in terms of the item type and sequence. • Show only a finalized version of the content.	• Providing multiple types of access methods for the same content that gets repeated to the point of redundancy. • Having too many options which leaves students wondering if they have adequately completed the tasks. • Having duplicate copies of the same document with the result that both you and the students cannot tell which one is being used.

Norman, 2013

below will help you to develop this planning document. Some of the resources mentioned below may already exist in your school. Check to make sure you do not duplicate the effort.

Course entry page

- ☐ Course number, name, semester, section
- ☐ Teacher name and title
- ☐ Contact information
- ☐ Information about office hours
- ☐ Welcome message in text, audio, or video
- ☐ Link to the syllabus
- ☐ Link to modules
- ☐ Other useful links

Orientation module

- ☐ Tutorials about common functions or tasks
- ☐ Where to get help
- ☐ Information on what online learning is like
- ☐ Question and answer page or discussion forum
- ☐ Student introduction discussion
- ☐ Link to virtual meetings for synchronous sessions
- ☐ Link to reservation site for office hours
- ☐ Link to virtual meetings for synchronous sessions
- ☐ Instructions on using digital textbooks, third-party apps, and other resources
- ☐ Other frequently used resources or links

Teacher resources

- ☐ Instructions for teachers/facilitators
- ☐ Instructions for teaching assistants (optional)
- ☐ Additional resources that a teacher/facilitator/teaching assistant may need

Modules

- ☐ Create a sample module
  - ☐ *Module overview*
  - ☐ *Module reading*

- ☐ *Module presentations*
- ☐ *Method to support students in processing the content*
- ☐ *Assessment*
- ☐ *Interaction activity for the module*
- ☐ *Placeholder for feedback for the module*

☐ Show your sample module to an instructional designer and ask for feedback

☐ Revise your sample module

☐ Duplicate your sample module for other modules (See Task 3.2), even if most content or activities are just placeholders

TASK 3.2 Translate Classes or Chapters to Modules

You may organize your semester using weeks or days as your main organizing scheme. Or you may organize your semester using chapters from a textbook. Decide how you want to chunk your teaching into modules. You may start by designing for a full semester, but at some point, you may be asked to teach a shorter semester with only six or seven weeks. It is more desirable to organize your modules using topics. In the space below, write down the modules you plan to have.

TABLE 3.2

Module Plan

Modules	Topics	Readings	Activities, Assignments, or Assessments
1 Definitions of Learning	• The importance of learning the definition. • Theories and principles.	• Ormrod (1999), Chapter 1	• Participate in the discussion "What is learning?"
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

13

14

15

References

Engeström, Y. (2000). Activity theory and the social construction of knowledge: A story of four umpires. *Organization*, 7(2), 301–310. doi:10.1177/135050840072006

Gagné, R. (1977). *The conditions of learning* (Third Edition). Holt, Rinehart, and Winston.

Norman, D. A. (2013). *The design of everyday things* (Revised and expanded edition). Basic Books.

OpenLearn from the Open University. (2018, December 21). *The Silver Bridge disaster*. https://www.youtube.com/watch?v=8w5Fjouvma8

Puentedura, R. R. (2012). *The SAMR model: Background and examples*. Hippasus. http://www.hippasus.com/rrpweblog/archives/2012/08/23/SAMR_BackgroundExemplars.pdf

04 Develop Robust Assessments

TEACHING IS NOT WITHOUT ITS PERKS: You share your expertise, meet new people, draw energy from their curiosity, and satisfy yourself by witnessing their joy in learning. Assessments, on the other hand, can be less glamorous. Usually, you teach first and assess later. It would be nice to flip it by giving excellent grades first so that students could stop worrying about grades. Perhaps they could then spend the rest of the time learning. It's a bit idealistic, I admit. If that happened, some classrooms might be empty, and online platforms would not register many sign-in activities. Realistically, some courses are required to fulfill a university mission and students need grades. It's an unfortunate reality that what gets tested gets attention.

However, assessment done properly can not only measure learning, but also motivate students to learn. In other words, assessments can become a means to an end: learning. In this chapter, I will discuss strategies and methods for online assessment. In the next chapter, I will discuss how to minimize academic cheating associated with online assessment, one of the greatest fear factors for faculty.

Plan for Assessments Online

Assessments are known by many names: quizzes, tests, exams, and assignments, among others. For ease of narration, I will use the broad term assessment. A key consideration for assessment is what kind of learning outcomes you want to achieve. Learning outcomes are often considered by subject matter experts in curriculum design. It is a matter of *what*, whereas an instructional designer usually spends time thinking about the *how*. Given the learning outcomes desired for students, how do we make sure that achievement is validly and reliably measured?

In higher education, some of these learning outcomes may be determined by the subject matter experts themselves. In other cases, they may come from external accreditation agencies, which administer professional exams people must pass in order to practice their professions as nurses, doctors, accountants, teachers, or lawyers. In K12 settings, outcomes can come from school districts and higher educational authorities.

Outcomes, Assessments, and Instruction

Before jumping to the design of assessments, ask yourself the following questions: What kind of learning outcomes do I want students to achieve in my class? What kind of assessments do I use to make sure students have achieved these outcomes?

How do I optimize my instructional strategies to help students complete these assessments? Such questioning reflects a backward design principle in which you start with the end in mind. You determine your outcomes first, then assess the outcomes, and then design instructional strategies to support students so that they pass the measurement (Wiggins & MacTighe, 2006). The backward design approach contrasts with a more teacher-centered approach in which you would ask questions like: "What do I know?" or "How do I teach that to students?"

TABLE 4.1.

Assessment Planning

Learning Outcome	Assessment Plan	Instructional Strategies
In this course, what knowledge, skills, and attitudes do I want students to acquire?	*For the outcome on the left, what assessments do I plan to use to determine whether students have achieved it?*	*To help students complete these assessments, what instructional strategies should I employ?*

When considering the assessment plan, you may start by examining the goal of the assessments. The most immediate goal is to assess the state of student learning. However, on a more fundamental level, assessment may be used to improve students' learning. My good friend Dr. Bob McKelvain, a retired professor of psychology, once commented that if the purpose of assessment is to determine how intelligent students are, it is easier and much less costly to spend $1000 and a few hours to give the students one of the individual tests of intelligence and post their IQ score on their transcript. Schools do not need to charge families hundreds of thousands of dollars and the majority of young people's formative years to tell them their level of intelligence. Education should help to improve students' lives, help them accomplish their goals, and create conditions for them to have a rewarding and fulfilling life.

Set up Course Grading

Whether offline or online, courses generally have two assessment approaches: formative assessment and summative assessment. A formative assessment refers to a measurement method aimed at improving learning and teaching methods. Frequent, low-risk quizzes are formative assessments. A summative assessment helps a teacher make judgments about student learning, categorize students, or put them

on a bell curve for placement or selection purposes. A familiar analogy, whose origin is lost, compares formative assessment to an annual physical check-up and summative assessment to an autopsy.

However, this dichotomy between the two is an artificial and flimsy one. Some assessments can perform both functions. For instance, a midterm exam can serve as a formative assessment that helps students learn during the second half of the semester while also serving as a summative assessment that generates a grade that contributes to the final total grade. As assessment may not be exclusively formative or exclusively summative. Rather, they may be placed anywhere on the spectrum between supporting learning and judging learning.

In some online courses, teachers limit assessments to several high-stakes tests, without identifying how students have learned and what teachers can do to improve students' learning. Instead, you could use frequent low-stakes tests to understand where students stand in the learning process. A common misunderstanding is that formative assessments do not generate grades. As discussed above, an assessment can serve both a formative and summative purpose. You could assign lower weighting for those skewed a little further in the general direction of formative assessments and higher weighting to the more summative ones. Combine different assessments to scaffold students toward success. Table 4.2 provides an example of a combination of assessments that determine the final grade.

TABLE 4.2

Example of Assessments and Weighting

Assessment Items	Total score	Weighting
Attendance	50	5%
Participation	50	5%
Ten quizzes, each worth 10 points	100	20%
Five assignments, each assignment has a full score of 100 points	500	20%
A mid-term and a final exam, worth 50 and 150 points, respectively	200	30%
Virtual presentation, 100 points	100	20%
Total	**1,000**	**100%**

When you look at the grade calculation table above, consider the following questions:

How do I make my graded items work together? As you can see, teachers can use multiple assessment methods throughout a semester. Low-stakes quizzes can be designed to help students prepare for their exams. Assignments can stand as

separate pieces or as incrementally expanding tasks, culminating in a final project or presentation.

How many points do I assign for each item and category? Your assessment method sends a message about the importance of activities in your course. Be intentional about them. In the example shown in Table 4.2, attendance and participation receive relatively low weighting. For some courses, such as doctoral seminars, the quality of discussions is more important than some other assessments. In that case, increase the weighting for such discussions.

Should I use raw scores or weighted scores? Some teachers just use raw scores to calculate final grades, which is fine, but remember to make the calculation easy for yourself and your students. In most cases, students find it easier to think in terms of percentages or increments of 10s or 100s that can easily translate to percentages. If you have a total score of 875, it becomes less obvious how much students are earning at any given time of the semester without using a calculator. Try to make your total score 100 or 1000, if possible.

Weighting works best when you want to show the importance of gradable items or their categories. Weighting also gives you the flexibility to add or remove items from a category of gradable items. For instance, in Table 4.2, you have a 50-question midterm exam worth 50 points and a final exam worth 150 points. When you put them together in one category, they will be weighted proportionally based on their total points in the category. If you decide to weigh them equally, you can assign them to their category and make each worth 15%. Then it does not matter that the raw score of one was 50 points and the raw score of the other was 150. With the weighting method, you can choose to add or remove an item, such as a quiz, throughout the semester without impacting fairness for any students. You can also drop one or more low scores in a category without changing the weight or importance of the category.

EXCUSING, CURVING, AND DROPPING GRADES

There are many ways you can adjust students' grades. You can penalize students for late submissions. You can excuse a grade for legitimate reasons. You can curve a grade if everyone in the class has done poorly due to the assessment design. You can drop one or more grades within a category. As your school may use different learning management systems, I cannot show you how to do that in each of these systems.

There are plenty of online tutorials for each of these functions for the particular system you use.

Consider the following principles when you plan your grading policies:

Be consistent. Do not change the grade for one student but not for another in identical circumstances. Admittedly, with the *Family Educational Rights and Privacy Act (FERPA)* forbidding the sharing of grades, your grading decision may not be made public to students. However, students may still talk and compare. Be sure you do not post grades until you have assigned grades for all students.

Be fair. Make sure your grading is fair. Avoid the impression of handing out easy "A" s, which will inflate grades, destroy fairness, and eventually damage your authority. Future students will hear from other students or online reviews that it does not make any difference whether or not they put in good work in your class.

Be transparent. In your syllabus and course orientations, let students know what your grading policies are. For instance,

- What are the consequences if a student does not participate in class activities?
- Do you plan to accept late assignments?
- Will there be a penalty if students submit an assignment late?
- Under what circumstances will you consider excuses?
- Will you curve grades when the grades skew toward extremes?
- Do you plan to drop one or more low grades?

Be compassionate. You have a lot of power as a teacher. Use that power to encourage learning. Also, be aware that power can have profound implications for a student's life. Some may need a certain GPA to maintain their scholarship or stay on an athletic team. Some want to have an excellent grade to stay on an extracurricular team, or to apply to college or graduate school. Do not say to students that grades do not matter. You may be a compassionate person, but technology plays an intriguing game with our behaviors. With technology standing in the middle, teachers may not feel empathy towards students since they do not see students in person every day.

Automate. If you have to make constant decisions about grade adjustment, you may benefit from automating some of your grading processes. Some learning management systems make it possible to deduct points for late assignments automatically.

It may also be possible to set up your course not to accept assignments after the due date. Automation does not mean you lose your power to negotiate terms with students because, in most cases, you can overwrite these automatic settings. Spend some time learning the ins and outs of your learning management system.

EXTRA CREDIT

Having worked with several learning management systems, I found that one of the biggest complaints from teachers to vendors is the lack of an efficient mechanism to consider extra credit items in final grades. However, awarding extra credit is usually a pedagogical rather than a technical issue. Generally speaking, extra credit should be used sparingly, if any, because it often creates more issues than the issues you want to resolve. If you still want to use extra credit, you should examine the purpose of having extra credit activities. It helps to ask yourself questions like the following:

1. Do I want everyone to participate in this activity?
2. What message am I sending to students by having extra credit items?
3. Have I included statements in the syllabus about how extra credit items will affect their final grade?
4. Will extra credit items affect participation in regular graded activities?
5. Have I marked and categorized extra credit items clearly, so they are not confused with regular items?
6. Am I confusing my students?
7. Am I confusing myself?

Below are a few scenarios involving extra credit, together with some suggestions.

An extra credit item that should have been a regular grade item: If the assessment activity is something that you want all students to participate in, make it a required item and assign a weight to it. If you would like to add items "on the fly" during the semester, you do not have to use the extra credit method to include new items and exclude others. Adding extra credit items may confuse students when they compare what your syllabus says and what you have said in the course. It is better to create clear categories and add items to a category when the need arises. Assignment groups and weighted grading allow for flexibility in the number of items in a category, leaving room for changes in your assessment. Dropping low grades in a

category makes more sense mathematically than having extra credit, which may or may not count toward the final grade.

Extra credit for "above and beyond" work: If the purpose is to motivate students to do more than what the course requires of them, I would recommend adding a category for extra credit items. Make the category worth 0% if you use weighted grading. Explain to students what this category is for. Then create extra credit columns for this category and do not publish them. This will prevent students from seeing the extra grades and asking you why the total grade does not reflect what they achieved in the extra credit activities. Enter any possible extra credit grades as needed. While grades are not posted, students will not see these grades, but they will see that the columns and an extra credit category exist, which may motivate them to do extra work if interested.

Extra credit for grade adjustment: If the purpose of having extra credit items is to give grace to students, to adjust scores for borderline cases (for instance, when someone is only one point away from an A, for a course with a total point of 1000), calculate extra credit items only towards the end of the semester. Otherwise, there may be situations where students feel they have earned enough points through extra credit arrangements that they do not have to put in much effort towards the end of the semester. That could adversely affect their motivation in the learning process.

In the cases above, be mindful of the message you send to students with the use of extra credit items. Prioritize having regular grade items and categories.

Common Online Assessments

The following is a list of common ways to assess and promote student learning in an online course.

Quizzes

A quiz is the most common type of assessment for testing students on the content or skills of a certain chapter, module, or virtual class. A quiz is usually short and contains a limited number of questions. You can administer a quiz in a module to help students process the content. You might use standardized questions, such

as multiple-choice, true or false, matching, categorization, or ordering, as the main question types when designing your quizzes.

Some professors do not use standardized questions at all under the assumption that they do not accurately assess student learning. Others say that standardized test questions are artificial ways of testing learning that will not work in "real life." I beg to disagree. If you believe that other non-standardized assessments, such as papers or discussions, are better assessment methods, remember that you would never force employees to write an 800-word essay in an hour or ask employees to participate in graded discussions. In a sense, almost all assessments are proxy methods to evaluate student learning, but standardized tests may encourage students to study to obtain a good score. Some professors use multiple attempts or open-book quizzes with a time limit to encourage students to use the quiz-taking process to increase their exposure to the content. In this way, low-stake quizzes become great ways to enhance recall and retention of learning.

On a practical level, standardized quizzes can be automatically graded, saving you time you can spend elsewhere, such as providing feedback for assignments. If you teach a very large class, having these standardized quizzes is extremely helpful to encourage learning without overworking yourself.

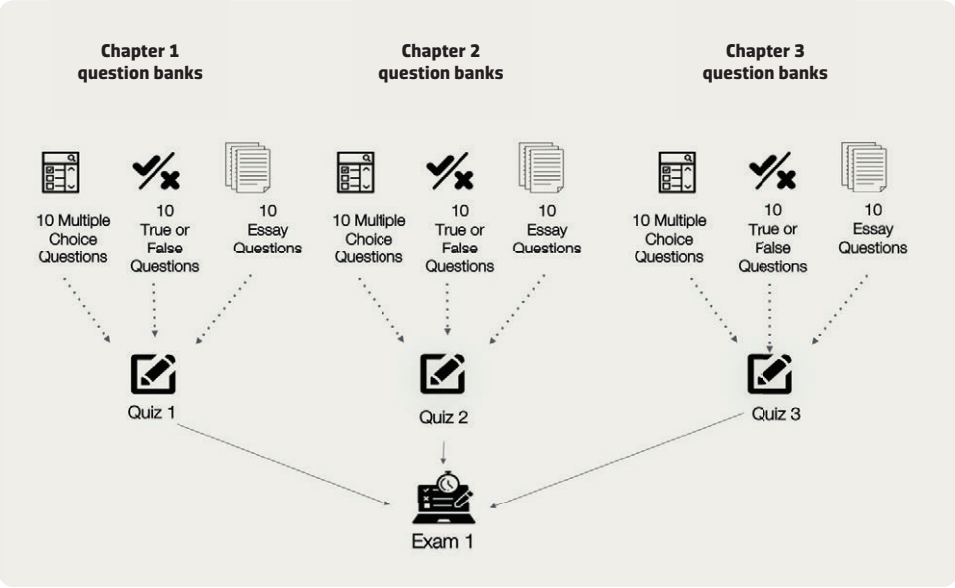
A quiz can also include non-standardized question types, such as short answers or essays. However, if it is a longer piece of writing, check that your learning management system is reliable for lengthy writing. If it does not support automatic saving, or if it logs students out after some time of perceived inactivity, you might want to use assignments or other methods to collect such work. Nothing frustrates test-takers more than a technical disruption when they are busy writing.

Please also note that producing quizzes is an increasingly easy process now with the spread of artificial intelligence. For instance, you can have Google Bard (bard.google.com) to generate quiz items for you, which you can then edit. Blackboard now has an auto-generation tool to produce question banks based on the text you enter. If you have some quizzes in Word, tools like GetMarked (https://digitaliser.getmarked.ai/) can help you quickly turn text-based quiz items into online quizzes. In all these cases, make sure you read the questions and answers very carefully to make sure they meet your needs. Discard, add, and modify as needed before you release items to students.

EXAMS

The exam category includes midterm and final exams. They resemble quizzes and probably use the same function in your learning management system, but they usually consist of more questions. If you intend to use the same question items for both quizzes and exams, sequence your design activity accordingly. Design your question bank first, and then draw different types of questions from the question banks to form quizzes. When working on exams, you can turn quizzes into question banks from which to select questions (Figure 4.1). You can also select questions directly from the question banks upon which you have built these quizzes. In this sense, quiz-taking becomes a preparation for exams.

FIGURE 4.1
From Question Banks to Quizzes to Exams



You can form quizzes by drawing fewer questions than what the question banks contain, thereby creating a large variety of combinations to ensure everyone in the class gets a different quiz in terms of the questions they get and the order in which they appear. You can draw four multiple-choice questions, four true or false questions, and two essay questions from Chapter 1 question banks to form Quiz 1. Or you can program a quiz or an exam in a certain way, as shown below. Let's use Quiz 1 as an example. Your question choice and sequence can be the following:

- Questions 1-4 are randomly selected from the Chapter 1 multiple choice question bank.
- Questions 5-8 are randomly drawn from the Chapter 1 true or false question bank.
- Question 9 is a randomly drawn essay question from the Chapter 1 essay question bank.
- Question 10 is a question you add manually, not randomly drawing from any question bank so that everyone will answer the same question.

For high-stakes exams, you could require the use of screen-locking software such as the Lockdown Browser and Monitor. Your learning management system may also provide test logs that can tell you whether students have left the test-taking page. Communicate this capability to students, or even demonstrate it early on in your course, rather than catch students off guard.

ASSIGNMENTS

Depending on the subject you teach, assignments can appear as papers, problems to solve, products to produce, or presentations to share. They can be very simple in format, or super complex with multiple moving pieces. In most cases, you and/or your teaching assistants will have to grade these assignments.

Instead of repeating similar comments during the grading process, use rubrics to reduce your workload while also improving feedback efficiency and effectiveness. Rubrics may seem like a bean-counting method as you check items off. However, they can make you more consistent in grading without superseding your ability to annotate and comment. You simply have a more predictable way to assign grades and show strengths and weaknesses.

For high-stake assignments, consider plagiarism detection tools like Turnitin to check student work. Turnitin also includes a grammar check to benefit students who struggle with writing mechanics. If there are multiple drafts you collect, it is good to use Turnitin for the final draft. Some professors also use a Turnitin self-check tool for students to monitor and improve their writing, because the tool also provides feedback about their writing issues.

GRADED DISCUSSIONS

Discussions are often seen as ways to promote interaction and build a learning community. They can also be graded, thereby serving as assessment methods as well. To grade a student's overall participation, you can assess the number of their substantive posts, or check the course analytics to gather data on student participation, at least measuring the frequency and quantity of contribution. To assess the quality of discussions, it is easier to grade by a specific thread that would include students' original posts and their responses to others.

PRESENTATIONS

Face-to-face courses often ask students to present their learning to the class. How do you do this online? There are two main methods. Asynchronously, you can have students record a video of themselves presenting and post these videos to a video platform or discussion board for students to view.

You can also facilitate student presentations synchronously, scheduling one or more virtual meetings for students to present. If students simply present slide by slide, you can choose to be the only one to share the screen to simplify the logistics. Ask students to submit their presentation materials to you on time so that you can put them together and show them as students present. Doing so will minimize the time needed for switching between sessions. Alternatively, you can enable screen sharing for meeting participants so that they can run their presentations, especially when it is necessary for students to show different windows or applications during the presentation process. With virtual sessions, it is necessary to create time slots for students to sign up. Use either a calendar or collaborative page (Google Docs, Wiki Page, for instance) to facilitate the sign-up process.

GAMES

Online educational games are another method of enhancing a course. When some teachers hear games, they think of complex video games, which are difficult for an average teacher to design. You do not need any programming skills to gamify your course. For instance, using tools such as Badgr (https://badgr.com/), you might create a badging system to gamify the learning process. When students complete

specific tasks, they earn badges that can be used for grading or shared with others. Earning badges may soon turn into a competition, as students can see where they are in the game from game leaderboards. Other applications, such as Kahoot, can introduce fun competition to the learning process as well. Quizlet (https://quizlet.com/) is another easy tool to help students practice or test their knowledge or skills with small game components.

Some games do not involve any video technology but do require teachers to design game scenarios. For instance, a history course can gamify the events leading up to the First World War. A literature class can require students to design a magazine's special issue, using the characters, plot, and historical settings of Shakespeare's *Hamlet*. There are many ways to gamify a course for any subject and at any level. With a simple search in Google, you can uncover a variety of resources to use.

DIGITAL STORIES

We usually remember stories better than we remember theories. You can cultivate student storytelling skills while covering your subject matter by assigning storytelling projects.

In the production process, students learn to use multimedia editing software independently or as a group. Their digital skills improve along the way, skills they will use in the future. If you are teaching a general education course using digital stories as an assignment, be mindful of the diversity of your student population. Digital media majors can produce polished videos, but for others, it can be a challenge. Adjust the scoring method to address the potential issue of disparity in digital skills. For example, assign 20% of the weight to the quality of production to encourage good work, but assign the remaining 80% to the content of the digital story.

Tools for digital storytelling include professional applications like iMovie (https://www.apple.com/imovie/), Camtasia Studio (https://www.techsmith.com/video-editor.html), and Adobe Premiere. Some professional applications, such as Spark Video (https://spark.adobe.com/make/video-maker/) and Shadow Puppet (http://get-puppet.co/), may include free plans that students can use to produce great videos. Your students may know additional applications that they are better at using. Give a few suggested applications for those who may not have a clue about producing storytelling assignments, while allowing flexibility for those who excel at other applications.

DIGITAL PORTFOLIOS

The concept of portfolios may be familiar to fine arts students who showcase a collection or repertoire of their work. Digital portfolios, which are easy to demonstrate to potential employers, are also gaining popularity among majors that are not related to fine arts. For instance, majors such as communication studies, teacher education, and English literature also use portfolios.

As an assessment method, a digital portfolio, or e-portfolio, curates various artifacts to demonstrate a student's achievements, interests, and professional qualifications. A portfolio may include personal statements, resumes or biographies, courses completed, important assignments, published works, teacher evaluations, and any other materials that can demonstrate a student's learning and future potential.

Digital portfolios, when used as a course assessment, do not include every possible item about students, but only what you ask them to demonstrate. Such course portfolios should include personal reflections on student learning. You do not want your students to simply throw content together into a pile without any intentionality. Portfolios developed close to the time of graduation can serve the dual purpose of course assessment and job preparation.

Digital portfolios are generally stored on the Internet and can be viewed by outsiders. If there is a privacy problem, have students password-protect the portfolios before posting them.

There are professional educational portfolio tools such as Portfolium (https://portfolium.com/) that schools can purchase for use. If your school does not provide these tools, students may use the free or basic version of these tools. Another alternative is to use the digital portfolio function of your learning management system, if available. Your LMS makes it easy to retrieve coursework and teacher comments. When you decide to use such tools, check how public portfolios can be and whether they will stay if the school changes to a new learning management system or if there is a way to export them to another platform.

Alternatively, you can encourage students to use a reliable blog or Wiki site to develop digital portfolios too. For instance, WordPress (https://wordpress.com/) or Google Sites (https://sites.google.com/) does a fine job for portfolios. You can even ask students to use LinkedIn, a public-facing website, as a portfolio tool since LinkedIn allows users to showcase their work or group projects. These portfolios can be easier to share with multiple audiences, and they stay as long as the companies behind these sites do not go bankrupt.

PROJECTS, PROBLEMS, PLACES

Project-based assessments require students to complete a project, which can involve either a fictional or an authentic setting that enables students to apply a set of skills and their knowledge of the topic. Such assessments are popular among educational thinkers as these projects are closer to the work settings that school teaching should prepare students for. In 1991, legendary movie director George Lucas and venture capitalist Steve Arnold started a foundation called Edutopia (https://www.edutopia.org/), whose core strategies are comprehensive assessment, integrated studies, project-based learning, social-emotional learning, teacher development, and technology integration (Edutopia, n.d.) Over the years, the foundation has showcased examples of project-based learning from all around the world. It is common for K12 schools to use project-based learning to create products such as mousetrap cars, robots, and other gadgets. Project-based assessment can open doors for students, leading them toward discoveries, science fairs, and even careers.

However, when you assign project-based assessments, beware of "Grecian Urn" projects, a term coined by educational podcaster Jennifer Gonzalez to describe projects that require a lot of effort from students, end up looking nice and fancy, but have little relation to the learning outcomes you want students to achieve (Gonzalez, 2016). Projects that keep students busy without helping them learn can be quite frustrating to students.

In contrast to project-based assessments, some assessments are labeled problem-based assessments, which require students to choose a problem to solve, such as water pollution in the town where the school is located. Students may not end up tackling the problem, but if they do, all the better. In most cases, they just provide the design that will be used to solve the problem. The problem can involve multiple projects. These problems can be real ones from authentic settings. Students may have to work through some initial chaos before getting a handle on the problem but working through the confusion can be part of the learning process. Trying to solve real problems can be engaging as it presents students with a vision of what is really "out there" for them to work with. It adds an element of relevance to the learning process. The world is full of problems as it is. There is no need to invent new ones for students to work with if working with real ones provides more significant learning, meaning, and satisfaction.

Another concept that I want to briefly mention is place-based assessment, which may include elements of project- and problem-based assessment but emphasizes anchoring the assessment and even the entire learning process in the local environment. For instance, a history course may ask students to work on a

problem or project from local history rather than the United States or world history in a larger context. An environmental science course may require students to address the problem of groundwater contamination in the local community. A social work class may try to solve the issue of lunches during the summer vacation for impoverished students in urban centers. Some of these may evolve into real solutions for the local community. However, even if they do not, place-based assessment encourages students to access local areas and people and become more aware of the community that may impact their learning and their lives in general. It transforms everything and everybody around a student as a teaching resource. We may remember that during the Covid pandemic, many students stayed in their hometowns, unable to go anywhere. Many teachers have already found that it is best to make use of their local resources to complete some of the projects they assign. I would like to encourage you to continue to use place-based thinking as you design your assessments. If you are interested in learning more about place-based learning, visit "Promise of Place" (https://promiseofplace.org/), a website that is dedicated to place-based learning.

When designing place-based assessments, be mindful of student safety and the limitations they may face. Projects no longer happen in a safe classroom environment. Do not subject students to risks beyond what your school allows or put students in uncomfortable or unethical situations to solve a local problem. You should also consider the possible issues of access, especially for students with fewer resources to tap into. If you assign students to place-based projects, consider pairing local students with out-of-state or international students who may not be as familiar with the local environments. The limitation of access can also turn into a strength: If you are teaching a course during the breaks when students are typically away at home, you can enrich student learning if you encourage students to use their local contexts for assignment completion. For instance, if a student is basing a project in Mongolia or Turkey, it would help the rest of the class to learn about other cultures. It may also help you to rethink your assumptions based on your local contexts.

GROUP PROJECTS

Group projects are challenging in a face-to-face setting. Some students are domineering, taking over everything, and some are free riders, not contributing anything, and most are in between the extremes. Group projects are so tricky that some teachers do not consider them at all for online teaching. However, what human groups in the work setting do not have problems? We do not stop living or working because

of problems. Use your group project as a safe preparation for more interesting days ahead. Over the years, I have heard from teachers that one group of students almost broke into fistfights. In another story, a group of students threatened to sue each other. As the courses ended, I suppose the tension dissipated. In most cases, students look back at the projects and appreciate the bond they have formed and the team dynamics they have learned, in addition to mastering the subject matter that they are teaching.

To make group projects work, here are a few tips:

Make a case for group projects

Use group projects when there is a compelling reason to do so, instead of throwing a group project to students just for its own sake. If a project is better completed individually, consider whether assigning it as a group project is a wise decision. Group projects are useful in many scenarios, and here are a few examples:

1. The project requires diverse skills that students cannot all have or learn, given the time students have.
2. The task is too large and daunting for the average individual student to complete during the time available. Consequently, it should be divided up among several people.
3. Students are starting to form small "cliques," with students of similar demographics or interests hanging out together. You decide to use a group project to shake things up and create a more diverse and inclusive learning experience.
4. There are too many parallel theories, concepts, procedures, or skills to learn. In such a case, you might have each group focus on one area. When the projects are completed, the groups share what they have learned. This way, each group becomes a specialist in one area but also learns something about the other areas.

Communicate expectations

Once you have determined the rationale for the group project, communicate it to students so they know this is not busy work. In addition, make your group expectations explicit, especially if you have international students in your course who may

not be used to group projects in their home country. Develop your elevator pitch about the project, telling students why group projects are important for this task. Share past success stories and lessons learned.

If your class is very diverse, some students (such as non-majors) may naturally feel that other teammates (majors) have a better idea of how to proceed. You will need to help students move out of their comfort zones and contribute to group work. Articulate your ground rules. Share with students how you expect groups to behave and how you expect each member of the group to participate.

Create Intentional Teams

If you do not have a compelling reason to divide students in a certain way for group projects, use your learning management system to assign students to groups randomly. You also have the choice to put students in teams using certain criteria you deem important, such as their test scores. You may want to use scores as a proxy method for "top achievers" to mix with potentially "low achievers" so that each project team has an equal chance for success. However, please note that students with top scores do not necessarily rise as top performers or leaders in teams. Similarly, some students who we usually seen as poor performers may find their strength in group projects and shine there.

You might also create teams for students to self-enroll. Students may naturally enroll in teams with their friends or students from the same racial or ethnic backgrounds. There may be times when this would help, for instance, when students from different countries work on projects to showcase their culture. In most cases, however, it is desirable to mix students so that they can enrich each other with what they bring to the team. Inform teams that such effort is intentional and that it is a good thing to break cultural cocoons instead of hanging out only with people they know. Spend some time discussing cultural sensitivity and mutual respect, as well as tolerance for cultural differences.

To avoid the issue of too many cooks spoiling the soup, you may need to assign specific roles, such as group leaders and secretaries. Or you may create as many roles as there are team members. Students can volunteer for these roles, or the group leader can decide. Use rubrics to communicate how you intend to grade submissions from groups. You may even want to have a peer evaluation element in your projects to hold students accountable for one another. The peer evaluation may be hard to do because you do not want to leave students wondering if they are "tattle-telling" on each other. It might be easier to use checklist items or work breakdown structures in

project management so that students can measure what each one has done objectively. Finally, you want to create a culture of trust and respect in which students will likely accept and appreciate an honest critique of their work.

Provide initial guidance

Make yourself available for guidance as some students may never have experienced a group assignment or a group assignment of the type you are assigning. Ask them questions to see how much they understand. Provide guidance when they need it. If certain parts of your instruction are intentionally vague, to be defined by students, let them know and tell them that figuring things out is part of the learning. Explain that there are no "correct" answers or approaches to certain problems.

The start of a project is often quite difficult. You may need to schedule orientation meetings at the start or initial review meetings to discuss project ideas. Be prepared to talk to project teams during office hours, or you can simply schedule a virtual meeting with them. It is easier to do so online, as you do not have to coordinate rooms and times for such meetings now that most students have become familiar with virtual meeting tools.

Working with international students

Speaking as someone who used to be an international student, I have found that international students encounter special challenges in group projects. Some international students, for instance, are better at reading and writing. It may be a good idea to use online discussions for students to have more time to articulate their thoughts instead of just using a Zoom session for communication.

Though it is important to encourage and support students as they try to master the English language, bear in mind that language barriers will exist for a long time, if not forever. If you use videos, make sure that you provide closed captions. Having things in written form helps students revisit your instructions. It is also a good practice to prepare a project sheet listing subtasks and persons responsible so that everyone will have a clear understanding of his or her role.

I would offer one final word of caution. I sometimes find the characterization of groups creates unnecessary tension or new barriers. For instance, labeling East Asian students' study habits as "rote memory" and thinking styles as "collective" may create unnecessary resentment. You are saying that they cannot think

creatively or think for themselves. The more you know students as individuals, the less you will generalize based on their group affiliation.

Free-range Assessments

In recent years, my colleagues and I have been experimenting with the concept of the "free-range assessment," in which teachers allow students to choose their methods and medium of assessment instead of prescribing a specific method and medium. This method is considered valuable because not all students who have mastered a competency may be equally capable of demonstrating their mastery with the assessment methods prescribed by a professor. For instance, when both English majors and art majors are taking a graphic design course, it is often (not always) possible for English majors to produce better papers. In contrast, art majors will usually produce better artistic representations. If you ask for only one kind of assessment, you may fail to measure the desired learning outcomes accurately and consistently. The issue looms large, especially for general education courses enrolling students from different disciplines.

I also found that such flexible assessment methods provide multiple means of expression and multiple ways of engagement, features often advocated for the universal design for learning. Finally, free-range assessments have a motivational factor for students, making their work more relevant to their fields of study.

Free-range assessments differ from traditional assessment methods prescribed by instructors, such as papers and exams. I may call the latter prescriptive assessments. Table 4.3 describes the differences between the two types of assignments.

TABLE 4.3

Free-Range and Prescriptive Assignments

	Free-range assignment	Prescriptive assignment
Competency	Same, but could be enriched or enlarged by the variety of assignment	
Instruments	Defined by students, examples: • Papers • Blogs • Wikis • Digital stories • Movies • Sculptures • Music • Posters • Concept maps • Others	Defined by teachers, examples: • Quizzes • Papers

Instructions	• Vaguely defined • Allows for uncertainty • Includes rubric • Includes examples	• Specific in the format, academic style, and even file format
Students' role	• Articulate design • Complete development • Explain relevance	• Complete assignment in the format described by teachers
Teachers' role	• Provide feedback • Provide evaluation rubrics • Facilitate peer review • Grade assignment • Curate past work	• Grade assignment • Provide feedback
Designers' role	• Guide teachers in finding a medium to collect, grade, and share coursework • Teach teachers to use technologies	• Guide teachers in finding a medium to collect and grade assignments.

This type of assessment was first created by Dr. Jennifer Shewmaker, Provost of Lipscomb University. While she was working as a professor of psychology at Abilene Christian University, she had been teaching Bronfenbrenner's Ecological Model of Development for several years. Students in this general education course come from different departments. Not all of them are enthusiastic about writing a paper about the theory. She started to give them multiple opportunities to apply the theory of the Ecological Model of Development to real-world situations.

The assignment required the students to define each system within the theory and to consider their personal development by answering a series of questions about the theory and its application. Taking a constructivist approach, Shewmaker asked students to relate the theory to their own growth. She instructed students to share their thoughts "in whatever way you would like," though she did give a few examples, such as a paper, digital story, podcast, or film. She found that students produced work that exceeded her expectations, including a 15-minute video, a digital story, a wind chime, a computer program, and a developmental "clock." Overall, Shewmaker said her students were better able to demonstrate mastery of knowledge through this assignment than they had been through the previous paper assignment. Their expressed understanding of the theory was better and their ability to apply the theory to real-world cases was stronger (Fang et al., 2015).

I hope this chapter gives you some ideas about what type of assessment you can use with students in an online course. You might have noticed that no one approach works for every situation. Develop a strategy and a plan. Be creative as well. The bad news about online assessments is that it takes a lot of time and effort to develop them. The good news is that once they have been developed, you can use them for a long time with only minor adjustments from year to year. That said, adjustments do become necessary due to the change or obsolescence of content, advancement in

technology, and possible compromise of your assessment. In the next chapter, I will discuss some of the academic integrity issues surrounding assessment. But before I move on, complete the two assignments below.

TASK 4.1 Craft Your Assessment Strategy

Use the following two tables to plan the types of assessments you would like to use in your course. After you have filled in the tables, add the corresponding items into your learning management system, even if you simply insert placeholders for them at this moment.

TABLE 4.4.

Assessment Planning

Learning Outcome	Assessment Plan	Instructional Strategies
In this course, what knowledge, skills, and attitudes do I want students to acquire?	For the outcome on the left, what assessments do I plan to use to determine whether students have achieved it?	To help students complete these assessments, what instructional strategies should I employ?

TABLE 4.5

Assessments and Weighting for a Course

Assessment Items	Total score	Weighting
Total		**100%**

When you are finished, check to make sure your assessment plan, your syllabus, and your actual assessments are all aligned.

TASK 4.2 Create Sample Assessments

Using the plan you developed above, create assessments for a sample module. Your assessments can be quizzes or exams, assignments, projects, or any other type of activity that will help you to assess learning. Consider having both summative and formative components to your assessments.

Use your learning management system to deploy your assessments.

Quizzes or exams

If you use an exam, set the following parameters in your exam setting:

1. Time: When will I make this available, for how long? How much time do I give students once they start?
2. Attempt: Do I allow them to take it multiple or unlimited times? If so, do I take the average grade, the highest grade, or the most recent grade as my final grade?
3. Security: Do I require a secure testing environment, password, or proctor? What kind of message should I communicate with students to minimize cheating?

Other assignments

If you use an assignment drop box to collect student submissions, consider the following:

1. Time: When will I make this assignment available, and for how long? What is the due date?
2. Attempt: Do I allow students to submit it multiple or unlimited times? If so, do I take the average grade, the highest grade, or the most recent grade as my final grade?
3. Steps: Should I consider prerequisite assignments to scaffold students if the assignment is complex?
4. Is this going to be a group assignment? If so, create the groups, if possible.
5. Do I require peer reviews? If so, provide instructions or rubrics for the group.

6. Will I use rubrics? If so, create the rubric in your learning management system.
7. Will I use a plagiarism application? If so, create the assignment with the plagiarism detection application deployed.

References

Edutopia. (n.d.). *Core strategies for innovation and reform in Learning*. Retrieved December 27, 2020, from https://www.edutopia.org/about/core-strategies

Fang, B., Shewmaker, J., & Self, S. (2015). Designing Free-range Assignments. *Workshop Proceedings of the 11th International Conference on Intelligent Environments.*, 120–129.

Gonzalez, J. (2016, October 30). *Is your lesson a Grecian Urn?* Cult of Pedagogy. https://www.cultofpedagogy.com/grecian-urn-lesson/

Wiggins, G. P., & MacTighe, J. (2006). *Understanding by design (2nd ed.)*. Pearson Prentice Hall International.

05 Combat Student Cheating

ONE OF THE MAIN HURDLES to a teacher's decision to turn to online teaching is the worry that online assessments are not secure. Academic integrity can seem like a nebulous concept, and it is probably better understood through its opposite, academic dishonesty: that is, "...anything that gives a student an unearned advantage over another" (Mullens, 2000). Academic integrity for online courses involves an understanding of ethics, culture, pedagogy, and even technology. Ethical lapses during one's education may carry over into a person's career and personal life. Improving academic integrity not only preserves the integrity of an assessment, a class, or an academic program but also serves as part of an ongoing education that enables a person to grow as a learner, an employee, a family member, and a public citizen.

William Astore, a professor of history at Pennsylvania College of Technology, dismisses the division between the "academic world" and the "real world." Professor Astore argues that "education is indeed a real world, every bit as vital and true as the world of work." (Astore, 2009, p. 8). Colleges and universities are places where people work, learn, relate, and grow as much as (and often to a greater extent than) they do in other work settings. Insisting on academic honesty helps students learn to take responsibility for their learning and personal conduct, which is "real world" in every sense of the phrase.

Confronting academic cheating can ultimately help students grow. Initially, they may be less concerned about academic ethics than about peer, parental, and financial pressure to succeed, and although the nature of these pressures may vary from culture to culture, they are to some extent present everywhere. Higher education institutions must help students understand that embracing academic integrity is a necessary part of achieving success.

IS TECHNOLOGY THE CULPRIT?

Technology is sometimes blamed for "causing" academic dishonesty, especially in online settings. Students can easily use computers to plagiarize from online sources with just a few clicks. Online classes can lend themselves to this type of cheating. My experience offers some ideas about the socio-technological aspects of academic honesty.

Strategies to Fight Dishonesty

As a result of working with professors and investigating the relationship between technology and academic integrity, I have discovered several strategies for addressing the issue:

- Use preventive technology
- Reconsider design of assignments
- Provide alternative resources
- Provide training
- Use honor codes
- Create a culture of ethical behavior

USE PREVENTIVE TECHNOLOGY

Yes, technology can be used to help fight cheating based on technology. While some professors and administrators complain about technology-related cheating, others have used technology to minimize the occurrence of cheating and to make cheating easier to detect. Students are increasingly aware that they leave digital footprints in their work. For instance, teachers can generate attempt statistics for tests that show when a test was started and ended, thereby invalidating student excuses about not being able to log in to tests. As a last resort, screenshots of the relevant online activity can be provided to students to make them aware that excuses are not supported by the evidence. The more instructors use tools such as learning management systems, the easier it becomes to find out whether the LMS truly ate someone's homework.

Technologies like Respondus Lockdown Browser (which locks down the testing environment in your LMS) prevent students from searching for answers. Some schools use additional features of the Lockdown Monitor to provide video surveillance of students taking exams. The application scares or infuriates some students as it gives the impression of "Big Brother" watching them in their private environment. It simply flags suspicious behaviors using artificial intelligence. Teachers are not there to watch students taking exams.

As discussed in the chapter on assessment, instructors can also generate randomized question banks first, and then link to these questions in the question banks. If no two students get the same test items or the same sequence of items, they are less likely to "help" one another.

Programs such as Turnitin can help teachers check for originality and generate reports that show the sources of potentially plagiarized content, as well as the percentage of "matching" between a student's paper and an external source. These initial warnings or flags do not necessarily mean there has been an act of cheating, just as a shadow in an X-ray does not always mean a malignant tumor. However, early warnings are very helpful to teachers by saving them from going through each submission to verify authenticity. Teachers can focus instead on a few flagged submissions. Turnitin also provides teachers with the evidence they need to make a case to students as well as their departments when there is a serious case of academic cheating. Students may not like the use of such programs, but they do hold students accountable to do honest work on their own. The mere use of such programs has the effect of deterring students who might be tempted to cut corners.

Some schools also use plagiarism detection software integrated into the learning management system. We should remember, however, that while technologies to detect plagiarism keep improving, students are also finding new and better ways to cheat. An instructor might focus chiefly on acts of academic dishonesty on the computer only to find that small memory devices and cell phones are being used instead. For example, students can text their answers to peers. Relying solely on technological tools can be risky, hence the need to balance them with other strategies such as designing alternative assignments, offering resources, providing training, and creating a culture of ethical behaviors.

DESIGN ALTERNATIVE ASSIGNMENTS

If you assign assessments that students often work together, consider if it benefits them to change the assessment format by proactively putting students in groups for group projects, collaborative documents, class blogs, or discussions. In addition, some assignments and assessments can be "tweaked" in a way that makes it especially difficult to cheat. For instance, instead of using the same exam repeatedly during different semesters, professors can develop a pool of questions and randomly draw a limited number of questions from the pool each semester, or even for each testing attempt. Such little tricks work well to fight cheating. Most learning management systems have functions that make such randomized tests very easy to design.

It is also a good idea to incorporate more open assignments such as blogging, social bookmarking, podcasting, presentation, and digital storytelling in a course.

Students are better motivated when contributing their original work, as their personal identity is involved. When their work is broadcast to their classmates and possibly to a wider audience, they tend to be more cautious about using someone else's work.

Though traditional assessments are necessary to ensure that students internalize certain skills, knowledge, or attitudes, it is also essential for students to develop skills that enable them to learn in more informal settings where they are expected to consult colleagues, job aids, the Internet, and other performance support systems. An institution's academic program may be the only opportunity they have to learn those skills.

OFFER RESOURCES

Fighting academic dishonesty with nothing more than penalties can have negative side effects. Sometimes policies and procedures for assessments assume the entire student body as potential cheaters. Institutions should create a supportive environment in which students can learn through positive reinforcement. Offering resources is one way to support students so that they do not turn to cheating.

Many universities have rich resources that can help students succeed without cutting corners. For instance, students can go to writing centers for help with their papers. I am often dismayed to find that many students do not know they can use Endnote (https://endnote.com) or Zotero (https://www.zotero.org), which can help them format their academic citations properly. There are occasions when the line between improper citation and academic cheating is blurry. Learning to use tools such as Endnote will better equip students to write papers meeting professors' standards.

Using the technology should not be an afterthought. Rather, it ought to become part of the preparation for students when they do research. I find that sometimes international students go online to search for articles to help with their writing when they could go to the university library database to find more scholarly articles to help them develop better writing skills. To get students into the habit of using library databases, librarians can visit classes to show students how to use the library databases.

TABLE 5.1

Common Resources

If students do not know how to	Recommend the following resource(s)
cite sources	applications such as Zotero or EndNote Purdue Online Writing Lab (https://owl.purdue.edu/)

write effectively	writing center of the university tutoring services Grammarly (Grammarly.com)
find research references	library reference
manage conflicting schedules	student advisors
use a writing software (such as Word)	university tutoring services University IT team LinkedIn Learning (https://www.linkedin.com/learning/)

PROVIDE TRAINING

Students do not always know how to navigate academic integrity issues. Cultural expectations and academic differences confound issues about academic integrity. For example, the issue of intellectual property is not universally understood. Moreover, having to work in a language that is not one's own can be a substantial handicap. I track international students separately to better understand how culture and difficulties with English might affect academic integrity. To help students understand the proper boundaries, schools should make a conscientious effort to educate international students about Western standards of plagiarism.

Teachers should proactively address academic dishonesty. I have been asked several times to serve as an intermediary between professors and students. In a private faith-based institution, ethical behavior is critical to both the instructors and the administration. A special effort is underway to familiarize international students with the U.S. academic environment. A university's teaching and learning center can run workshops to inform students what is considered cheating at their school, what the consequences are for cheating, and what tools or resources they can use to make proper citations.

Training should also be provided for other skills, such as time management, self-discipline, study skills, and copyright awareness. A student resorting to plagiarism to complete homework may have spent too much time on Instagram or Snapchat, for example. The issue might not be a social media issue but rather a problem of time and boundary management. Training in these areas would help.

CREATE HONOR CODES AND POLICIES

It should not surprise anyone that teachers and students do not always share an understanding of what behaviors should be considered cheating. This variance of

understanding can lead to unpleasant confrontations between teachers and students. It is therefore essential that universities and schools develop and enforce explicit policies regarding academic dishonesty, including policies relating to the use of technology. Whether academic cheating is related to technology or not, universities and schools should communicate the boundaries to students.

Relevant codes and policies should be clearly stated in communications such as orientation materials, student handbooks, and course syllabi. When these policies are relegated to fine print, students tend to ignore them, often at their own cost. A more attention-grabbing communication method — including video clips — would help. It would also help to have short, itemized statements about what individual professors perceive as cheating and what they and the university will do in reaction.

CREATE A CULTURE OF ETHICAL BEHAVIOR

We cannot teach behaviors of academic honesty if integrity is not part of the school's culture. When students understand ethical behavior is part of the school's culture, a school can better combat academic dishonesty, because students accept that improper behavior is incongruous with their general environment. When a culture of integrity grows, academic dishonesty drops, even when ubiquitous campus technology seems to make cheating easy.

Academic integrity in an online class may seem like just a technology-related problem. However, solutions ultimately lie not only in technology to prevent cheating but in addressing deeper cultural issues as well. I hope the discussion above gives you some ideas. Next, I would like you to create a plan to deter cheating, using the "cheat sheet" in Task 5.1.

TASK 5.1 Use This "Cheat Sheet"

Use this form to develop a plan to ensure the security of your assessments or assignments in an online setting. Please note that these strategies work for other modalities of teaching as well. The list is not all-inclusive; it just includes some of the common types of academic dishonesty. Indicate in notes if you are interested in using a certain strategy but do not know how. Ask your instructional designer or other professionals who are tasked to support you in developing your courses.

TASK 5.2 Deploy Secure Testing

If your school provides secure testing software such as Lockdown Browser or Honor Lock, learn to deploy it for an exam. Students will need some guidance. Here are instructions I once drafted, using Lockdown Browser and Monitor. Feel free to use it as a template as you develop your own instructions:

TABLE 5.2

A Cheat Sheet Against Cheating

Scenarios	Strategies
The Google quizzer: During closed book exams, students search for answers without your permission	• Limit exam time. For instance, give eight minutes for a 10-item quiz so that students will not have time to look for answers. • If you use tests from publishers, change some of the questions to increase the difficulty of searching for answers online. • Use screen-locking applications such as Lockdown Browser or Honorlock, if available in your school, to restrict searching, copying, and screen sharing.
"Rogue" Groups: Students work together in a group to "crack" an exam when you expect them to work on their own.	• Randomize your questions: Instead of having everyone answering the same questions in the same order, build a question bank first and randomly draw a limited number of questions from the selected banks. • Randomize your question order. • Randomize your answer order: You may find it possible to randomize the order of answers so that one person's A may be another person's B. If you do this, watch out for the "all of the above" type of answers. Perhaps you should rephrase them as "all of the other choices."
Leaking answers: Students who complete an exam early share questions and answers with other students	• Configure your exam so that it does not release answer choices, correct answers, and even grades until everyone has completed the exam. • Choose to hide grades until you have finished grading everyone. • If you teach different sections of the same class, set your available dates in a way that an earlier section loses access after a certain time.
Plagiarism: Students copy materials from others or the Internet	• Use plagiarism detection software such as Turnitin. Your learning management system may come with other detection tools that you can use.

SAMPLE INSTRUCTIONS FOR STUDENTS TO USE LOCKDOWN BROWSER

Lockdown Browser works only on a computer (PC or Mac) or iPad. See the instructions below to get ready BEFORE taking a real quiz your professor gives.

How to Take a Quiz with Lockdown Browser on Your Computer

1. Download the Lockdown Browser and Monitor app to your computer using the following link: (Teacher provides the appropriate link.)
2. Launch your "Lockdown Browser" app on your computer. For PC users, find it from your programs. You might want to create a Desktop shortcut to it if you cannot find one on your desktop already. For Mac users, launch "LockDown Browser" from the Applications folder, or use Spotlight search to search for "Lockdown Browser".
3. Close all other programs before launching the Lockdown Browser. If you have some programs running in the background, you may be prompted to close them. Choose "Yes" when prompted. Restart the computer if you keep having issues. Do this before class to get ready as you may have limited time to take a quiz.
4. Log into your Canvas course using your regular login information.
5. Navigate to the quiz and click on "Take a Quiz."
6. Take your quiz and submit it.
7. Exit the program when you have completed the exam.

How to Take a Quiz with Lockdown Monitor on Your Computer:

Your professor may also require you to use Respondus Monitor, an add-on feature for Lockdown Browser, for non-proctored exams. Respondus Monitor comes with the Lockdown Browser app. No additional software/app is required. Lockdown Monitor uses a webcam to record student exam sessions. Your professor is not personally watching you with the camera. It simply flags suspicious behavior and uses advanced data analysis to determine which exam sessions require the greatest level of attention by instructors.

If Lockdown Monitor is deployed for an exam, you may be asked to complete a few tasks at the beginning, including taking a photo, showing ID, and showing your environment. Your instructor may choose not to use all of these options.

The Lockdown Monitor does not work optimally on the iPad. I recommend that you talk with your instructor about options if you only have an iPad.

How to Take a Quiz with Lockdown Browser on your iPad:

1. Download and install the free Lockdown Browser app to your iPad (Provide a link to the downloadable site.)

2. If you downloaded it some time ago, check if you have updated it from the app store. If your Lockdown Browser app keeps giving you trouble, delete the app and re-download it.
3. Before a test, launch the Lockdown Browser app on your device.
4. Log in to your Canvas account when prompted.
5. Find your course and then click on the quiz.
6. You will see a message to "Confirm App Self-Lock." Tap on "Yes" to confirm.
7. Take your quiz and submit it.
8. Exit the app upon completion of the quiz.

Tips

1. **Take a sample quiz:** Before the first quiz, take a sample quiz (Your teacher may call it by other names, such as Mock quiz, or test quiz) that uses Lockdown Browser and Monitor to make sure you have installed the app correctly. You will not be graded for taking this quiz. You also will have unlimited attempts to take this quiz.
2. **Keep your app updated:** I recommend that you update your Lockdown Browser app when an update is available.
3. **Get ready before an exam:** Have your Lockdown Browser launched and ready before a timed exam.
4. **Seek help:** If you find that your Lockdown Browser/Monitor does not work, contact technical support for assistance before an exam.

References

Astore, W. J. (2009). The wider dimensions of academic integrity. *International Journal for Educational Integrity*, *5*(2), 4–9.

Mullens, A. (2000). Cheating to win: Some administrators, faculty and students are taking steps to promote a culture of academic honesty. *University Affairs*, *41*(10), 22–28.

06 Create Vigorous Content

After determining how to assess students, think about the instructional strategies you would like to use to scaffold students toward success. Typically, you will have to cover certain prescribed subject matter. This chapter will share common ways to present content, principles for message design, and strategies to make learning flow in a multi-device environment.

Why Content

Is it still necessary to teach content? You probably often hear about the teaching of higher-order thinking skills discussed in Bloom's Taxonomy. Bloom, Anderson & Krathwohl (2001) presented the famous taxonomy like a pyramid, with knowledge and comprehension as the broad base upon which to build the rest of the skills. The abuse and misuse of the taxonomy have contributed to widespread contempt for "lower-order" learning, such as knowledge and comprehension. It is as if educators can teach critical and creative thinking in a content-free vacuum, a position that pleases many students who already think they can just google everything they need. However, few can aspire to higher-order skills such as analysis and evaluation without having built a knowledge base.

Basic facts or concepts may involve complex thinking. Besides, you do not bulldoze knowledge and comprehension and move on to evaluation and creativity. You cannot evaluate what you do not know. You cannot create without knowing what others have already created. There should be a healthy balance between various cognitive skills. It is necessary to teach basic content because without it, students may not even have the words they need to Google online for what they need.

There are many ways you can teach content online. One of the basic methods is to have students read materials. Having an online course does not mean you will have students glued to their screens all the time. Staying online hurts students' eyes and health in general, which is why many parents of young children hate "online teaching" with a burning passion. In well-designed online teaching, you can schedule activities for students to complete away from their screens. It is OK to instruct students to read specific chapters in a print textbook. Not everything has to be on the screen for an online course.

Create Your Content

There are times you could also share the required reading as documents attached online. In that case, students would need to read it on a screen. Here are a few common formats you might consider using. Please note that I try to be agnostic about learning management platforms, even though I might have illustrated with Canvas, which I have used for the longest period. Some of the functions that I describe below may be called something else in another learning management system. I will discuss the use of multimedia for content presentation and other instructional purposes in the next chapter.

Content Pages

In most LMSs, you can create content pages directly and edit them when you see a need for change. These pages are probably the most common and versatile form of content presentation. They are just web pages that can include text, pictures, audio, and video. When you embed audio and video in these pages, students can simply click on them and play, instead of leaving the LMS and going to another site, where they could be distracted.

In most cases, these pages are just like a word processing application that you can type and edit. Often you just enter the editing mode and make changes in a "what you see is what you get" (WYSIWYG) view. Or you can copy content from a document and paste it in the editor of a content page. When you choose to copy, you might want to save your document into a pure text file, from which to copy, because formatting codes from a word processor can carry into the content page and mess up the way the text looks. Some LMSs, including Canvas, also have a text cleaner function in the text editor to remove the codes.

A content page should not be too long. If it is too long, consider using lower-level pages (subpages), tabs, or links to separate them. However, do not include too many layers for students to search. If you create a subpage, create a button, or use text to return students to the main page.

In some LMSs, you can turn content pages into Wiki pages so that students can directly edit these pages. Of course, you can even embed a collaborative document such as a Google Doc, which may supply more functions that you can use.

File Attachments

Sometimes content pages in an LMS have faulty or missing functions that make it difficult to edit the format the way you want. For instance, the content page editor is cumbersome when handling tables or graphics and may not represent the format you would like to preserve. In such cases, you could choose to add file attachments directly to your LMS. You can add files from Microsoft Word, PDF, or other document files. You cannot easily edit these files in your LMS. You will need to download them to edit offline and re-upload them in your LMS. Be sure to remove or replace the older version in your file management system so that you do not have many similar files floating around, confusing yourself and everyone else interacting with these files.

You can also link to Google Docs or other cloud-based documents in your LMS. Make sure you set the access to the proper level to allow students to see them. With such cloud documents, you do not need to go through the painful process of editing by downloading it, editing it, and re-uploading it. You can add it to your LMS once and edit it in the cloud without updating it in your LMS.

Presentations

Some teachers post their files online using the format of Microsoft PowerPoint, Keynote, or Google Slides. Presentation files alone are not usually a good substitute for the actual lecture in which you use the files. However, they may still help students retrieve learning or to take notes. They may be more effective if they accompany some of your video lectures.

Be careful of file size limits for your course. If you include too many large files in your LMS, such as large presentations, you will quickly use up your course storage. In that case, you might consider adding large files in Google Drive and linking to them in your LMS. Of course, your school's LMS administrator can add more storage for you, but if you copy the course into the future semester, you will need larger storage space as well. When the course gets clogged up with many large presentation files, it may also slow down the pages' loading.

If you want to use a presentation file to replace your lecture, consider adding audio for the slides. You can do so in Prezi (https://prezi.com/), another cloud-based presentation tool. You can also add audio to PowerPoint or Keynote presentations, but make sure you export them as movies. Otherwise, students would have to

download these large files together with the audio, and the presentation files with audio sometimes do not work. If you export them as a movie, you can share these movies on YouTube, Vimeo (https://vimeo.com/), or any other video platform your school uses. Embed them on your content page, so that students can click on them directly.

External Pages

You can also use external pages to present the content if these external pages have additional features not available in your LMS. For instance, Spark Pages (https://spark.adobe.com/) can be used to create stunning pages that are easy to navigate and rich in multimedia content. Genially (https://www.genial.ly/en) contains interactive content that may not be available in the LMSs, including interactive pages, infographics, guides, and some games. For instance, you might add "hot spots" with additional information, videos, or questions.

Online Lectures

In the chapter on media production, I will discuss the production of videos for online lecturing, but first, consider whether lectures even have a place in online courses. You may hear that lectures are passé." Yes, if the lessons are dull or irrelevant. However, good lectures abound online. Students appreciate the value of deep insights poured from "sages on the stage." Listening to smart people talk can be a tremendously enriching experience. Otherwise, why do people listen to TED talks? As much as I want faculty to embrace innovative teaching practices, I do not think any teacher should feel guilty for giving lectures. Good lectures serve to pass on knowledge. They also train students to take a break from their multitasking life, listen attentively, and take notes, which is a form of active learning for students (Worthen, 2015).

In online courses, teachers usually post lecture videos. Instead of restoring the practice of teachers talking during the entire class period, professors should intentionally incorporate some "small teaching" techniques in the lecturing process. For instance, they might build into that process retrieving, predicting, and self-explaining activities (Darby & Lang, 2019; Lang, 2016). You can do this with a virtual meeting where you and the students can interact a bit. How do you get students to interact if it is a recorded lecture? There are ways. Check if your LMS uses video platforms that allow you to incorporate quizzing and comments for lecture videos. If not, use a

discussion board following a video for students to post their responses or feedback. Instead of breaks in lectures, consider chunking lectures and post them separately, interleaving lectures with activities for students to process the content.

Use External Content

Instead of producing the content from scratch, you may have the option to use content from somewhere else. Here are a few options:

Content from a Colleague

Your wonderful colleague may have spent a lot of time developing content that he/she wants to share with you as a package. You can import that content into your course, keep your course unpublished, and sift through the content. Sometimes, you may find you can just tinker with it a little and use it in your courses. Other times, you may use one part of the content and no other parts. Sometimes, you may find it easier to start over, as the circumstances, timeframes, and target students have changed. In other cases, content from your colleague may carry a distinctive style that is not yours, and you may need to draw inspiration from it, but create your own content.

Content from Publishers

Textbook publishers, to increase sales, are publishing content packages to accompany textbooks. Sometimes they may send you an entire course, complete with PowerPoint files and quizzes, which you can then customize based on your needs. Or they just share specific resources with you, such as PowerPoint slides. In either case, they have done some of the heavy lifting for you in terms of content production.

You can use their resources if their usage conditions and copyright laws allow. However, as textbooks keep changing versions, it may be problematic to use their resources exactly as they are and expect to reuse them for many years. Rather than using their PowerPoint files to produce slide-by-slide video lectures, create a lecture video talking about key points in the video. If you follow the slides rigidly, you may need to start all over when the publisher makes even small changes, such as changing the numbering of chapters one to two.

Sometimes publishers want to link you to their portal. Most major publishers now have methods to integrate with your LMS so that the activities you complete in their portal will go into the grade book in your LMS. In most cases, they work well, but there are challenges to be aware of when deciding to use this kind of integration. Your school's LMS administrator or instructional designer usually does not have the access necessary to change anything in the publisher's portal because publishers limit their access very strictly. This is understandable because content that is compromised goes on the Internet for anyone to grab. As you are the only person who can access the textbook resources you use, you will also need to contact your publisher's sales representative or technical service team when there are problems. Secondly, sometimes the integration links do not work well, and it may take a lot of effort to import the grades into your LMS. You might be better off generating the grades in their system by category and then entering the total grade from the category in your LMS. Finally, when you copy the content in your LMS to use in a new semester, the external links will be broken, and you will need to relink them, which can be a hassle. All this said, it is still valuable to use the publishers' content. It just creates a different set of problems as compared with producing content on your own.

Youtube, Khan Academy, and LinkedIn Learn

You can use a lot of content from the Internet. No, I do not mean "some guy on the Internet" who does not know what he or she is talking about. If you search carefully, you will find that professionals also publish much quality content online for the public to use. LinkedIn Learn, formerly known as Lynda.com, provides well-produced tutorials for popular applications you would like to teach your students. You can use an entire lesson if it is short or pick specific videos to embed in your course. Khan Academy teaches K12 students in many subjects and it is well-liked by both students and teachers. Your LMS may have sites like Khan Academy, YouTube, and LinkedIn Learn already included in the content editor so that you can search for content without having to leave your LMS!

With so much content online, you do not have to reinvent the wheel to cover the same content. What is your value as a teacher? The content you find externally is published online with the public or a specific audience in mind. It is usually not tailored to the needs of your class. Your role is to screen and select the most appropriate content, and with your knowledge of your students, to relate the content to their prior, existing, and future learning. You do not just dump a whole bunch of videos from the web into your module. Instead, consider a sandwich method: wrap

the external resources with a preface of your explanations and expectations at the front, as well as assessment, feedback, and comments at the end to firmly anchor an otherwise generic piece of content into your own module of teaching.

Copyright, Fair Use, Public Domain, Creative Commons

When you use external content for your teaching, you often run into the question: Am I allowed to use this? I do not pretend to be a legal expert by any means, so please check your school's legal counsel if you are in doubt. However, here are four main categories of user permissions for materials you may consider.

Copyright-protected materials, which you cannot use without the owner's direct permission.

Fair use materials, materials you can use for teaching and learning. For example, suppose you use a tiny portion of the material in a password-protected environment without impacting the owners' ability to benefit from their work. In that case, your use may be protected by fair use principles and *The Teach Act*.

Public domain materials are those whose copyright protection has expired or been lost, such as literary works written by Shakespeare. Public domain materials also include facts, phrases, and theories unless they are unique re-creations. Materials produced by the federal government may also fall in the public domain category.

Creative Commons (https://creativecommons.org/) materials are materials shared by the owner for use under certain conditions or licenses. With some licenses, you are allowed to use but you must give proper attribution, or you can use it only for non-commercial purposes. In other cases, you can remix and share the material using the same license ("share-alike"). Depending on which license the owner shows, you can use the work in a free or restricted way.

With so many permission types, how can you be sure which ones to use? Again, ask your school's legal counsel or librarian if you have doubts. Like any legal matter, copyright can get complicated quickly.

In general terms, copyright works like a traffic light. There are "red light" materials you certainly cannot use without direct permission from the owner, as your use may adversely affect the owner's ability to profit from the materials. Unless you are teaching a movie you have directed, you probably should not show a commercial film to your class. If there is a movie you want to show to make a point, your library may assist you. Alternatively, ask students to subscribe to Netflix or Amazon Prime if the movie you want to show is there. Students may already have an account, or they can have a free trial. They can also pay a subscription fee as they would for a textbook.

Then we have "green light" materials you can use, such as federal government publications you have already paid for as the taxpayer or works that have lost copyright protection. You can also freely link to materials authors share online for you to see. However, you may not be permitted to download them and share them in other ways.

The difficult ones are the "yellow light" materials that you must use with caution. Copyright protects the owner of the work so that they can profit from it. However, technologies have advanced so fast that the laws may not have caught up. If you are not being shared and talked about, you may lose relevance in this age of instant access and quick obsoletion. Therefore, many copyright owners try to balance protecting their rights and promoting their use. When dealing with such materials, it is best to ask for permission to use certain materials. The owner may just say yes. If the owner does not respond or says no, check if you can work with your library to make e-reserve arrangements to access certain materials. Alternatively, you may argue fair use in using a small portion of the materials in a password-protected environment.

Please note that even if the owner permits you to use some materials, it does not mean you can distribute them to a broader audience. In your course, tell students specifically about the copyright protection requirements. For instance, tell students that you are using a movie clip for this class only. They are not permitted to download it and share it with others. Having this kind of disclaimer in a course offers you and your school some protection when there is a dispute.

Design Principles for Content

A graphic design professional could tell you more about design principles for content formatting that might involve the choice of fonts, color matches, and graphical representations. However, I have found the CRAP principles by Robin Williams (the graphic design one) to be helpful in thinking about the format. Williams uses CRAP as an acronym for contrast, repetition, alignment, and proximity (Williams, 2004).

Contrast

In your text, use bold contrast between your headings and the regular text. When you format your page in the LMS, choose format types to set headers apart from standard text. Contrast makes it easier to read content arranged in small chunks. Contrast also highlights the content titles, so that students can see the hierarchy of concepts and their flow.

Repetition

Once you find a pattern in your format, repeat it for consistency and predictability. When you are happy with the way a page looks, duplicate it for similar pages to keep the format as you change the content. You may also need to repeat your modules' pattern in terms of the kind of items you include and the sequence in which they appear.

Alignment

Choose your left, centered, or right alignment carefully for your text and headings. Usually, left alignment is easier for normal paragraphs, while some titles can appear at the center. Also, align your items in a module so that it is easier to see where everything belongs. For instance, if you have multiple assignments, it might be a good idea to have a text header with the related assignments listed under it. Alignment and indentation can show the relationship of content pieces.

Proximity

It is frustrating for students to have to go back and forth, looking for items that should have been together. Move content of a similar nature close together. I once encountered a long syllabus in which the teacher talks about a particular policy and then moves on to a gradable item, then a list of topics to cover, another policy, and then the next gradable item. It would be better to group similar content together and create meaningful sections so that it is easier for students to read and retrieve information when needed.

The proximity principle also applies to the arrangements of artifacts in your course. If you have instructions about a particular assignment in the syllabus, remove it. Move it into your assignment instructions. If you use a rubric, do not just attach the rubric as a document somewhere in the course. Create a rubric in your LMS and place it in the assignment or near it so that students know that you intend to use it. It is not merely a philosophical guide in your mind.

Create Fluid Content

As universities move to "bring your own device" (BYOD) policies, students access their online teaching with various devices, including Mac or PC computers, Chromebooks, Android or IOS phones, and tablet devices. We are also seeing an increase of wearable technologies as well, including the Apple Watch and the Apple Vision Pro. Students may own more than one device. What was once known as mobile learning should be named fluid learning now, as instructional content and activities flow from one device to another. We have probably all had a glimpse of this when we access Amazon Kindle content on different devices. We can pick up a book and read it on the computer and then pick it up in Audible on another device. How can online course content and activities flow naturally? Fluid learning requires some design. For it to work, your course content must have these attributes: neutral, granular, portable, interactive, and ubiquitous.

Neutral

Content must be accessible via various devices and platforms, using not what is "leading edge" or "bleeding edge" in the market but rather the more generic protocols or formats that most, if not all, devices accept. This includes using PDF files for attached content, HTML5 for web content, and YouTube or Vimeo to publish video content, so students don't have to figure out which file format plays on which device.

Granular

You might want to create content in smaller units when possible so that students can access them anywhere, anytime. A major benefit of mobile devices is that people can use them to fill in little gaps of time when they are waiting in line at the box office or waiting on a meal in a restaurant. Although they probably would not use this time to watch a 45-minute lecture, they might watch a five-minute video demo of a concept. So, when possible, it is good to break explanations into short, discreet, and yet meaningful units. Granularity also makes it easier for users to download and replay content on various devices when Internet access is a concern.

Portable

Content must be transferable across platforms. Users can access the content they stored on Evernote (http://www.evernote.com), Microsoft's OneNote (https://www.onenote.com/), or Google Keep (https://keep.google.com/) on most smartphones and computers. While easy to use and appealing in its interface, Apple's iBook faces sluggish adoption because of its restriction to the Apple platform. For instance, previewing a digital book produced with iBook Author can only be done on an iPad. Although such a restriction might yield commercial benefits, it is not necessarily appreciated on a university campus, where people use a wide variety of devices.

Interactive

Learning flows when it is active and interactive; when learning stagnates, it is finished. Using various devices not only makes content consumption and creation easier, it also creates possibilities of interaction — with content, among students, and between teachers and students. Applications such as Quizlet (https://quizlet.com/) and Brainscape (https://www.brainscape.com/) let students interact with content through retrieval and self-test, which are evidence-based learning activities that make learning stick. Students can collaborate using Google Docs, which they can access on most computers and handheld devices. Some educators use Twitter or Facebook pages to interact, adding a social dimension to the classroom experience. Educators can also interact with students using platform-neutral applications. Such interactions need not occur using fancy new apps; it is better to find the lowest common denominator app that everyone knows how to use. Google docs, for instance, might be just as useful as any expensive interaction software.

Ubiquitous

Fluid learning does not limit learners to the time they spend using devices. Fluid learning flows out of classrooms into multiple social contexts that provide authentic learning opportunities. Mobile devices and emerging devices can take learners beyond traditional learning boundaries to various real-life contexts, such as museums and workplaces, where devices can augment reality and help users interact with the contexts. Geotagging and GPS functions of mobile devices present further learning opportunities, allowing students to take learning into their local communities.

TASK 6.1 Create Sample Content

In this assignment, create content for one of your course modules. This would consist mainly of the materials that typically would go into your lecture if you were to teach face to face. Examples include:

- A page with various media components
- A file
- A lecture video
- A page that embeds content from an external source

Your content may be in text, audio, or video format. You could use a combination of formats. You will also be required to apply the principles described in this chapter.

TASK 6.2 Create an Overview

Use the following overview sheet as your guide as you plan your content for the sample module. After that, populate your module content. Create placeholders for corresponding activities.

TABLE 6.1

Overview for a Module

OVERVIEW FOR MODULE...

Objectives:

In this module, we will cover _____ (topics).

After finishing this module, you will be able to:

- _____
- _____
- _____
- _____

Activities:

Complete the following activities by their posted due dates.

- Read ...
- Watch...
- Take quiz ...
- Post your response to the discussion ...
- Other appropriate module activities...

References

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives* (Complete ed). Longman.

Darby, F., & Lang, J. M. (2019). *Small teaching online: Applying learning science in online classes* (First edition). Jossey-Bass.

Lang, J. M. (2016). *Small teaching: Everyday lessons from the science of learning* (First edition). Jossey-Bass.

Williams, R. (2004). *The non-designers design book: Design and typographic principles for the visual novice* (2nd ed). Peachpit Press.

Worthen, M. (2015, October 17). Opinion | Lecture Me. Really. (Published 2015). *The New York Times*. https://www.nytimes.com/2015/10/18/opinion/sunday/lecture-me-really.html

07 Use Vigorous Media

YOU MIGHT HAVE HEARD that a picture is worth a thousand words. A video can contain a thousand pictures. So, when you consider developing content, consider using media in your presentation. Vigorous video content can make your online course better than the face-to-face alternative. In this chapter, I will share why the use of media can enrich your content and how you can use them, as well as best practices for their use.

In the past, online courses used text more heavily because technologies for multimedia recording, storage, and sharing were insufficient. Instructional media production became a privilege for a select few. We are out of that dark age now because everyone can use their phones to record videos and share them. If you can post videos using SnapChat (https://www.snapchat.com/), Instagram (https://www.instagram.com/), Facebook (https://www.facebook.com/), or Tik Tok (https://www.tiktok.com/en/), you should be able to create instructional videos as well. That said, instructional videos do not necessarily use the same principles that make social media videos or commercial videos effective.

Sometimes teachers are reluctant to record instructional media, choosing instead to conduct only synchronous sessions. Synchronous sessions are fine for online teaching, as I have discussed in an earlier chapter, but they are not without limitations. Synchronous sessions require teachers and students to stay online at the same time. For some students, there may be too few devices in the home for everyone to participate in online learning if multiple sessions are going on at the same time. In addition, live sessions are more vulnerable to technical limitations and interruptions caused by network speed, traffic, and platforms.

How Media Assist Learning

Students who are digital natives, namely those born after digital tools are widely used, are familiar with the social media environment; they may produce media as much as they consume them. Most digital immigrants, on the other hand, first access media as consumers. When they become producers, they naturally model producers they have seen on screens: the film actors or TV anchors. They should not. Instructional media are quite different from mass media in the forms of TV or radio broadcasts. Instructional media serve students in their learning. Here are some of the ways instructional media can be used to benefit learning.

Strengthen teacher-student relationship

In online courses, if teachers do not show their faces or voices, and use only text to teach, students will not be able to understand what kind of people their teachers are. The totality of our impression of a teacher consists of text, image, and voice. Often, we learn not just the content, but the content in association with an individual. Using instructional media increases a teacher's presence in the course. Similarly, teachers may also want to see and hear their students. If you rely on text as the only means of communication in an online course, you deprive yourself and your students of the opportunity to learn about each other as people. Learning becomes more transactional, not richly personal and social.

Increase learning channels

For an online course to be effective, you will need to create multiple paths to learning. Increasing learning channels may sometimes seem like icing on the cake, but in some cases, it may be the deciding factor for success or failure. A family might not have a printer to print many pages of content for students to read, but they may be able to use a smartphone to download audio files to listen to. Having multiple ways to access content makes access more equitable. Diversifying materials into media will also encourage students to move their eyes away from the screen, which will reduce strain and fatigue for their eyes, bodies, and minds.

Save teaching time

This may be a bit counter-intuitive: Under normal circumstances, one would assume that it takes too much time to produce a recorded media session because it involves recording and editing. When you catch a major error, you may have to go back to the drawing board and start all over.

However, in the long run, it does save time. A nicely produced multimedia lesson can be reused for different audiences and timeframes to save you from repeating yourself every time you want to cover the same content. You can instead devote your time and energy to other aspects of your teaching, such as providing individual guidance and feedback.

In addition, speaking is usually faster than typing. I have transcribed many conversations into text, and I found that five minutes of talk usually converts to 700 or

800 words in text. When teachers are correcting student homework, producing a video at the speed of thought may provide students quicker and richer feedback than typing comments.

Appeal to multiple senses

The ancient Chinese philosopher Xun Zi (c. 310 – c. 235 BCE, alt. c. 314 – c. 217 BCE) once said: "Hearing it is better than not hearing it. Seeing it is better than hearing it. Knowing it is better than seeing it. Applying it is better than knowing it. Learning will not stop until you have applied it." (“不闻不若闻之，闻之不若见之，见之不若知之，知之不若行之；学至于行之而止矣。") This progression of hearing, seeing, knowing, and applying sounds like Bloom's Taxonomy in the style of a proverb. The focus on hearing and seeing also help us to understand the case for instructional media because it helps to appeal to multiple senses of the learners. Researchers do not agree on the usefulness of the learning style, but instructors ought to vary presentation styles to increase student exposure to content (Brown et al., 2014). Sometimes it may even become necessary to change your medium to support students with disabilities. These considerations call for the broader use of educational media.

In media recordings, especially videos, you can connect your talk to visuals you show either on the screen or in your physical environment, which helps to communicate your content to students. Videos appeal to multiple senses and that provides more stimulus to our brains. Having multiple senses working together is especially helpful for language learners because they can speak or hear the language, instead of simply reading or writing in it. In some countries, foreign language teaching prioritizes reading and writing, which results in unsatisfactory learner performance in listening and speaking. I have seen some foreign language professors who write beautifully but speak to one's horror.

Produce Media

Instructional media usually includes audio, talking head videos, and screencast videos. They may need special software to produce them, platforms to host them, and methods to share them. Let's look at each of the media types and how we can go about creating them. Please note that technologies change fast. Some of the tools that we use may have better alternatives in a few years or even in a few months. You

may also know of other tools that work equally well. Teachers might want to keep scanning the horizon for better tools.

Audio

Instead of just assigning materials for students to read, see if there are ways to create or transform or create certain materials in audio format. If you listen to audio books, you may have discovered that listening to content makes it much easier to finish a book. Students may also appreciate some audio versions of your reading materials that they can listen to while they are exercising in the gym or walking on a trail.

You could use a digital recorder to record your materials, which would be natural and authentic if you have the time to complete them. Your device may already have some recording and editing applications, such as Garage band on Mac or Microsoft Voice Recorder on a PC. You can find free recording apps for your smartphones. There is also a free application called Audacity (https://sourceforge.net/projects/audacity), which can be used to record and edit. You can also use Zoom to record. Zoom recordings include an mp3 version only.

If you want to produce content automatically, consider using a text-to-speech tool such as Natural Readers (https://www.naturalreaders.com/online/) for automatic conversion to audio. The reading will be more machine-like, but most students still appreciate having an audio version they can listen to. When you make content available in audio format, you really do students a big favor by moving their eyes away from the screen.

If your LMS does not support the adding of audios, you could post your audio on SoundCloud (https://soundcloud.com/) or other sites where you can host audios. Alternatively, create a series of podcasts to share your content, using any podcast service such as Buzzsprout (https://www.buzzsprout.com/), Spreaker (https://www.adamenfroy.com/recommends/spreaker), or Podbean (https://www.podbean.com/).

You may also encourage students to alter their reading format themselves. With Microsoft's Immersive Reader, which is available as a Chrome extension, students can turn any text into an audio format using many of Microsoft's applications, including OneNote and Microsoft Word. They may even have functionality on their phones to read the text to them.

Video

Videos of yourself talking, or "talking head" videos, may be ineffective for teaching if you use them for every situation. However, if used in moderation and with strategy, they add personality to your course and enrich the learning experience. Think of all the TED Talk videos you have watched. Most of the time, it is just a speaker standing there talking, like a sage on the stage as they are often called. You do not have the glamor of Matthew McConaughey or Jennifer Lawrence to be recorded to show on the screen. However, you in your authentic self may have your own way of charming your students into learning.

Talking head videos can be produced in a media studio if your school has one. Such a setting provides better equipment and a soundproof environment for you to complete the recording, as well as professionals who can coach you about editing and help you share it when the recording is complete.

Alternatively, you can use your own smartphone, tablet, or computer to record, as long as you can find an environment that does not hurt your sound and visual quality. Usually, you produce your videos behind closed doors to minimize distraction. Put a note on the door telling people that you are recording and how to contact you or others in case of emergencies. However, teaching during the pandemic taught us that other family members might also be stuck at home working or studying. It becomes challenging to maintain a cone of silence around yourself. The good news is that students tolerate or even appreciate your natural habitat. An occasional dog barking or cat meowing may not be as bad as you think.

With your mobile device, you can simply use the camera app to shoot the video, which you can trim easily as well. On a computer, you may have other apps that allow you to shoot talking videos. On a Mac, Photo Booth is easy to use. On a PC, you can use the Photos app or Windows Movie Maker to make and edit your videos. You could also record a Zoom session, even when you are the only participant.

I also find that the Mevo camera is super helpful for producing talking head videos. You can connect it to an iPad and operate it from the iPad. The quality of the video is usually better than videos produced on the Phone or iPad. You know what you are looking at, whereas with a smartphone or tablet, you sometimes forget where the camera is and the video produced may show you looking somewhere else all the time.

If you need to edit your video on your device, tools like Camtasia (https://www.techsmith.com/video-editor.html) and applications such as iMovie, Windows Movie Maker, and QuickTime Pro can all do a fine job. If you want to be more professional in your editing, you can also use tools like Adobe Premiere. However, do

not worry too much about editing the videos to make them Hollywood quality. Be at peace with some of the little imperfections that you have there if they do not bother students.

Do you need to add sound effects and transitions and other gimmicks to your video? If you know how to do that, and you do not distract students, go ahead. However, sometimes additional soundtracks can become annoying. If you intend to add closed captioning to your videos, do not add additional background soundtracks first because you may need to get the closed captioning automatically. External soundtracks will interfere with the transcription.

Screencast

Screencast videos are videos that share your screen as you interact with it using mouse clicks, finger taps, or a drawing stylus. It has great promise in education as you are showing what you are telling, approximating what you would do in the classroom with a projector and a whiteboard.

There are numerous screencasting technologies, including Screenpal (https://screenpal.com/), TechSmith Capture (Jing) (https://www.techsmith.com/jing-tool.html) and Camtasia (https://www.techsmith.com/video-editor.html) for desktop and laptop computers; and Showme (https://www.showme.com/) and Explain Everything (https://explaineverything.com/) on mobile devices. There are also multiple applications for synchronous screencasting, such as Skype, Google Meet, and Zoom, which all have screen-sharing features. Compared to earlier days when users had to rely on hardware such as DVI frame grabber cards and dedicated converters, users can now record screencast videos on a single device using its existing audio and video capabilities, without having to use external hardware. The software has also become easier to use. For instance, a Mac user using OS Mojave or later can simply press **Command+ Shift+5** simultaneously to record a screencast video session. On a PC, pressing WIN and G simultaneously will bring out a "game bar" with which you can record your screen video. It was first included for gamers, hence the "game bar" window. Yet it works for other screen videos as well. On an iPhone or iPad, users can record a screen video by turning on the screen recording function in the settings. It has never been easier to produce a screencast episode. No special recording equipment or spaces are necessary unless special circumstances, such as noise from a computer's fan, call for the utilization of external recording devices or facilities. Some of the benefits of screencasting in giving feedback have been well documented in research studies, as I summarized in the literature review section

of my dissertation (Fang, 2019). Instead of typing your comments for student feedback, you could talk about their work, and show their work on the screen at the same time.

You can complete your recording one slide at a time, using PowerPoint, Keynote Spark Videos, or Explain Everything. If you make a mistake in one of the slides, you can easily go back and fix it without having to repeat the entire presentation. With screencasting applications like Camtasia or ScreenPal, editing individual slides may take more effort. Recording a whole session in one sitting has its benefits: Compared to recording slide-by-slide, recording the entire section all at once will make your video sound more natural.

Video Storage

If your school has professional video tools such as Kaltura, Panopto, Echo 360, or Canvas Studio, you can use them to produce videos as well. With these tools, your videos can be published directly on their platform and embedded in the course. Lacking any of these tools, you could upload the videos you produced to YouTube, Vimeo, or Google Drive, using the unlisted or password protection option, if you are not willing to share the videos with a wider audience.

Ideally, embed the videos directly in your course pages, instead of providing a link. Once students are out of their course environment, other videos may capture students' attention before they return to the original page.

Uses of Instructional Media

Instructional media can be used in an online course in a variety of ways, including lectures or presentations, assignments, feedback, assessments, and discussions.

Presentations

You can post audio or video sessions online as your lectures. Once they are posted in your learning management system, students can watch them during the timeframe that you specify or at their own pace. You could record a synchronous session and post the recording, after some simple editing, online for students who have missed the session. Similarly, if your school requires you to teach remotely during specific

times, you could teach synchronously of course, but you could also have some video created early on to present to students. Demonstrating certain applications can be difficult when you are teaching synchronously about an application that may compete for the same audio or video input. I once tried to use Zoom to demonstrate how to use Zoom. It did not turn out well. It is much easier to record the video about the use of Zoom in advance and share it with the class before the session or direct them to watch it later. You might also play it during the session.

Assignments

Sometimes an assignment might require that students create videos, for instance, when you want them to send a recording of their presentation, practice, or performance. Some students may not be familiar with the production and sharing of videos. You might want to preface your assignment with instructions and tutorials. Be cautious sharing examples from other students, which may be seen as exemplary and unintentionally limit creativity. Show examples only when students struggle unnecessarily. Provide the tools that they may need to produce videos. Or direct them to resources where they can seek help. Such resources could include your university's media studio or tutorials in LinkedIn Learn. Also, tell them how to submit their videos to you. Students sometimes run into difficulty uploading large video files. If that is a problem, a student can save the video on YouTube and share it with you as a private or unlisted link. Ask them to keep a copy of their video just in case uploading fails and you cannot see the video.

Discussions

Instead of writing text for a discussion board, consider using media including audio and video. It helps build the community of your course. For instance, use a video discussion for students to introduce themselves to you and to each other at the beginning of the course. You could include a guide about the information that you would like them to include in their videos. I have also known professors who asked students to do literature reviews and then summarize them using videos. This kind of assignment requires students to develop a few slides using a template that you have sent to them. They work on the slides and then record themselves narrating over the slides. Sometimes, slides may not meet your needs, and you can turn students loose to produce videos. You might be surprised by their creativity.

Assessments

Audio or video can be part of your assessment. For instance, if you are teaching music history, include audio or video pieces for students to listen to and answer your questions immediately. Quizzes or exams for most learning management systems have text editors that support the embedding of media components. Specialized video platforms, such as Instructure's Studio, support the use of quizzing in the middle of a video. This would be a quick way to ensure that students finish watching the video. However, pedagogically, it is better for students to watch the whole video and then complete the quizzes separately, on another page. When you put quizzes within the video, quizzes are too close to the content that you just covered. Students do not have to go through the mental process to recall and retrieve, which helps them with their learning.

Feedback

You could use media to provide feedback to students. You might say that is insane because you have so many students in your class. How can you produce a video for every one of them? It will save you time if you are familiar with the approach. Typically, people talk faster than they type. Instead of trying to type for 20 minutes about student work, you may find it quicker and more effective to talk about it and demonstrate your comments on the screen using screencast videos. It might save you time.

Tips for Using Media in an Online Course

When producing media of various types, some of the principles that I have suggested for synchronous sessions also apply. Have the necessary audio and visual equipment. Find a time and place for recording. Turn off notifications and alerts to minimize distractions while you are recording. Create a recording account on your computer to have a clean background for recording. In addition, you might want to consider the following factors when you record multimedia for your online course.

Audio, Video, or Screencast? Choose the type of media

If visuals are not essential components of your message, use only audio. Audio files are generally smaller, taking up less storage, and often easier to post. Use talking-head or full-body videos for teaching that needs to show facial expressions, gestures, body language, or physical movements that would be difficult to represent using text, audio, or a screencast video. For instance, if you are teaching physical education, dancing, musical performance, painting, or chemistry lab, record yourself talking or demonstrating. One caveat for such videos is that camera videos should usually not show teachers writing on the whiteboard or on a piece of paper, while they are teaching. A student would have difficulty seeing your words clearly. Just scan or screen capture the content and explain it using a screen-sharing application. You certainly could put everything in one video, editing it with picture-in-picture effects, or you could put two views on the same screen. If that is challenging for you, remember you can post multiple videos on the same page, sandwiching them with text that explains how the videos relate to other parts of your module or course.

Screencasting is desirable when there is a lot of content on your computer or device screen that you want to explain to students. During the recording process, you can record the entire screen, part of the screen, or just a specific application. When you are recording only part of your screen, the rest of your screen becomes a place where you can put other materials for teaching. For instance, you can have your lecture notes on the part of the screen that is not being recorded. Or have the transcript of your lecture on the screen, beside the section you would like to record. In this way, you give yourself a little "teleprompter" on the screen.

When you produce a screencast video, you could add the talking head in a corner, but it may not necessarily improve learning, as we learned earlier in the chapter about synchronous learning. It will not hurt either. It may improve the social and emotional value of the presentation. If you do use the talking head in the corner, remember that your eyes might be looking in a certain direction. It would be natural to place your talking-head video on the bottom right corner of your eyes looking at the top left section, where your recording screen is. It will look strange if you have your PowerPoint slides on the left and your eyes are looking towards the right. Getting this right takes some practice. Simply record a sample one for a few seconds and see how it turns out and then adjust as needed.

Polish or perish? Choose the quality of media

Instructional videos and commercial films are different species. Commercial films must be polished, or they perish. When a director is not happy with the result, he or she cuts the recording and starts again, sometimes in multiple attempts. Instructors cannot afford that approach. Many instructional videos are "burn after you read" types of videos that are used only once or twice. For instance, video feedback on a particular student's specific assignment is probably read once and forgotten. It is a huge waste of time to repeatedly record and edit the same segment that is meant to be seen by one student only once. If you are working on such videos, focus more on the substance of your talk. Do not try to perfect it. In most cases, just trim the beginning and the end. The quality expectation determines how much effort you will put into producing professional-quality video.

Other instructional videos, however, may be used repeatedly in future courses. For this kind of video, often lecture videos, you may seek higher quality by editing and redoing it. Use a recording studio, professional editing software, and the help of professionals if they are available.

By asking you to weigh the two options, one of which is quickly produced videos with little editing, I am not advocating for the sloppy quality of videos. Rather, I encourage you to do a quick cost-benefit analysis of your effort so that you can spend your time wisely. It would be best if you can consistently produce quality videos with minimal effort. With practice, you probably can.

TikTok or TED Talk? Choose your media length

There is considerable debate about the length of video lectures. You may have had people tell you that the optimal length is four or five minutes or 15 minutes. There are extreme cases of people doing 1-minute lectures, which is teaching gone TikTok. However, if that works, why not? Many instructions for assignments, for instance, can work very well within a one-minute timeframe. There is no formula that you can use to calculate optimal lecture length. However, consider first if there is a limit to the software you use. If you record your lectures using online software, there may be time limits. Perhaps you can use this time limit as your natural guide for length.

If you record videos with software offline, and that software does not give you a time limit, you still need to limit yourself. There are several reasons why shorter is better for videos.

- Video recording takes up memory. It would be annoying, if not altogether tragic, to have your computer's fan start to run and then shut down when you are in the middle of your production. With shorter videos, your loss would not be as devastating.
- Your students may have a short attention span. If you have a very long video, they may start to do other things and get distracted. Or they will just leave the video.
- Finally, you might have to redo the recording due to technical issues, distractions, or your own mistakes. It is easier to redo a shorter video in the event of production difficulties.

If you prefer recording longer lectures, I have had a pretty good experience recording a Zoom session with only myself in it. I can talk for a long time while keeping everything recorded. But still, be aware of your time. If you record a 60-minute video, see if you can introduce a transition every 15 or 20 minutes when a student is about to "zone out."

Public or Private? Choose the publication method

After you have created your audio or video clips, you may want to post them on your dedicated teaching platform, rather than a public video storage site. Public sites make very good use of your viewing behaviors to predict and push content or advertisements. This pushed content can waste your time and your students' time. If you can use a public site, such as YouTube or Vimeo, choose carefully how you publish your videos. With YouTube, you can publish content in public, unlisted, or private mode. Public videos can be seen and searched by anyone. Unlisted videos are available only for those with shared links. Private videos can only be seen by individuals you share them with. With Vimeo, you have even more layers of access, including anyone, only the creator, people you know, people you choose, people with the password, and people with the private link. By varying the privacy settings, you determine how public or private your videos will be outside of your class.

Another major consideration for video publishing is whether you allow students to download the video. Some students appreciate the ability to download videos because they do not have good Wi-Fi at home, or their phones have limited data. They may want to go to a place with good Wi-Fi to download the video and then watch it at home. Because there is the choice to download a video, I would recommend that you

choose your video quality carefully. A video of very high definition usually is large and takes a long time to download. Sometimes you may not lose the quality of video dramatically if you move away from gigantic high-definition videos.

Using media in teaching is a field of study all in itself. I hope this chapter has given you some ideas to get started in using media in your online teaching. To put into practice the ideas I have discussed in this chapter, I would like you to complete the following assignment:

TASK 7.1 Produce Sample Media

Continue to build on your sample module by producing and then incorporating some media components. Choose one or more of the following options:

- An audio segment
- A short video
- A screencast video

Consider using your media component as a lecture, discussion, assignment, or part of your assessment.

TASK 7.2 Create a Welcome Video

Create a welcome video to be placed in your course home page or orientation module. This video should be your elevator pitch about the course. You could include brief information addressing these questions:

1. Who are you?
2. What is this course about?
3. What are some of your expectations of students?
4. What might students expect from you?
5. How do students proceed in the course space?

References

Brown, P. C., Roediger, H. L., & McDaniel, M. A. (2014). *Make it stick: The science of successful learning*. Cambridge, Massachusetts: The Belknap Press;

Gardner, H. (2011). *Frames of Mind: The Theory of Multiple Intelligences*. Basic Books.

Leite, W. L., Svinicki, M., & Shi, Y. (2010). Attempted validation of the scores of the VARK: Learning Styles Inventory with Multitrait–Multimethod Confirmatory Factor Analysis Models. *Educational and Psychological Measurement*, *70*(2), 323–339. https://doi.org/10.1177/0013164409344507

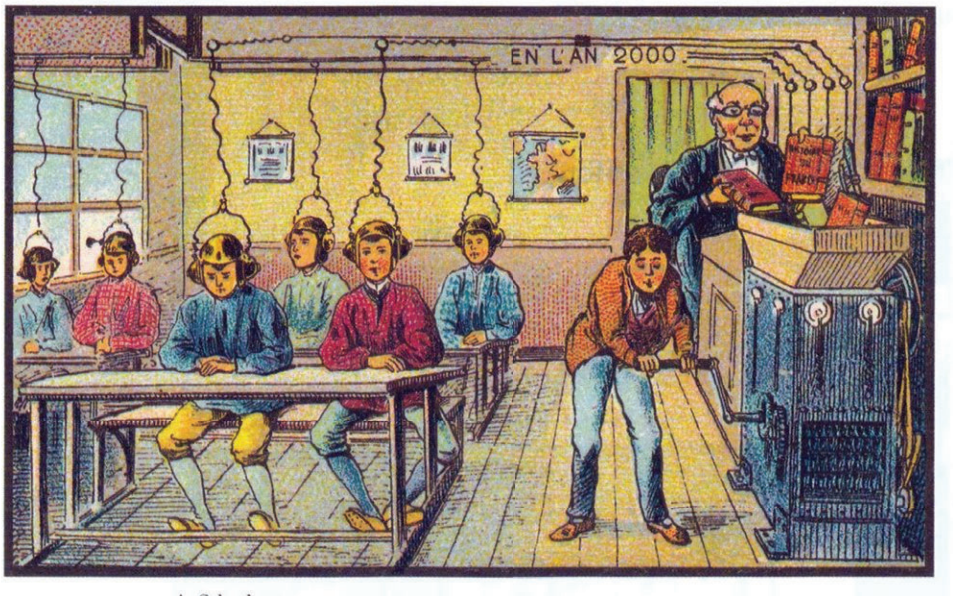
08 Create Vigorous Interactions

FOR AN ONLINE COURSE, it is never enough to simply publish content and tests online. While information alone holds value, true learning thrives on interaction and connection. This chapter takes you beyond the static realm of online publications and into the dynamic world of meaningful online communities. Here, we'll explore the transformative power of interaction, examining how it fuels deeper understanding, fosters engagement, and builds lasting connections. You'll gain insights into the "why" and "how" of online interaction, equipping you to craft thoughtful experiences that cultivate vibrant communities and propel learners towards their full potential.

From Transaction to Interaction

At the turn of the last century, Jean-Marc Côté and other French artists drew postcards to represent their visions of the year 2000 (A 19th-Century vision of the year 2000. (n.d.). Among these fantastic postcards, one depicts the "school of the future" in 2000. As you can see from Figure 8.1, the artist imagined a learning machine with a funnel at the top. Apparently, it is a machine to pass on learning. A wise-looking man is feeding books into the funnel. A young man is cranking the machine, churning books into transmittable knowledge. On the other end of this knowledge transmission mechanism, you see students sitting straight, their heads connected by cables to the knowledge transmitting machine. You may ridicule this vision, but the painting forecasts online teaching poorly done. If we substitute a learning management system for the learning machine, don't we have a picture of teachers who are just trying to transmit knowledge from books to students' brains in the most efficient way? What is missing from the picture?

FIGURE 8.1
Vision of a Future School



Source: A 19th-Century vision of the year 2000 (n.d.)

Online learning should not just transfer knowledge from one brain to another using technology. Learning is a social activity that goes beyond transferring knowledge. Social interactions must be part of the picture. Social activities can enlarge people's perspectives and create a more complex worldview (Vygotsky, 1978). In addition, learning happens when learners interact with each other and follow others' examples (Bandura, 1976).

The quality of online courses can be evaluated from the perspective of interactions and communities. In 2017, the Office of Inspector General (OIG) of the United States Department of Education released an audit report asking Western Governors University (WGU) to return over $713 million in federal financial aid because there had been a lack of meaningful interaction between teachers and students (Office of Inspector General, 2017). According to the report,

> ...for each of the 102 courses required to complete the school's 3 largest programs, we reviewed course design materials for evidence that each course was designed to offer regular and **substantive interaction between**

> **students and instructors**, the key requirement to be considered in a course offered through distance education. We concluded that at least 69 of the 102 courses were not designed to offer regular and substantive interaction with an instructor and, therefore, did not meet the regulatory definition of distance education. Instead, these 69 courses met the Title IV definition of a correspondence course.
>
> *(Office of Inspector General, 2017, pp. 2–3)*

Traditional correspondence courses teach through asynchronous written communication between teachers and students, usually using copy machines and the postal system. Such courses certainly do not mirror the rich interactions in face-to-face classes (Simonson et al., 2003). These days, when one refers to an online course as a correspondence course, it carries a negative connotation, reducing such a course to an inferior form of education as shown in the report by the Office of Inspector General.

Types of Interactions

In an online course, there are roughly four types of interactions: 1) interaction between students and the content, 2) interaction between teachers and students, 3) interaction among students, and 4) interaction between schools and families. Traditional courses have the same elements occurring naturally. These interactions should be thoughtfully designed and facilitated in an online setting.

STUDENT-CONTENT INTERACTION

The first type of student-content interaction is students receiving information. However, if we stop there, we do not have interaction. There should be activities for students to process the content. For instance, where there is reading, are there ways to quiz students over the reading? Can students provide feedback about the content or critique the content? Can students relate content from the course to the larger context of the profession or society? These are all interactions between students and the content. Student-content interaction is influenced by the design and release of the content and the optimization of the user interface. Here I would offer some suggestions.

Online courses should have a clear welcome page. After students click on the link to enter their course, they should be taken to a page to welcome them to the course. On this page, you tell them how to navigate the course and post a welcome message in text, audio, or video. Then you use links or icons to guide students where they should be going. Such guides should be simple and intuitive. Students should not have to think too hard about what to do next (Figure 8.2).

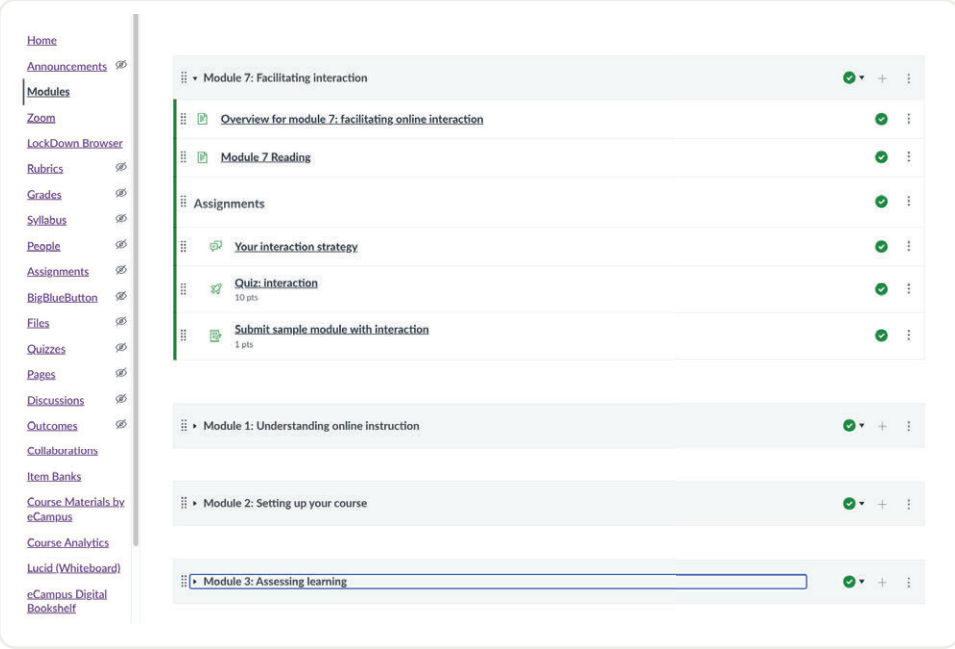
FIGURE 8.2
Map of navigation

Online courses should have a map for navigation. As students wander in the course environment, there should be signs to show them where they are and where to go next. Notably, there should be a mechanism for students to return to the main page,

the previous page, or the next page. Sometimes learning management systems are like complex underground caves. Once you are in there, you can explore further and further, but without clearly marked signs, it is difficult to return to the starting point. When the course starts, inform students how the navigation works. For pages with subpages, include a link to return to the main page.

Keep current content at the top. To make browsing easier, it is best to put the most recent content at the top of the page instead of letting it sink to the bottom as content adds up in the semester. As the semester goes on, the course modules will show in reverse order as the most recent content rises to the top. Additionally, some teachers publish the content module by module, instead of showing everything all at once, which may be overwhelming for the faint of heart. However, if you want to give students the flexibility to work at their own pace, release all content at once so that they can work through all the material. Another option would be to set up prerequisites so that the next module is revealed only after a student has completed an earlier one.

FIGURE 8.3.
The Module Design of a Course



Use modules for content and activities. Put related content and activities in close proximity, in the same module, instead of having students look everywhere for them. I personally prefer the use of modules to types of content as the organizing method. Some professors put all their PowerPoint in the same folder, all the Word documents in a folder, all the discussions in a folder, and all the assessments in a folder. When students need them, they have to go through different folders to find what they need. It is much better to arrange the various materials by content modules and sequence them so that it is easy to follow. As you can see from Figure 8.3, the current module consists of pages, a discussion, a quiz, and an assignment. When they are grouped together in the same module, students can just follow the pages or activities as you have arranged them. Module 7 is the current module being taught. Therefore, it floats to the top so that it is easier for students to work in it.

STUDENT-TEACHER INTERACTION

In the teaching process, teachers should not just focus on transferring their knowledge to students' minds. They should interact with their students. They also need to be alert to the state of learning in the class and communicate strategically with the entire class, groups, or individuals. Teachers can use many tools to interact with students. For instance, they can interact with the whole class using announcements, discussions, synchronous sessions, and group feedback with text, audio, or video. Teachers can also communicate with specific groups, including project groups or students who run into special difficulties. To communicate with groups, you can use the same tools mentioned above, except that you release your communication to specific groups. To interact with individual students, you can use messages, chat, or virtual meetings.

Teachers sometimes mention that they spend too much time interacting with students, which increases their workload and causes burnout. I would recommend that at the beginning of your course, you set up a Frequently Asked Questions (FAQ) list. Keep it updated throughout the semester so that you can answer most questions once and not have to repeat your answers.

Another method is to have an open discussion board, which you can call an online cafe or online lounge. In this discussion board area, students can post questions. You can also encourage students with the answers to help you answer questions, while you reserve the right to correct or improve their answers. This method reduces the need to answer similar questions repeatedly. You then have time to answer specific individual questions that are not covered by generic situations.

Be careful about interacting with students on social media. Some K12 schools forbid teachers from friending students on Facebook so that they will not have a conflict of interest. With many social media tools, the boundaries between personal lives, jobs, hobbies, and political interests are blurred. Individual students and teachers have their own circles governed by different social norms. Sometimes people may post comments you may feel uncomfortable with. If your school or district does not have any social media policies, you could set up your own policy in the syllabus by telling students what your expectations are if they send you friend requests. If you tell students early on that you do not accept friend requests from them, you may save yourself a lot of time and resentment. However, some teachers can navigate the treacherous waters of social media and are able to get to know students on social media without jeopardizing their teacher-student relationship.

STUDENT-STUDENT INTERACTION

The most common interaction between students is a non-synchronous discussion board, also called a discussion forum. Its greatest strength is that it gives students the flexibility of time in response. Students do not have to think on their feet producing slapdash responses. They can be more deliberate in their responses. They can even do research and collect data to support what they say. Introverted students may be more confident in online discussions. I have heard from teachers more than once that some students, especially international students, are very timid in face-to-face classes. They are afraid of making language mistakes, so they remain silent in class. If the teacher uses online discussions first, these students may become more active.

Interaction between students can include synchronous chat or video conferences for the entire class or specific groups of students. Students can also form social media groups where they can talk in a more relaxed setting.

Interaction between students includes group interaction. Teachers can set some assignments as group assignments for students to work on in teams. Students then use their own methods to communicate and complete the assignments, including physically or virtually meeting each other. Teachers may show them some tools with which they can do so, including setting up Zoom meetings in case students need a pro account that only the teacher has.

SCHOOL-FAMILY INTERACTION

There are various ways students' families interact with students' schools. Here I focus on describing the interaction between teachers and parents. This kind of interaction is informed by the teacher's understanding of the parent-child relationship and the teacher's understanding of the students. In some impoverished families, parents may work several jobs and do not have sufficient time to spend with their children. At another extreme, helicopter or bulldozer parents are involved to a fault. For reasons of equity, teachers should not ask too much from parents in terms of a student's day-to-day study activities, because this would unfairly link student performance to parent ability to provide resources. Socioeconomic status is already a key factor for student performance. Teachers should not exacerbate the situation by involving parents deeply in student assignments. This is one of the few areas in which teachers do have the ability to level the playing field. Some families may not be equipped to help students other than providing moral and logistical support.

Here are some methods for a healthier school-family relationship:

- Some parents may have the time or resources to be actively involved in their children's school. Use apps like Remind to inform parents. See also if your school's student management system can create alerts for parents for them to know if a student's score goes below a certain level. Parents can then check with students to see what is going on and what can be done to remediate the situation.

- Form a network of parents so that they can support your class as a whole, not just their own children. There is not much that teachers can do if parents form groups on social media to pass on information. However, teachers could advise parents to beware of toxic peer pressure that might exist in such groups. If the vibe becomes vile, offer professional advice to set parent expectations right.

Sometimes home situations can create difficulties for students. Teachers can use professional and ethical discretion and decide if some assistance can be offered. In online courses, teachers can show that they care about a student's individual struggles and provide help within the teachers' ability or provide resources students may not be aware of. In most cases, students appreciate such consideration and care.

Create Vigorous Discussions

Online discussions may bring to mind the idea of a requirement for one post plus two substantive responses. That kind of mandated requirement does not necessarily lead to a productive dialogue, but it does create social media memes. Check out these memes about college discussion boards:

Example 1:

Emily: The sky is blue.

Me: Emily I totally agree with what you said. I like how you use the color blue as a form of imagery to describe the sky. It was such a powerful statement you said Emily.

Example 2:

Student: I love bread

Me: Joe, I agree with you! I love bread too. I like the part when you said you loved the bread. Great point!

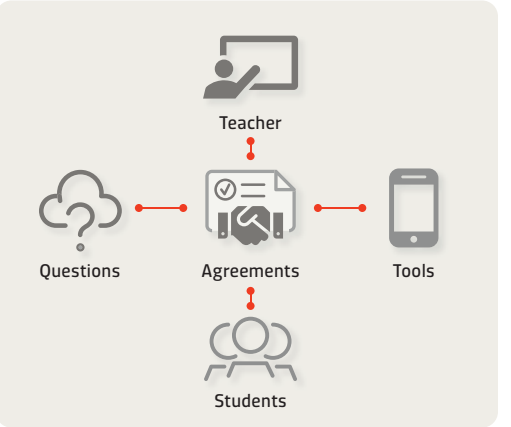
Example 3:

Jim: 2+2 =4

Me: Wow Jim I totally agree. I like how you added the 2's together and got 4, very insightful.

FIGURE 8.4

Anatomy of a Discussion



Such discussions often meet only the teacher's minimal requirements. You probably have a prompt that says: "Please post one original post and two responses to others before the due date." When students discover that you are using a bean-counting approach to discussion posts, they may just play the game without gaining understanding. Now, with the use of ChatGPT and other AI tools, producing perfunctory responses can never be easier. You really should design your discussion for vibrant community participation. To improve the quality of discussions, you will need to consider the following five elements of an online discussion: teachers, students, agreements, questions, and tools (Figure 8.4).

TEACHER

In online discussions, teachers play a role not only in teaching, but also in hosting, facilitating, and guiding the dialogue. Teachers need to consider whether they should participate in the discussion. Sometimes when the teachers are not speaking in a discussion, students may participate more actively. Teachers can use Socratic questions to elicit student opinions, questions, and thinking. For example:

- "That's a great point, but how does that apply to the content in the module?"
- "I tend to agree, but do you have an example?"
- "Do you have evidence to support your conclusion?"
- "Sounds reasonable, but others claim that... How would you address this concern?"
- "If... what do you think might have happened?"

If the discussion goes out of control, you may want to intervene. Some seemingly irrelevant threads could add spice to an otherwise dull discussion. Sometimes, a little diversion can be helpful. It can provide a fun break. Teachers do not always have to pull a stern face and censor irrelevant talk every time somebody seems to be digressing. If you control the dialogue, you sometimes kill the atmosphere in which lively discussions can happen.

QUESTIONS

When your questions are poorly designed, you do not get great answers. For discussions, do not ask questions related simply to knowledge and comprehension. For

example, do not ask students when a dynasty started or how to define a particular concept. You are better off quizzing students about factual questions. It is usually not a good strategy to use the discussion format for a question that has a clearly correct answer. Questions that involve applications of concepts or have a rich array of perspectives have a higher potential to promote critical thinking. Ask questions that do not have clear black-or-white answers or questions that require some investigation or research for quality answers.

You could also design questions that aim at solving real-world problems that demand an answer. You might wonder: If professionals and experts cannot solve the problem, what do you expect from students? Students may not produce viable solutions, but they can use the discussions to try to apply their learning and grow as involved citizens. Besides, young people have great creativity that may provide inspiration for the rest of society. Why not give them a real problem and see what they can say or do about it?

Discussion games

When designing your discussion questions, you may want to use some of the following techniques:

Surprise! Surprise! *Present students with a conclusion that seems to contradict what they have learned so far. Ask them to find sources to verify the conclusion.*

Current events: *Post a video or link to a news report of a current event that is closely linked to the content you are teaching at the time.*

Pros and cons*: Present a question for which there is no clear consensus. Ask students to talk about the pros or cons related to this question.*

Jury duty: *Divide students into groups of 12 and have them reach a consensus about a verdict on an issue you present to them. Give them time to research, reflect, and debate till they reach a consensus.*

STUDENTS

In a discussion, all students do not participate in the same way. They do not fall simply into the categories of active students and inactive students. There are more behavioral patterns. I like to use the popular animal signs for student behavior

patterns. You probably know that the Chinese assign twelve animals to represent ages. Each year is associated with an animal sign, and each person born in a particular year is assigned the animal sign that corresponds to the animal for the year. Associating animal signs with learner types is by no means scientific, but, like Myers-Briggs personality types, it is a method that can be applied to the complexity of human behaviors.

Student types

Using the animal signs, we can identify various ways in which students engage in a discussion:

The Critic (Mice): *The mouse likes to find "holes." These are the students who are good at finding faults or loopholes in an argument.*

The Responsible (Oxen): *The ox is tolerant and humble. In group project discussions, some students feel responsible for the entire group and take on an extra burden if others are not doing their fair share.*

The Assertive (Tigers): *The tiger is an intimidator. In a discussion, you may see some students showing unnecessarily aggressive behavior with the result that others feel threatened by them, or uncomfortable with their bullying stances.*

The Elusive Experts (Dragons): *In the Chinese zodiac, dragons fly, visible only occasionally. Most of the time they remain fanciful animals in the popular imagination. In discussions, you probably also have some students whom everyone praises, but you rarely see them participate.*

The Quiet Observers (Snakes). *Snakes hide and lurk. students who quietly stay in the discussion, observing others and not saying anything.*

The Fast Thinkers (Horses): *The horse is known for its speed. The horses in the discussion are those whose thoughts run fast. They do not pause to elaborate on concepts that might have confused others.*

The Enthusiastic Participants (Monkeys). *The monkey is lively and active. These students are super active in their participation in discussions and even comment on every one of their classmates' posts.*

The Predictable Contributors (Roosters). *The rooster crows at specific times in the morning. In discussions, while some students are unpredictable in their timing, others display amazing regularity in the way they participate. For instance, for a discussion kept open for a week, the "rooster" among the participants will post on specific days, such as Monday mornings or Saturdays.*

The Literal Followers (Dogs): *Dogs are known for obeying orders. In a discussion you will see some students following your prompts very strictly, taking them as orders, not guidelines. If you do not provide clear instructions, they may feel anxious.*

The Jumpers (Rabbits): *Rabbits hop around. In discussions, some students hop from one topic to another with no particular pattern. It is the opposite of the "dog" type.*

The Newcomers (Sheep)*: Sheep are gentle and obedient. Such participants are novices or beginners in the field who may benefit from your encouragement.*

The Underestimated Minds (Pigs)*: Animal scientists claim that pigs are quite intelligent, though they may not look smart. In discussions, you will see some "deceptively simple" participants whose complexity may hide behind a facade of simplicity.*

Student strategies

Of course, these 12 types cannot cover all students, and they have nothing to do with the participant's actual animal sign, if such things matter. I hope it can be a good way to represent the diversity students may display in their online discussion behavior. Once you have developed a nuanced understanding of their behavior, it is possible to use targeted strategies to elicit optimal performance. For instance, for the "rabbit" type who tends to hop from topic to topic, you may ask them to elaborate on a particularly relevant point. For the "snake" type, the lurkers, call them by name, or tag them if the function is available, to ask for their input: "So-and-so, what do you think?" For the ox-type of students doing most of the work, encourage them to delegate to let the entire team participate. For the "rooster" type that may post only on Monday, missing comments by other students who only post on Friday, you may want to require students to spread out their responses on different days of the week, or even make this a requirement worth points in your grading.

These types may also be evident in a synchronous discussion. It is sometimes difficult to keep the conversation going while also watching for student behaviors and finding resources to share. In such situations, you may find it necessary to enlist the help of a teaching assistant or student volunteer to monitor the chat room as you teach or facilitate the discussion.

AGREEMENTS

You cannot enforce what you haven't agreed upon. Trying to discipline student behaviors without informing students ahead of time what you expect can be a challenging and unproductive endeavor, sometimes resulting in resentment.

General agreements

When you design your discussions, think of the following questions:

1. Will students be graded for participation in the discussions? If so, how?
2. When will the discussion be open and when will it be closed? (Remember to set the available and due dates for your discussions. Available dates determine the time when they can post. Due date communicates the deadline. A student can still post past the due date, if the discussion is still open, but will be marked as late.)
3. Is it mandatory to respond to others? If so, how?
4. Do you have a time requirement for the responses? Do you expect students to spread out their responses?
5. What are the quality standards for their discussions? What are the expectations for their writing? Do they need to cite sources? (It is fine to require this, but do not turn your discussions into a mini paper.)

You do not have to cram all the rules into instructions. Dates and grades, for instance, can simply be set in your assignment in the learning management system so that they are easy to find. Some rules can be translated into a rubric, with which you grade. Students can read the rubric and understand how you grade. Your rubric can include criteria specific to the discussion you have set up, while also including generic requirements such as writing and citation of sources. If you have multiple discussions in your course, you should communicate your rules and expectations early on, in the course orientation, to reach a common understanding instead of repeating them multiple times in the instructions. Alternatively, use the same rubric for all the discussions.

Netiquette

Sometimes your agreements with students are more than just rules. They are social norms to promote a healthy, supportive, and productive community. Consider "netiquette." When the Internet was still young, Virginia Shea wrote a book called Netiquette talking about ten rules, which are still very relevant. Briefly, these are the rules in the book:

1. Remember the human.
2. Adhere to the same standards of behavior online that you follow in real life.
3. Know where you are in cyberspace.
4. Respect other people's time and bandwidth.
5. Make yourself look good online.
6. Share expert knowledge.
7. Help keep flame wars under control.
8. Respect other people's privacy.
9. Don't abuse your power.
10. Be forgiving of other people's mistakes.

(SHEA, 1994)

Don't these same rules apply when we engage in online behaviors now that social media use is so prevalent? By teaching students proper etiquette in your course interactions, you are also helping them in the future as netizens.

Zoom Rules

You might also find it necessary to have some netiquette for your synchronous classes. Here are some additional Zoom expectations, which you can use in conjunction with the netiquette rules from Shea (1994).

1. Be punctual to class meetings.
2. Dress properly.
3. Mute yourself when you are not talking.
4. Share screen only when you are asked to.
5. Use chat if you want to share resources.
6. Turn on your camera, or at least when you are speaking.
7. If you get disconnected, use the same link to rejoin.

8. Class meetings will be recorded and shared in the course. Let me know if you are concerned in any way with the arrangement.
9. Be respectful when you participate in discussions.
10. When you have to leave early, explain in chat.

TOOL

Finally, let us talk about the use of discussion tools. The discussion tool is usually a non-simultaneous online discussion board (forum), or it may be a Wiki page or blog that everyone can edit. Of course, virtual interaction tools are also popular.

The functions of the different tools are slightly different, so teachers should learn to use them well. There are many technical considerations in the use of online discussion areas. For example:

- At the beginning of your course, explain what tools will be used for discussions and interaction, how to get there, and how to exit, if it is not obvious.
- Decide where to place the discussion in the course. I suggest you keep them close to the content they have studied.
- Decide when to open and close discussions. You can set up an automatic time for opening and closing.
- Decide whether you want to have a threaded discussion, or do you just want students to post a response to your prompt.
- Decide if you want students to see others' posts before posting their own. With some learning management systems, you might be able to enable the function to post before responding so that students each will contribute their own ideas first without copying from others or being led to "groupthink."
- Decide whether to use a rubric.
- Decide whether to assign a grade.
- If you expect lengthy posts, encourage students to draft their responses in Google Docs or a Word Processor with automatic saving enabled so that they do not lose their work.
- Decide whether you want to use anonymous posts. It is very rare to have anonymous discussions. If students are talking about sensitive information, you might use this format. If you want students to send feedback to you only, you do not have to use discussions. Use a survey tool instead.

Of course, there are interactive tools besides online discussions. Each of them may have its own functions and features that bring in a new set of concerns as well as advantages. If you want students to use a Wiki page for interaction, be careful that you know the implications of collaborative work. In a content page used as a Wiki page, sometimes the platform only records the last student's changes if they are working at the same time. For Google Docs, multiple people can work simultaneously. There is a chance of wrongful deletion that you should be aware of. Even if historical versions are available, it is difficult to sift through all the changes if multiple students contributed to a collaborative page. In this case, you could ask students to color-code their input or add their names next to their input for a communal draft. If you are using external tools such as VoiceThread (https://voicethread.com/) or Flipgrid (https://flipgrid.com/) for media-rich discussions, show students how to access and use them. Provide tutorials, which might be available from the resources pages of the vendor.

Other tools for interaction include group assignments, project assignments, and blogs. With these tools, you still need to think about the formation of prompts or questions, the technological aspects of the tools, student behaviors, rules, expectations, and netiquette, and your role in the facilitation process. If you have thought about each of these aspects, you have the potential to create engaging interactions to enrich learning while forming a vibrant community.

TASK 8.1 Develop Your Interaction Strategy

Please use the worksheet below to plan your interaction strategies.

TABLE 8.1

Strategies for Interaction

Interaction Types	Strategies I will use
Student-content interaction	
Student-teacher interaction	
Student-student interaction	
School-family interaction	

TASK 8.2 Create A Sample Discussion

Continue to build up your sample module by creating your sample interaction. Incorporate the ideas about tools, your role, questions, student behaviors, and the agreement. Here is a checklist of items to consider:

- A prompt with thought-provoking questions
- Available dates
- Due dates, if different from the available dates. If using weekly modules, what would be the due date for original posts and the due date for responding?
- Grades and information about grading
- Rubric
- Format of a post, i.e., text, audio, or video
- Link to a page about etiquette

References

Bandura, A. (1976). *Social Learning Theory* (1st edition). Prentice-Hall.

Office of Inspector General. (2017). *Western Governors University was not eligible to participate in the Title IV programs: Final audit report* (Audit Report ED-OIG/A05M0009; p. 93). US Department of Education. https://www2.ed.gov/about/offices/list/oig/auditreports/fy2017/a05m0009.pdf

Public Domain Review. (n.d.). *A 19th-Century vision of the year 2000*. The Public Domain Review. Retrieved Jan 2, 2024, from https://publicdomainreview.org/collection/a-19th-century-vision-of-the-year-2000

Shea, V. (1994). *Netiquette* (Ed. 1.0). Albion Books.

Simonson, M. R., Smaldino, S., & Albright, M. (2003). *Teaching and learning at a distance: Foundations of distance education* (2nd ed). Merrill/Prentice Hall.

Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.; Revised edition). Harvard University Press.

09 Supporting Students

IN COURSE DESIGN AND FACILITATION, teachers can get caught up in teaching the content and forget where the students are in the learning process. Retention issues loom large for online courses, especially for courses with large enrollments. To help students succeed in online learning, teachers need to consider ways to make the course supportive, motivating, and inclusive. In this chapter, I will discuss a few key aspects of student support in an online course.

Access, Equity, and Accommodation

Since their inception, online classes have lifted the restrictions on time and place and have increased the access to quality education for many people. Developing countries place high hopes on online teaching for its ability to connect students in impoverished areas with scarce resources to developed areas where resources are plentiful.

When an entire program shifts to online delivery, students have to go home to study, without the benefit of the computers, projectors, screens, and smartboards that schools own. This sudden change of learning modality can catch families off guard. Equality of access became an issue because some impoverished families did not have computers, or several children share the same device.

Teachers usually cannot fix differences in socioeconomic status. The access issue requires a whole-society response. There is much work that governments, businesses, and nonprofits can do to help students learn online.

Besides devices and Wi-Fi, students may encounter other barriers that limit their success in online learning. Some of these problems may not be restricted to online teaching. For instance, students may have learning or other disabilities that call for special accommodations. Some students may be facing special circumstances that interfere with their ability to successfully complete a course. For instance, if a teacher holds office hours only at ten o'clock in the morning, students who work full time may not be able to take advantage of that opportunity to get help. I will discuss some online teaching strategies that teachers can immediately practice to address some of these issues.

Support for Basic Course Needs

How does the teacher provide support to address concerns related to access, equity, and accommodation? I will discuss special accommodations in a later chapter. For now, here are a few suggestions for dealing with course technology, access, and other logistics.

SHARE REQUIREMENTS

In the course introduction or syllabus distributed before class, students should be informed of the basic technical requirements of the course and suggestions for support resources. Some communities may have facilities like a public library that has computers or Internet access students can use to participate in courses, especially if the students are only taking one course at a time. If students are taking more than one course at a time, even if the courses are asynchronous mostly, it helps if they have their own devices.

Teachers should strike a good balance between their own teaching and student needs. If teachers overthink a specific student's difficulty, they may fail to make the best use of their technical expertise and resources, and it would not be fair to other students in the class who could benefit from better technologies. See if it is possible to provide special accommodation for individual students without affecting the rest of the class. Find out if your school or district provides resources to individual students. In some cases, students who are not able to meet the basic requirements for access to technology may need to be switched to a different section of the class where there is less of an access issue.

SURVEY STUDENTS

One week before the class, send a technical background survey to the online class. You might include questions such as the following:

- Do you have any of the following equipment for accessing online courses? (List options such as computers, tablets, smartphones, or none of the above).

- What kind of Internet service do you have? (List options such as using mobile phone data, using broadband, broadband plus mobile phone data, or no fixed Internet access.)
- Where do you study online? (List options such as at home, outdoors, at a school facility, public library, and other places.)
- If I meet online using (time zone) time for office hours, what time are you most available? (List a few time slots you have)

The results of the survey should not be made available to the entire class, so as not to embarrass students from poor families with limited access. If it is found that all students in the class have what it takes to study online, that's great. You can use technologies to your satisfaction.

BALANCE SYNCHRONIC AND ASYNCHRONOUS TEACHING

Another issue that you will find is that students may not have the flexibility in time to take online courses if you depend exclusively on virtual meetings for your course. This is especially true when you teach students from different time zones. Consider making a major part of your course asynchronous so that students can access such content on their own time. Record virtual class meetings for them to watch later if they cannot participate in synchronous meetings.

MAKE CONTENT EASILY AVAILABLE

Unless there is a copyright concern, make audio and video downloadable so that students can download them where they have better connections and then listen or watch later. You may have started to do this for students with special accommodations, but providing easier access also reflects the spirit of universal design that ultimately benefits other students as well.

If you have media files for students to download, consider also providing alternative forms of presentations such as transcripts or closed captions.

For reading materials, reduce printing needs so that families with no printers can still access them, but make the download option available so that families who have printers can print them if they choose to. If you have lots of reading materials, convert some or all of them into audio files as well so that students can switch

between reading and listening to avoid overexposure to screens. In other words, give options rather than providing only one method of access that may turn out to be restrictive or prohibitive for some students.

Because many students use phones to access materials, you need to have a mobile-compatible method for access. Web pages are usually easy to read on small screens as the width can self-adjust. PDF files may be more difficult to read on small screens compared to HTML pages that self-adjust. If you have many PDF files, teach students to convert them to a more mobile-friendly format. For instance, they can send them to a Kindle app that can convert PDF files to a mobile-friendly format.

SUPPORT THE USE OF TECHNOLOGY

When using technology, try to find the common denominator, namely using a format that can be accessed by the greatest number of students. Use technology that performs reliably, equivalently, and consistently on a variety of browsers, devices, and operating systems. If the technology works only on a specific operating system while students use a mixture of systems, try to identify a substitute that is platform-neutral.

You may also teach students to use certain technologies for learning online. Do not think that students have technology all figured out. The Z generation is an interesting one. They may be skilled users of Instagram, TikTok, and Snapchat, but I find that many of them do not know how to scan a document into PDF to submit to their professor. You may know of technology, such as CamScanner (https://www.camscanner.com/), that they can easily use for scanning. They may not know how to use Zotero to organize their research resources. They may not know how to download a Lockdown Browser to use for secure testing. They may not know how to turn a presentation into a video. Recommend popular and reliable tools that they can use to work on their assignments. Provide tutorials to them. This is also a way to increase their computer literacy, which will come in handy in other classes and in the future.

If your school has technology support teams, direct students to them for technical assistance, rather than trying to be their Helpdesk yourself. Do not be overconfident thinking that you can function as a Helpdesk just because you are tech-savvy. It sometimes takes time to troubleshoot a problem due to the complexity of the technology ecology out there, with students using different operating systems, browsers, devices, and apps. And then add Wi-Fi in the mix! Besides, why would you spend most of your time working with technical problems when you could be helping them

with their learning? Include a page in your course showing students where to get help with technology.

Support Students at Different Stages of Learning

At different stages of online learning, students need different types of support and strategies. Professor Gilly Salmon (2020) has a five-stage model, showing each stage as consisting of e-moderating and technical support that subtly shift over time. Her stages include:

TABLE 9.1

Salmon's Five-Stage Model

Stages	E-moderating activities	Technical support activities
Stage 1: Access and motivation	Setting up the system and accessing	Welcoming and encouraging
Stage 2: Online socialization	Sending and receiving messages	Familiarizing and providing bridges between cultural, social, and learning environments
Stage 3: Information Exchange	Searching, personalizing software	Tutoring and supporting the use of learning materials
Stage 4: Knowledge Construction	Conferencing	Facilitating process
Stage 5: Development	Providing links outside closed conferences	Supporting, Responding

SALMON, 2020

This is a valuable model providing guiding principles for the design of learning, especially for learning that is based largely on the virtual conferences. For online courses with a more asynchronous focus, I find Boettcher and Conradin's stages helpful. Their book describes a course as going through four phases (Boettcher & Conrad, 2010):

- Phase 1 Course beginnings: Starting off on the right foot
- Phase 2 Early middle: Keeping the ball rolling
- Phase 3 Late middle: Letting go of the power
- Phase 4 Closing weeks: Pruning, reflecting, and wrapping up

Once again, I find that their stages capture the realities of course facilitation. I would encourage you to take these stages into consideration as you design your own course.

In my own experience supporting faculty, I often find that the support process falls into three stages shaped somewhat like an hourglass. Teachers frequently ask for help at the beginning of the class to get things set up and then at the end of the semester when they are wrapping up their courses. I sometimes do not hear from them in the middle, which I take as good news, hoping that their courses are humming along. Other designer-teacher interactions work like a spinning top, thin on both ends and heavy in the middle. In this model, teachers do not ask for my support and advice at the beginning or ignore my advice and warning, often because they are so busy getting things going. Then all sorts of problems occur when the courses are well into the semester. I would much rather spread out my support throughout the semester, of course with different emphases at different points in the semester. Similarly, I would encourage teachers to think carefully about support at different stages of their teaching in a semester. Having considered the Five-Stage Model by Salmon (2020) and the Four-Phase Model of Boettcher and Conrad (2010), here are a few of my suggestions for ways to provide support to students at the start, middle, and end of a semester.

SUPPORT BEFORE THE SEMESTER

One week before the start of the course, send an email, letter, or postcard to inform students of the upcoming start of the course. Do not use the messaging system of your learning management system as they may not even know how to get there yet.

In this message, tell them where the online course platform is and how to find the specific course. Provide a link if available. Tell them where to find the course syllabus. Provide information about the textbook to use. Include an ISBN number or cover so that they get the right version. Notify them of activities to complete before class, if applicable. Most importantly, tell them when the course officially starts.

Make this message brief. Students usually are in the "drinking from the fire hydrant" mode when a semester starts. Provide links in the message to further information. You could also record a video for them. If there is information that is better shared in week 1, do not include it in this message.

SUPPORT AT THE START

At the start of your course, especially in week 1, guide students so that they can become familiar with the course environment, explain your instructional methods,

and then start to form a learning community. At the very beginning, most students have no clue and you do not necessarily need to proceed right to the discussion of the topic you are about to teach. Introduce activities to scaffold students towards learning. You may also need to provide orientation and onboarding activities to help students become familiar with the course logistics. These activities are essential to the success of a course. For your reference, I am also providing a detailed list of support activities at the start of the course.

- **Use a survey to learn about students' technical resources,** change the technology used in the course if necessary, or seek help for individual students with special difficulties that the rest of the class may not share.
- **Post your welcome message** early in the first week.
- **Go over the syllabus**, answer questions related to the syllabus, and quiz students over the syllabus if you prefer. Or bury an "easter egg" in the syllabus such as code to a Starbucks gift card to reward the first student who reads it. Present a complete picture of the course, and introduce the course objectives, assessment methods, teaching strategies, learning materials, time arrangements, school policies, and course-specific policies.
- **Share best practices of online learning**, including the requirements for students to learn independently.
- **Post resources for technical assistance,** including the contact method of the Helpdesk.
- **Ask students to introduce themselves.** You could use discussion boards, but the introductions in a discussion board can be pages and pages long. If you want to be able to quickly find a person's information, it is a good idea to ask students to complete their profiles in the learning management system, which you and others can quickly refer to throughout the semester.
- **Use a synchronous orientation session or recorded tutorials** to show students how to use the course platform and various tools.
- **Provide a space for answering questions**, so that students can ask questions and help each other with technical problems.
- **Check whether the student is logged in or online**, and individually contact users who have never logged in so that you can find out whether there are difficulties or problems that need to be resolved.

SUPPORT IN THE MIDDLE

Once the course gets successfully started, students need less technical support, but it becomes necessary to support their learning, growth, and the formation of a learning community. The purpose of this stage is to motivate students to continue learning, to implement the teaching plan, and to maintain a sense of community while minimizing the interference of technical problems. This stage is the main body of teaching, with content presentation, processing, assessment, and community formation occurring. The following are some suggestions to help you guide students at this stage:

- **Release teaching content**, including reading materials, presentation, and external sources that support learning.
- **Give assignments and grade them promptly**. Pay attention to the timing of the release of grades and feedback. It is best to publish all the grades at once after you have finished grading all the students, rather than publishing grades one by one. When some students receive their results and some do not, you create unnecessary anxiety for the students.
- **Administer tests** to ensure that students have mastered the content.
- **Check participation.** Check whether students log in irregularly, or are simply inactive, and send notices and reminders accordingly.
- **Promote interactions among students** through discussion and group work,
- **Post announcements and summaries regularly** to guide students through learning. Post an announcement once a week to show your involvement in class.
- **Mentor or tutor frustrated students**, help solve their specific problems, or find resources.
- **Praise students for their work.**

SUPPORT AT THE END

At the end of the course, students work very hard for their grades. They often feel stressed and anxious. They have various assignments that are due at the end of the semester, and some students cannot complete them on time. The purpose of this

stage is to support students so that they can complete the learning tasks, to evaluate their performance, and to allow students to reflect on the successes and failures of the course, thus providing you with ideas to improve the course. Here is a list of ways to support your students at the end of the course:

- **Guide students to complete the coursework.**
- **Conduct summative assessments** to understand the results of students' learning.
- **Adjust grades as needed.** During the final calculation of the grade, decide whether to delete one or two low scores or to allow students to retake the exam. Finally, summarize and report the results.
- **Administer course evaluations** to gather ideas for future improvement.
- **Make arrangements as needed for students to take "incomplete" for the semester.** Download their existing grade and adjust your course end dates to allow them to continue to work in the next semester.
- **Copy your course for offering in the next semester.** Adjust your design while your memory of the problem is still fresh.

Motivate Students in Online Learning

It is easy for an online course to become lackluster if you do not intentionally and frequently motivate students. If this is not a required course, they may lose interest and give up halfway. Motivating students is vital for online classes. Well, actually for all courses, online, blended, or face-to-face.

Motivating students does not mean you have to turn yourself into a standup comedian unless you have a natural aptitude for such a role. Being engaged is not the same as being entertained. Learner motivation has a lot to do with the psychology of learning. Many theories are out there about learner motivation. John Keller's ARCS (acronym for attention, relevance, confidence, and satisfaction) model is easily applicable and memorable (Keller, 1987). I will share the basic principles and a few ideas for applying them in online teaching.

ATTENTION

Your course should attract and maintain student attention.

- Simplify the course page and make it appealing visually.
- Reduce distractions to highlight the content you want students to pay attention to.
- Release content gradually, not all at once, to reduce attention overload.
- Shorten the video time.
- Embed videos into the page and try not to use external links that will tempt students to leave the course environment.
- Start a module with relevant stories, quotes, current news, or videos to attract students' attention.
- Keep the course content fresh and interesting.

RELEVANCE

Your course should include materials and activities that are meaningful and relevant to the personal, professional, and social interests of your students.

- Relate learning content and activities to students' personal backgrounds. Learn about students' hometowns, hobbies, and concerns to link back to your teaching for personal relevance.
- Incorporate current social issues.
- Design authentic tasks instead of artificial learning problems.
- Associate content with professional needs, such as combining learning objectives and assessments with professional accreditation.

CONFIDENCE

Students will learn the content when they are confident, they can learn it. On the other hand, they should not be overconfident and underestimate the challenge because they think they already know the material.

- The design of learning content and activities should proceed from easy to difficult.
- Set up branched learning activities to guide students at different levels in differentiated paths to mastery.
- Send notes of encouragement to students who display signs of frustration. Provide examples from past classes if appropriate.
- Provide additional learning resources, including tutoring services provided by the school or district.
- Use low-stake quizzes to expose possible blind spots and weaknesses in understanding for overconfident students.
- Send out a quick mid-semester survey to assess student progress, their difficulties, and ways to improve the rest of your own course. Do not mix it with the university-required course evaluations. This should be an informal survey. Ideally, you keep it open-ended and ask only no more than three open-ended questions. For instance: How are you doing so far in this course? What are some of the muddy points? What can I do better to support you?

SATISFACTION

Your course should provide feedback to students so that they feel satisfied with their progress or accomplishments.

- After completing certain units of learning, you should summarize them and praise students for their progress.
- Let students review their own learning progress.
- Send messages to encourage students who have consistently performed well.
- Reward students by offering "benefits" for completing certain tasks or obtaining specific grades. Such benefits might include exemption from the final exam, the option to drop a low score, or getting extra points.

Enhance Course Presence

To improve students' perseverance in learning, teachers need to maintain their presence in the course. It is easy to automate an online course: You build the content, lay it out in modules, set the release time, and sit back while students proceed through the course in an "autopilot" way. It seems you could even go to Hawaii or Cancun while the course is teaching itself to students. Right? No. As teachers, you know that learning is a very messy process that cannot easily be automated. Students have questions to ask. You must watch for their problems in understanding. Check who is active and deserves praise, who is struggling and needs help, and who is simply inactive and needs to be brought back to the learning process.

Avoid the Helicopter Teacher Syndrome

In this chapter, I have discussed different ways to support students. However, I would like to take a step back here and warn readers of another extreme, namely the helicopter professor syndrome, a term I used in a *Faculty Focus* article that has gathered some interest among professors (Fang, 2015). A helicopter professor hovers above students, provides excessive guidance, and rescues students at the slightest hint of a problem. Examples include:

- making themselves available all the time, instead of setting clear office hours,
- constantly reminding students what is due and when,
- helping students troubleshoot common technical errors when students should be doing so themselves,
- sending the same instructions to every student every time someone asks for it,
- using multiple methods, including extra credit, till everyone is happy with their grades, and
- providing overly detailed, step-by-step instructions for tasks students should be able to accomplish on their own.

Guiding students when there is a difficulty helps bridge the gap between students who have "got it" and those who have not, but the helicopter teacher shows that they do not trust students to have the necessary self-regulation and agency to succeed in

their learning. Hovering over students does not lead to good pedagogical practices outcomes.

Learning can be deeply satisfying, but nobody says it is always easy. Some difficulties, such as the lack of prerequisite skills, the use of specialized technologies students do not have, and poor course design, should be avoided, but other difficulties are desirable and necessary for learning to happen. If students have to think hard to grasp a concept or procedure, that may be a desirable difficulty because processing the concept or procedure leads to deeper understanding.

With helicopter teachers, students are not allowed to develop certain characteristics that mark a self-directed learner. Excessively supporting students can deprive them of the journey of discovery. For instance, students may never develop the time management skills needed to meet academic and personal goals, the grit necessary to struggle with challenging topics, and the resourcefulness required to find answers from various sources. Instead, students become reliant on teachers to guide them toward answers. The thrill of discovery is lost when teachers come to their rescue too early and too often. Part of the joy of learning is in the discovery process, sometimes with a group, and sometimes alone.

To help you avoid becoming a helicopter teacher, I would give the following suggestions:

1. Support students in their efforts to succeed, but not to the point of dependency and helplessness. If you forget everything else listed below, keep reminding yourself of this decision. As a teacher, you are not only teaching them content, but you are also helping them to grow into responsible and resourceful graduates who will take ownership of their own learning.
2. Avoid busy work for yourself. As you teach your online course, reflect on your own practices daily. If the class is becoming increasingly dependent on your guidance at every step of the way, even for mundane tasks such as submitting an assignment before a deadline, limit yourself to providing the necessary resources and encouraging students to make use of them. Sometimes students' real needs are autonomy and room for creativity.
3. Communicate clearly what you expect students to do in the first few classes. Make it obvious what roles students will play in a course, and what responsibilities they will need to have. By mapping out student responsibilities, faculty can navigate the exciting (yet delicate) dance between mentorship and overstepping.

4. Use course analytics to differentiate between students who are truly struggling and students who are mostly slacking. Most learning management systems include statistics that can tell professors quite a bit about student behavior.
5. Allow some "chaos" and let students know that "figuring it out" is part of the learning process. Communicate to students that learning how to learn in your discipline is part of the course expectation. Setting out the expectation explicitly will help students a lot.
6. Embrace "desirable difficulty." Do not step in too quickly to help the moment a student starts to complain. Reflect first whether the task is indeed prohibitively difficult, in which case you need to add some prerequisite training. If it is simply at the desirable difficulty level, communicate that to students and expect them to persist in seeking answers.
7. Increase accountability. There are things students have to learn to do. For instance, if a certain technology is heavily used in your course, students should learn to use it. Students should also be able to complete some simple tasks such as clearing the cache of their browsers and installing necessary apps. If they do not know how, perhaps Google knows or the tech support department.
8. Reduce redundancy. Do NOT repeat an instruction twenty times in a course. Doing so creates work for yourself and creates clutter and distraction for students. You can post certain instructions (how to participate in discussions, for instance) once, quiz them if needed, and be done with it. Do not repeat the instructions every time students are supposed to participate in a discussion.
9. Gradually remove crutches. Teachers should help students learn the process of finishing a complex project, but gradually relieve students from excessive guidance so that students can learn to navigate the project on their own.
10. Mix "pull" and "push." There is certain information you want to "push" to students, but it is also legitimate to expect them to "pull" other information. Have space where they can find the information they need, rather than staying alongside them and giving them the answer every time they ask for it.

TASK 9.1 Plan for Motivation

Continue to work with your sample module. Review what you have so far in terms of content, media, interaction, and assessment. Using the following worksheet, think about strategies to increase motivation for learners in this module.

TABLE 9.2

ARC Model Application

ARCS Elements	How would you apply the element in this module?
Attention	
Relevance	
Confidence	
Satisfaction	

TASK 9.2 Develop an Accountability Sheet

For this course that you are developing, how do you plan to support your students while developing their own self-regulation? Use the following worksheet to write a "roles and responsibilities" statement to include in your course. I have included some sample items you can use or change.

TABLE 9.3

Accountability Sheet

	As your teacher, I	As students, you
Will	**1.** Take responsibility for my teaching **2.** Provide detailed and timely feedback **3.** Answer your emails/text within ( ) hours **4.** Help shape a learning community **5.** Use office hours to answer individual questions **6.** Adjust course design if it has issues	**1.** Take responsibility for my learning **2.** Check teacher feedback for continued improvement **3.** Be courteous and considerate when communicating with the teacher and fellow students **4.** Use proper netiquette and contribute to a healthy and vibrant learner community **5.** Ask questions if I feel confused **6.** Do my basic homework before I ask for help.

Will not	**1.** Function as your Helpdesk **2.** Negotiate grades except for special circumstances stated in the syllabus **3.** Repeat information that I have provided in the syllabus and the "question and answer" or FAQ sections of the course.	**1.** Treat teacher as technical Helpdesk **2.** Make unreasonable demands to change grades **3.** Ask teachers for information that is already contained in the course

References

Boettcher, J. V., & Conrad, R.-M. (2010). *The online teaching survival guide: Simple and practical pedagogical tips*. Jossey-Bass.

Fang, B. (2015, June 8). How to avoid being a helicopter professor. *Faculty Focus | Higher Ed Teaching & Learning*. https://www.facultyfocus.com/articles/faculty-development/how-to-avoid-being-a-helicopter-professor/

Garrison, R., Cleveland-Innes, M., & Vaughan, N. (n.d.). *The community of inquiry model*. Retrieved January 2, 2021, from https://coi.athabascau.ca/

Keller, J. (1987). Development and use of the ARCS model of instructional design. *Journal of Instructional Development*, *10*(3), 2–10.

Rourke, L., Garrison, R., Anderson, T., & Archer, W. (2000). Assessing teaching presence in a computer conference environment. *University of Calgary*.

Rourke, Liam, Anderson, T., Garrison, D. R., & Archer, W. (2001). Assessing social presence in asynchronous text-based computer conferencing. *The Journal of Distance Education/Revue de l'ducation Distance*, *14*(2), 50–71.

Salmon, G. (2020). *Five Stage Model*. Gilly Salmon. https://www.gillysalmon.com/five-stage-model.html

10 Make Your Course Accessible

Specific disabilities can create barriers to completing courses, necessitating accommodations to ensure an equal learning environment. This chapter will discuss how to make your course content and design more accessible while also planning for special accommodations.

Why Accommodation?

Laws such as Section 504 of the Rehabilitation Act of 1973, the *Americans with Disabilities Act (ADA)* of 1990, and the *ADAAA* of 2008, require that educational institutions provide equal access for students with disabilities. Schools, especially colleges and universities, set up offices to ensure their institutions comply with these laws. Most teachers do not have specialized training in these laws and may find it complex to meet the requirements independently. Usually, schools encourage teachers to refer to ADA compliance offices or officers for assistance. However, it behooves a teacher to know what kind of services are available and what accommodations are within reason for students to request.

Disabilities include impairment in a person's mobility, vision, hearing, and speaking. The most relevant ones for online teaching are the latter three. However, ADA offices of a school find themselves dealing with an increasing array of other conditions that include but are not limited to: Attention Deficit Hyperactivity Disorder (ADHD), dyslexia, dysgraphia, and dyscalculia as well as psychiatric disabilities such as stress, panic, and fear.

While academic accommodations are crucial for students with diverse needs, their availability and approach vary greatly across cultures. In developing countries, socioeconomic factors often take center stage when addressing educational accessibility. This often contrasts with the United States, where systems may offer more accommodations for specific needs, like attending mainstream schools alongside peers without special needs. Some countries might rely heavily on specialized schools, potentially limiting inclusivity. Furthermore, cultural perceptions of conditions like anxiety and stress differ significantly. What might be considered a special need condition in one country may be deemed a normal issue elsewhere. Culturally diverse students may be unaware of available support, potentially impacting their academic and emotional well-being.

Accessible and assistive technologies keep evolving, usually rendering access easier. Schools may purchase specialized accessible technologies. For instance, JAWS (https://www.freedomscientific.com/products/software/jaws/) can read the screen to visually challenged students. Microsoft has developed the Immersive Reader tool

that makes it easy to access a page in various fonts, colors, translated languages, and audio format.

Accessible tools already exist for many types of computers and devices. You can enable the assistive touch, voiceover, zooming, magnifying, audio description, switch control, motion control, and voice control features on a smartphone or tablet. I have a friend who is a blind student in music. She is fully comfortable using her iPad with these features for various music and communication needs. Smart assistants like Apple's Siri and Amazon's Alexa are also tools for accessibility, especially for students who have a visual impairment.

Technology vendors have to make their products accessible to stay competitive in the marketplace. When schools select technologies, they should pay attention to their accessibility standards. A product that is not highly accessible will create significant difficulties for your online programs. Where such standards are missing, you will have to amend them. That could require substantial money, labor, or both.

Universal Design

As time goes by, schools are finding that accommodation goes beyond providing access and resources for students with disabilities. The idea of universal design is gaining attention and traction. The principle behind it is that properly designed facilities should accommodate special needs while helping the general public have easy access as well. In online teaching, you are making your course accessible not to jump through legal hoops but to serve all students well.

Ronald Mace at North Carolina State University and his team developed seven universal design principles, which you might want to consider when designing your course. These principles are the following:

> Principle 1: Equitable use
> Principle 2: Flexibility in use
> Principle 3: Simple and intuitive use
> Principle 4: Perceptible information
> Principle 5: Tolerance for error
> Principle 6: Low Physical effort
> Principle 7: Size and space for approach and use
>
> (National Disability Authority, n.d.)

I would encourage you to visit the National Disability Authority's Centre for Excellence in Universal Design (http://universaldesign.ie/about-us/) to learn more about each of these seven principles and to see how you can apply them in your course design. I have sought to use some of these principles in the discussions about content, assessment, and interaction design. For instance, making multiple formats of content is a way to increase equitable use for students of varied needs. Course navigation should be obvious, intuitive, and straightforward. Tolerance for error is also a great principle in course design: When students are in the wrong place, they should not face difficulties in getting back to their starting point. Your course home page ought to provide an easy structure for accessing different items in the course. Students can use self-evident links, icons, or other types of breadcrumb trails to go from place to place.

With universal design in mind, we should aspire to rethink modalities of delivery for content and activities. The Covid pandemic has provided a moment of truth for many teachers in terms of guaranteeing universal access. Some teachers started by making special accommodations for an exam for one particular student who had to stay home in quarantine. They converted paper-based exams to online exams for the first time in their lives. When planning to send the exam to the printer for the other students, they paused: "Wait a second! Can't I use this format for everybody? Why would I require students to buy expensive Scantron sheets from the bookstore when the computer can auto-grade them? And students get the results immediately! Besides, paper surfaces may spread viruses!" Following the same trajectory, teachers adapted to Zoom sessions for classes and office hours. Suddenly, you may have found that you were designing content and activities for universal access when you started by simply finding ways to accommodate one or more specific students.

Ally With Your ADA Office

Even though similar laws govern schools in terms of accessibility and accommodation, schools' requirements and resources differ. Eventually, they develop different cultures, with some using ADA as a strict set of rules to follow, while others use compliance as a process to shape an inclusive and hospital learning environment.

Check with your school's ADA compliance office to learn about their procedures, policies, and resources. At times, there may be a conflict between providing accommodation and ensuring rigor. Use the ADA office as a mediator between you and your special needs students. Your ADA office can diagnose students' special needs and provide you with an official confirmation of whether someone has

special accommodation needs. If your school's ADA office does not confirm the special accommodation status of a student, you are not obligated to provide the special accommodation that a student requests.

Like other units on your campus, a school's ADA office may not be everything for everybody. They serve as a hub that can link students with special needs to school or community resources. For students needing special accommodation because of medical conditions, the ADA office may refer students to medical centers for assistance. For students with anxiety or stress disorders, your ADA office may refer them to school counselors. For test accommodations, your ADA office may ask you to work with an instructional designer. Making a course easily accessible involves many departments on campus. With an ADA office as the main coordinator, these departments work together to provide the conditions for students with special needs to succeed. Providing the appropriate accommodations in your courses can become part of a school's total strategy for student retention. Students with special needs who do not get accommodation have a higher chance of dropping out or transferring to other schools.

ADA offices not only function in a gatekeeper role, deciding who gets accommodation and who does not, but they also help make these accommodations possible. For instance, if you are administering an exam using a secure browser, you may have special needs students who cannot get their screen reading application to work in that secure environment. Check if your ADA office can administer or proctor the exam. If you have difficulty producing media formats to accommodate special needs, check if they can assist you.

You might also proactively work with ADA offices by sharing your accessibility concerns before releasing the course. You could brainstorm strategies for universal design. Sometimes, you can ask the ADA office to complete a course audit for you to highlight the areas that require adjustment. Towards the end of this chapter, you will have a task that requires you to do exactly that.

Finally, at the start of your course and in your syllabus, inform students of their rights regarding ADA compliance and accommodation policies. Include contact information for the ADA office, or a link to their web site.

Create Accessible Content

Even though teachers may not be professionals about ADA compliance, they benefit students by making their courses highly accessible. The University of Arkansas has a comprehensive web site where you can check the accessibility content I would

highly recommend (Designing an Accessible Online Course at https://exploreaccess.org/accessible-online-course/).

Here are a few suggestions to use as you build or facilitate your online courses. They are by no means exhaustive but represent the most frequently used accommodations teachers provide in online courses.

Making your reading accessible

If you are designing a web page, make sure your hyperlinks and texts are straightforward. You may need to provide multiple formats for some documents. If you copy text from a Word file to a web page in your course, remember that your copied text may carry hidden codes from Word that could cause problems for access. Go to the HTML mode to paste your text to strip the additional code. Or you can copy text into a pure text editor first and then copy from there. Your learning management system may also provide tools for you to clean the format. Once the format becomes clean, use the content editor of the learning management system to reformat the document by adding headings, numbers, bullet points, and other formatting options. A page is usually more accessible if you have built it with the editing functions native to the learning management system.

If you are designing a document to attach to your course, use good contrast between headings and text. Avoid using colors that might create difficulty for students who are color blind. Avoid decorative components, such as gif and clip art files. Try not to put text in boxes that may shift in location and become unreadable for students with disabilities. They could also become eyesores for others. If you want to use a text box, choose to use a table instead and hold the visual elements in place on a page. If you find one type of document, such as a Word file, difficult for such visual display, check if an alternative format, such as a PDF file is a better option.

If you assign textbooks, there might be time for you to provide audiobook options for students. Check with your ADA office to see what resources they can procure for such situations. They may know applications and alternative versions that you have never heard about.

Create alternative text representations

If you have an image on a page, provide an "alternative text representation," briefly describing what this image is about so that students using a screen reader can still

figure out what the image is about when their finger touches it on a touchscreen device or when their cursor moves over it. Many learning management systems now require that you add alternative text representation when inserting an image. Do not skip this step. Otherwise, you will find it a big headache to come back, adding alternative text representations when a student needs it. Do it right the first time. Provide sufficient information for a visually impaired student to figure out the image by listening to the alternative text description. If you are not sure whether your description is sufficient, seek advice from your ADA office. Or turn on the screen-reader feature of your device, if available, close your eyes, and listen to the page yourself.

Create transcripts or captions

For an audio segment, the alternative representation is usually a transcript. For video, the alternative is usually closed captioning. Professional websites such as Rev (www.rev.com) can help you transcribe audio or video into text for a fee. Currently, it is $1.25 per minute. I have had success using Temi (www.temi.com), which offers transcription using artificial intelligence, at $0.25 per minute. It does the heavy-lifting work of transcription, which you will have to proofread and correct.

It is also possible to use YouTube's automatic transcription tool to generate a draft, which you can edit into a finished closed caption or transcript file. Check also if your school's audio or video platform provides automatic transcription service. Instructure's Studio, for instance, provides automatic transcription that is fairly accurate. If none of this is available to you, you could start a Google Doc and have your audio play while using the Voice Typing tool of Google Doc to transcribe for you.

Alternatively, you can turn a text into audio so that students can listen to some reading materials wherever they are and at any time. You can use "Natural Reader" (https://www.naturalreaders.com/online/) to quickly create an audio file. Or you can record yourself reading the text into an audio file, which may sound more natural.

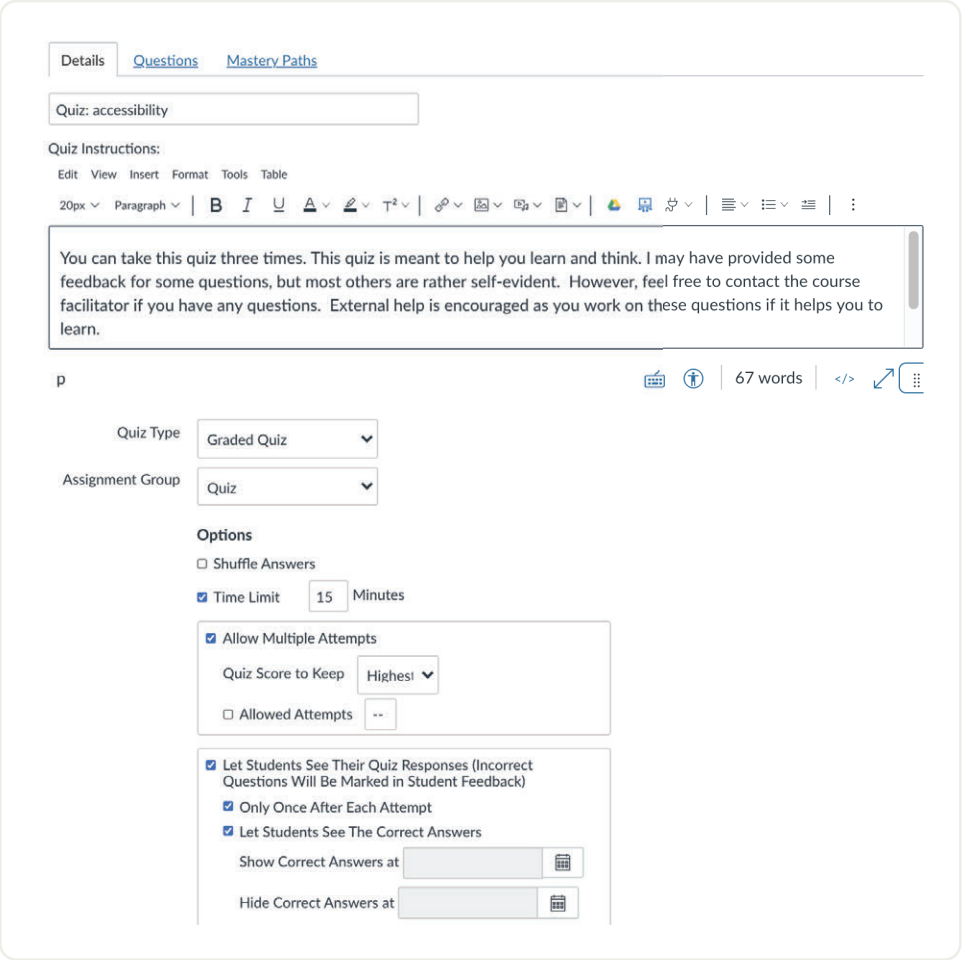
Accommodate Exams

Besides content for students to read or watch, your course may include various learning activities and assessments, for which you should also consider accessibility. Some of the activities may differ from those in traditional face-to-face courses. For traditional courses, you may provide preferential seating for students needing

special accommodations or make arrangements for notetaking. For online courses, most accommodations have to do with exams.

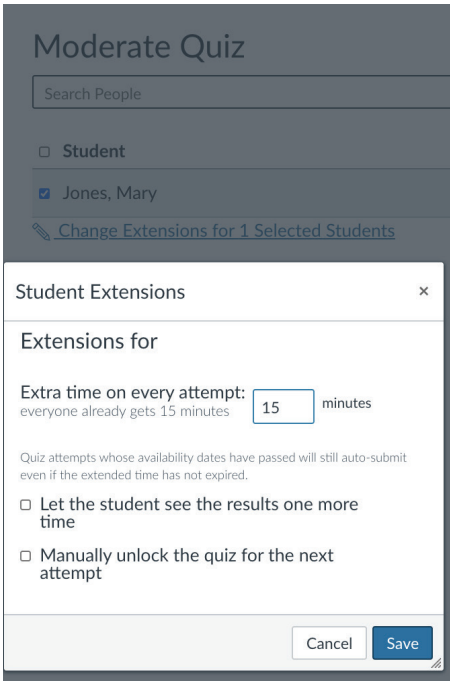
To make exams accommodating, here are a few things you can do or change. Usually, you make changes to the time a student needs to complete an exam. This would involve changes to the clock time and available time students may need.

FIGURE 10.1
Clock time



Clock time: In Figure 10.1, students have to complete the exam in 15 minutes. If you want to increase that time for special needs students, do not change 15 to 30 here. Instead, see if the learning management system allows you to adjust the time for one student only, giving him or her extra time without affecting other students (Figure 10.2)

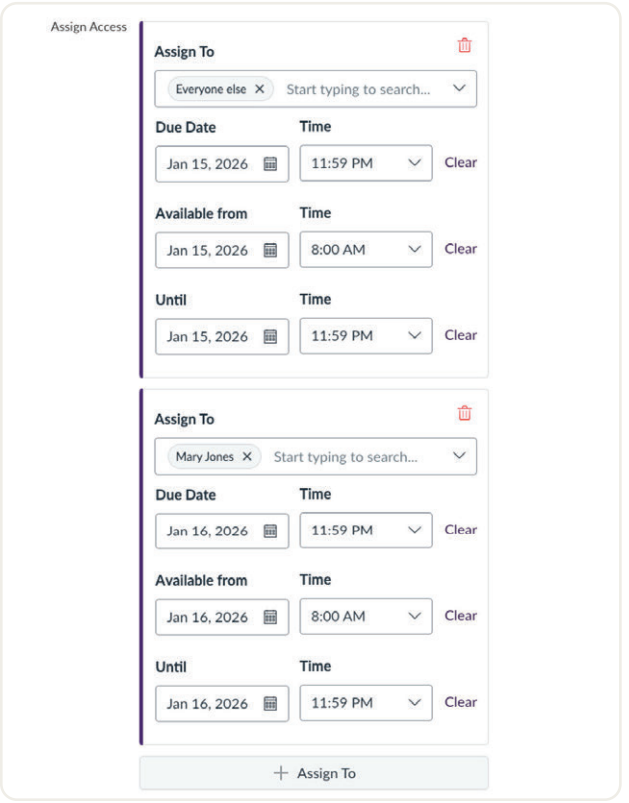
FIGURE 10.2
Adjust time



Due time: Due time refers to the exam deadline, or soft deadline, for instance, Jan 15 at 11:59 PM US Central Time (Figure 10.3). Instead of using 12:00, I would recommend you use 11:59 am or 11:59 pm, as 12 am or 12 pm can be misunderstood very easily. If you mean midnight, some students may think you refer to noon. It can cause a lot of unnecessary confusion, anxiety, and clarification on your part. If your learning management system does not indicate morning or afternoon with "am" or "pm," use a 24-hour format. It is also essential to show the time zone you use if your class has students from other time zones.

Setting the due time to be different from the available time can confuse students and you too. Typically, keep the due date and the "available until" time the same. However, there might be a time when they can differ. For instance, a student fails to make the deadline, and you still want them to complete the exam. You can extend the available time without changing the due time. It will allow the student to finish the exam, but their submissions will be marked as late, and the student may be subject to a late penalty.

FIGURE 10.3
Due and available time



Available time: Available time refers to the window of time for students to take the exam. It usually has a start time and an end time. Depending on the system you use, the start time may also be called "available from" time or "start" time. The end time could be called "available until" time or "cutoff time." It is the "hard deadline" as compared to the "due time," which I have referred to as "the soft deadline" earlier.

Figure 10.2 shows that the exam is due for most students ("everyone else") on Jan 15, 11:59 PM US Central Time, and available to them from Jan 15 at 8:00 AM to Jan 15, 11:59 PM. For Mary Jones, a special needs student, it is due on Jan 16 at 11:59 PM, and it is available from Jan 16 at 8:00 AM to Jan 16 at 11:59 PM. Once the "available until" or "cutoff" time comes, the exam will close. You do not want students to start the exam only 10 minutes before the cutoff time, because that will prevent students from using the full 15 minutes they have.

Other accommodation situations for a test may include giving a student an extra attempt, which is tricky. If you make this exception for specific students, they may

have an undue advantage in the exam as they have taken it once already. Use this for rare situations only, including failure to submit due to technical interruptions students are not responsible for, or having invalid questions because of teacher error.

You should also be careful with the implications of listing restrictions for students. For instance, you may require a secure testing application for other students but lift that for one student or several of them. You may need to set a different time for special needs students, as shown in Figure 10.3, during which you can disable the secure testing application. You need to remember that some students will have taken the exam before the special needs students. There could be a cheating risk. To minimize the risk, randomize questions from a pool so that the two groups get different questions in different orders. Another way to increase security is not to show the correct answers and test results until everyone has completed the exam.

Other Situations Requiring Accommodation

Here are some additional situations for accommodation that may warrant your attention. Such accommodations may not be required by law, but if you consider these situations, you may create a more welcoming and inclusive environment for your students.

Content alternatives

Sometimes, your course may include content that may upset students or conflict with their beliefs. For instance, if you teach evolution to students in a biology class in a faith-based university, or you teach intelligent creation to a public-school class, you might want to anticipate possible reactions. Prepare to justify your choice of the material when you are challenged. Ideally, you review the materials with your academic department ahead of time. You also might want to add a warning section in your course syllabus. If there is no way for students to accept the material, think of ways to make special arrangements for students who would prefer to read or watch alternative materials to meet the same learning outcomes.

Assignment arrangements

In the chapter on assessment, I include the idea of free-range assessments that could be used in case a student cannot fulfill the requirement of a particular type. Alternatively, you can roll back the free-range assignment scale by allowing only students with special needs to submit alternative forms of representation of their learning.

Error tolerance

Another common situation that needs special attention is how much error you can tolerate from students. For instance, if you have a fill-in-the-blank type of question, students may have very different ways to spell certain answers. International students who do not use English as a native language may make more grammatical mistakes. How tolerant will you be without being seen as unfair? There are many ways to think of the issue. You want to be sympathetic, to give students a break, but only to a point. You still need to uphold high standards for students, and you should encourage them to do the best possible work. International students can use writing centers or at the very least tools like spelling and grammar check of their word processor or use Grammarly or Turnitin's grammar and writing feature to self-check before the submission.

This chapter dives into the multifaceted world of accessibility in online courses, emphasizing its legal requirements, pedagogical benefits, and the creation of an inclusive learning environment. It highlights the importance of accessible content, including clear instructions, transcripts for multimedia, and alternative formats for assignments. Collaboration with the school's ADA compliance authority is encouraged to ensure adherence to legal guidelines and best practices. Beyond legal mandates, the chapter advocates for universal design principles, emphasizing the creation of online courses that benefit all learners, regardless of ability. Practical tips are provided, such as using descriptive alt text for images, offering captioning for videos, and employing clear and concise language. By following these guidelines, you can create online courses that not only fulfill legal requirements but also foster a truly inclusive learning experience for everyone.

Next, please complete the following tasks for this chapter.

TASK 10.1 Accessibility Audit

Make an appointment with your ADA office or officer to perform an accessibility audit of your current course content. Go over everything thoroughly for possible issues. Use the following worksheet as you work with your colleague. If you do not have someone to reach out to for this audit, you can also do it on your own.

Checklist	Notes for Changes
Students with needs Go over your course enrollment and find out if there are students in your class who are already on file to receive special accommodations.	
Section in the syllabus In your syllabus, did you include information on ADA compliance and how students can seek help?	
Resources Add a link in your syllabus or course to the ADA office's web site or resources about special accommodations.	
Trigger warning Check if your course has materials that may present special challenges for certain students.	
Course navigation Check if your course is easy to navigate for someone with special needs and adjust as needed. You may need to work through the issues with the instructional designer at your school.	
Pages Go through your pages for issues that might cause accessibility issues, especially regarding font, headings, contrast, color, and embedded images.	
Media For media materials, check with your ADA office how you can make alternatives available.	
Exams Check how you can change your exam time, including clock time and available time, for one or several students without affecting others.	
Assignments Check if special arrangements are necessary for special needs students.	

TASK 10.2 Create Alternative Representations

Find an existing video you produced, produce a new one if you do not have any, upload it to YouTube or your school's video platform with a transcription feature, and then add closed captioning for the video. Since adding closed captioning can be time-consuming, make sure you work on a video that you will use, for instance, an introduction about yourself you might use in your course.

References

National Disability Authority. (n.d.). *The 7 Principles*. Retrieved January 7, 2021, from http://universaldesign.ie/what-is-universal-design/the-7-principles/

University of Arkansas – Partners for Inclusive Communities. (n.d.). Designing an Accessible Online Course. *Explore Access*. Retrieved January 7, 2021, from https://exploreaccess.org/accessible-online-course/

11 Putting it All Together

CONGRATULATIONS, you are getting very close! By this time, if you have completed all the tasks, you should have the following for a course:

- ☐ A course space/shell in your learning management system (Task 1.1)
- ☐ A resource inventory for people and departments that can help you (Task 1.2)
- ☐ A Zoom or other virtual conference account (Task 2.1)
- ☐ Links to meetings for your virtual classes (Task 2.2)
- ☐ A course structure/map (Task 3.1)
- ☐ Placeholder for modules (Task 3.2)
- ☐ An assessment strategy (Task 4.1)
- ☐ Assessment for a sample module (Task 4.2)
- ☐ An anti-cheating strategy (Task 5.1)
- ☐ A plan for secure testing (Task 5.2)
- ☐ A content strategy (Task 6.1)
- ☐ Overview for a sample module (Task 6.2)
- ☐ Sample instructional media (Task 7.1)
- ☐ A welcome video (Task 7.2)
- ☐ An interaction strategy (Task 8.1)
- ☐ Discussions for a sample module (Task 8.2)
- ☐ A plan for student motivation (Tasks 9.1)
- ☐ An accountability sheet (Task 9.2)
- ☐ Accessibility audit
- ☐ Alternative representations for graphics, audio, and video in your sample module

Make sure you have all these pieces ready as you develop your course. If not, go back to the original tasks in the corresponding chapters. You may want to work with an instructional designer to complete some of these tasks or find out where the needed resources are.

Common Course Design Errors

There are many factors that can break a course. Consider such posts that I gathered from a social media group in which I once participated:

- "The reading this week doesn't correspond with the assignment. I had to do outside research and educate myself. The textbook is unhelpful."
- "Does anyone else feel like we were just thrown into these assignments? I'm looking ahead to Week 4 and we literally have instructions with NO examples. Even the required resource is just a few chapters from the... book. I really dislike this class."
- "What's the deal with the multiple-choice quizzes for the assignment this week? It says it's optional but then the instructions indicate that the highest grade will be used."
- "Has anyone received a grade for the first paper? I don't want to start writing the next one without knowing how I did the first time around."

What are some of the common issues for courses? Here are a few that I have encountered in course design:

- **Inconsistency** in instructions as some of the complaints above have indicated.
- **Lack of clarity** in instructions for student activities.
- **Content dumping**, or simply piling up content in the course without any meaningful way to organize the content, leaving students to figure things out.
- **Cloning** of face-to-face content for online presentation without any reorganization.
- **Poor interface design** that makes it confusing to navigate a course.
- **Using the wrong tools for teaching**. For instance, some professors use assignments for everything, including using it to share reading materials, which confuses the students. When students see an assignment, they usually think there is something to submit, but you may not want them to submit anything for the readings.
- **Redundancy**. There are differing opinions on this issue. Some say that you cannot over communicate in a course, but it can be annoying for information or instructions to be repeated multiple times. Redundancy in information sends the message you do not trust students will read the information the first time you provide to them. If your course is truly user friendly, you should not have to repeat the information multiple times.

Starting to Teach Your Online Course

In this book, I focused on building your course. Let's say that you think your course is now ready to be taught. Here is a list of things you might want to do before your course starts:

1. **Attend training:** Your course learning management system may change from semester to semester. If there is a training session available, attend it. You may learn something new about the system.
2. **Access your learning management system:** Before the semester, access your learning management system to make sure you know where to find it.
3. **Cross-list your courses:** If you teach multiple sections that are nearly identical. Crosslist them in your learning management system to save work in the future.
4. **Create your live course:** You may have developed your online course in a course space without students. When the semester starts, you will need to request space for a live course. You then will need to import the content from your development course to the live one.
5. **Add your syllabus:** Add your most up-to-date course syllabus to your course. Remove older syllabi from the file system.
6. **Organize your course files:** At the start of the semester, check the file management system, create folders, and organize your files. Update or remove as needed. This way, you keep all your files organized for easier management.
7. **Add course assignments:** You can either add them all at once or add them as the semester goes along. If these assignments have due dates, they may also show in your calendar automatically.
8. **Check student enrollment:** Your school may have populated the course with students automatically. If not, you or your computing service will load the students into your course.
9. **Add teaching assistants:** If you have a teaching assistant, add him or her to your course from the very beginning.
10. **Customize your course navigation:** In your course navigation menu, avoid clutter by hiding things you do not need to show students. If your school has a template that defines how the navigation works, use that template to ensure a consistent student experience.
11. **Bring textbook materials into the course:** If you need to integrate digital materials from your publisher to the course, do so ahead of time to make sure it works. Provide instructions for students to access the course.

12. **Publish your course**. While you are working on your course, you keep it unpublished so that you can work on it. Once you are ready, release the course so that students can access it.

Maintain Your Online Course

Online course development is not a one-time effort. You will need to keep your course updated due to changes in textbook content, technology, personnel, and resources. If you have inherited your course from someone else, you will want to make the course your own. Generally, developing the course from scratch takes the most effort. The more you put into the development, the less you will have to update. Common updates include:

- **Links.** Make sure your links are all active. Check that all your videos are still available if you have linked to external ones.
- **Content**. Make sure your content is still up to date. Revise as needed.
- **Activities.** You may have tried an assessment, assignment, collaboration, or discussion that has not worked very well. Revise at the start of the semester.
- **Syllabus**. Many changes above will also trigger changes in your syllabus. I have rarely seen a syllabus that does not need any change. Update your syllabus every semester. You might want to put it in a cloud server so that you will always have the latest version.

Sometimes I find it easier to keep a master or template copy of the course without students in it. For changes that are hard to make in the live course, make it at least in the master copy as you teach the course. That way, you will keep the course fresh without having to devote a large chunk of time to revising it.

TASK 11.1 Review Your Course

Many online teaching standards exist to support schools in quality control. The best-known ones include the Quality Scorecard Suite developed by the Online Learning Consortium (OLC), and rubric standards for K12 and Higher Ed by Quality Matters (QM). The OLC Suite focuses on the process of course development, including project management and student support mechanisms. The QM rubrics examine the particulars of a course. A

survey of all the standards will show that the online teaching community has built quite a bit of consensus about the quality standards for great online courses.

The following worksheet is one that I have been using in evaluating online courses using standards that are common to the field. You might also want to find someone (a student, colleague, TA, instructional designer) to complete a review of your course for usability and efficiency of the design.

COURSE REVIEW FORM

Course Number and Title: _____

Course Designer: _____

Course Reviewer: _____

CRITERIA	Yes	No	Comments
Course Overview and Introduction			
Course includes orientation on how to proceed with the course.			
Course includes orientation about Canvas for students. (Including "Module 0" should suffice.)			
Course includes rules or guidance for online etiquette.			
Course include syllabus items required by university guidelines.			
Learning objective			
Course includes measurable, learner-oriented learning outcomes.			
Modules include objectives that are consistent with the overall course learning outcomes.			
Instructions are given to students on how to meet these learning objectives.			
Instructional strategies are aligned with the outcomes.			
Sufficient resources are provided to help students achieve their learning outcomes.			
Assessment			
Assessments are aligned with the learning objectives.			
Assessments are aligned with instructional strategies.			
Assessment includes both formative and summative assessments.			
Grading policy is communicated clearly.			
Assessment instruments are appropriate and effective.			
Students have multiple opportunities to demonstrate their learning.			

Instructional Materials			
Course provides clear instructions on how to use the instructional materials.			
The instructional materials are current.			
Course makes a clear distinction between required and optional materials.			
Instructional Strategies			
Course uses active learning strategies.			
Course balances synchronous and asynchronous teaching.			
Course has activities for students to process their learning.			
Learner Interaction			
Course articulates strategies for interaction.			
Course includes appropriate introductions of the instructor(s).			
Course has activities or space for student-teacher interaction.			
Course includes activities or space for student-to-student interaction.			
Course supports a learning community.			
Course technology			
Course technology supports the achievement of the learning outcomes.			
Course includes explanations about technical requirements.			
Guidance is provided for students to use technology effectively.			
Course navigation is clear and user-friendly.			
Course uses current technologies.			
Course includes links to applications, plug-ins, and viewers that students may need for taking the class.			
Learning support			
Course includes external resources that may be relevant or helpful.			
Course includes instructions (including links or contact information) about support students can get if they run into technical difficulties.			
Course includes links to university resources and policies that may be relevant.			
Course design shows a Christian spirit that takes various student needs into consideration.			
Accessibility			
Course design reflects principles for universal design.			
Course provides alternative representation for instructional media.			

Course provides policies about accommodation.			
Course provides guidance on obtaining accommodation.			

Comments:

TASK 11.2 Send a Welcome Letter to Students

Remember your students will need information on course access. Before your course begins, you might want to send out the information to students via regular email instead of the messaging system of the learning management system. Remember they may not know how to access the course yet. You could also send a postcard to your students before the course starts with the access information. Here is a message template that includes some key information students would like to know.

> Dear Students:
>
> Welcome to course (Course number and title). This is (your title and name), your teacher. I would like to share with you how to access your course. The course will be in the school's learning management system (name your LMS here, which can be accessed with this URL (URL). You will need your school email/ID to access it. If you have any difficulty, contact the Helpdesk at (contact information, including URL if they use a ticketing system).
>
> When you enter the course, you will see only the syllabus, which includes information about your textbooks. Please act soon to purchase your materials. The course modules will be released when the semester officially starts on (date).
>
> If you have any questions, please feel free to contact me at (contact information) or (name of TA), our class teaching assistant at (contact information) . I look forward to working with you this semester!
>
> Sincerely,
> Teacher name

12 Teach a HyFlex Course

I started this book talking about synchronous teaching, which can be a baby step towards teaching online courses. I then discussed ways to build a vigorous online course assuming that teachers do not meet face-to-face with students. As you shift your way of teaching, the lines between face-to-face, blended, and online courses become tangled, like weaving strings after four cats have played with them. Face-to-face classes are integrating more and more technology. Online students from the same city may hang out for a particular task, or just hang out.

Between purely face-to-face and online courses, there is a spectrum of options, some of which have become known as HyFlex courses. HyFlex is a portmanteau word combining hybrid and flexible. A HyFlex course may also be called a blended or split course. It differs from a flipped course in the unpredictability of circumstances surrounding its existence. You still have to plan your course, but you also plan to be able to change that plan at a moment's notice. Often a HyFlex course utilizes more than one modality of teaching, combining face-to-face and online delivery methods.

The HyFlex course is unique to America and relevant for other countries prioritizing personal needs over collective choices. In countries where centralized decision-making is the norm, schools had teachers shift to online learning during the pandemic or inclement weather. When the pandemic was under control, most moved back to face-to-face teaching, even though there might still be a few online courses. The HyFlex course was born in America because of multiple narratives and agendas that competed with each other. During Covid, politicians urged schools to open for fear of an economic recession, while concerned parents would rather keep their students studying at home. In the end, schools, districts, and state officials just threw their hands in the air: "You know what? Just do whatever." Voilà! We got HyFlex. That short-term practice, however, is having long-term implications.

In a HyFlex course, some of your students are with you face-to-face, and others are with you remotely via a virtual conferencing tool such as Zoom. This format was quickly adopted when individual students are not able to attend a class in person. More and more schools have been inspired to try HyFlex to suit new needs. For instance, universities that cater to the needs of working students, some of whom can come to a physical class while others cannot. In this chapter, I will discuss format choices for a HyFlex class and strategies for teaching a HyFlex course.

Why HyFlex?

It is usually much more complex to teach a HyFlex class than to teach just online or just face-to-face classes. It may drain a teacher's energy to attend to the needs of both

groups of students. Some teachers may prefer to teach only online or only face-to-face. However, it is not always possible to choose only one modality. Excluding individual students due to their special circumstances may have negative implications for legal compliance, inclusive culture, school enrollment, and student retention.

A class can be split in modality for several reasons other than the pandemic. A sickness, such as a cold or flu, is the most common cause of remote attendance. Injuries affect the mobility of students and make it hard to come to the classroom. There are also times when students are on tour for a game, competition, or performance. With buses now equipped with Wi-fi connections, they can attend classes remotely while traveling.

Sometimes teachers cannot come to class for similar reasons: sickness, travel, conference, or a family emergency. They could teach a class away from the classroom while students are in the classroom or lab for easier access to local co-teachers, facilitators, lab assistants, fellow students, or course materials.

The HyFlex class might be used to accommodate the needs of a guest speaker. The teacher and students can be present in the classroom while the guest speaker is in a different location, connected to the class via a virtual meeting tool.

How Do You Do HyFlex?

I am often intrigued by the different ways people cut birthday or wedding cakes. Some cut across the cake to form wedges joined at the center. Others cut into one part of the cake and work from there to keep the rest of the cake intact. When you make the classes HyFlex, there are also numerous ways to split your class based on classroom configurations and challenges facing you or your students. Here are a few ways you or your school can configure a HyFlex class.

Remote teacher: In this modality, the teacher goes to the classroom to teach with no students physically present. In the classroom, the teacher can access equipment and materials like the blackboard. Students attend via virtual conferencing at their specific locations.

Dual teacher: In this modality, a remote teacher works with a local teacher or facilitator to jointly teach a course or session. The remote teacher may teach synchronously, interacting with students remotely with the help of a local teacher or facilitator. The remote teacher could also record the lectures in advance to be broadcast to a remote class while the local teacher plays the recording, choosing which part to play, pausing

to assess understanding, and adding additional instructions. The local teacher also facilitates interactive activities and discussions among students.

Mainly physical: In this modality, teachers teach in a classroom with most students physically present, while a few students attend via virtual conferencing due to sickness, travel, or other circumstances.

Mainly remote: In this modality, most students attend virtually, and a few students are physically present with the teacher. This scenario can occur during the summer or winter vacations when short courses are taught with some students coming from the towns nearby.

Equally split: In this modality, students are more or less equally divided in their physical and virtual presence.

Flipped split: This is a type of division that follows the principle of the flipped classroom when certain content is taught online either synchronously or asynchronously, while the rest of the course takes place at a physical location.

Alternate groups: Some teachers divide students into groups, the A group or B group so that one group attends classes physically and the other virtually. They alternate on different days or weeks. The rotation was necessary during the pandemic to ensure safe social distancing when the classroom space was limited. There might be other situations in the future when this is necessary. This method can be rather complicated to handle, but the professors I worked with said it worked as long as students knew the routine.

Lecture-lab split: In some situations, professors make their lectures virtual via recorded lectures or synchronous sessions while opening up lab spaces for students to work in a physical setting with the teacher or a lab assistant. This seems to be a very reasonable and effective way to teach. Of course, there are also virtual labs nowadays with specialized vendors selling or renting lab kits to students for them to complete labs in their own homes. In other scenarios, a district may have a lab for students to travel to when the time comes, and the rest of the teaching happens online. Schools may also have students go through all content online in a lab, while having a teacher or assistant available in the room for tutoring and assistance.

These are but a few everyday situations when a class might use both face-to-face and virtual modalities. There may be others similar to them. Teaching such

courses presents many challenges that purely face-to-face or online courses do not have to deal with, but HyFlex courses also create opportunities for schools and teachers to expand or retain enrollment and increase student access to resources previously inaccessible to them. As online teaching evolves, it will absorb some of these new modalities. The landscape of teaching and learning will be even more diverse as a result.

Improve the Effectiveness of HyFlex Classes

Here are a few themes that have emerged from the frontline of teaching.

Have a clear structure: Teachers I have worked with have been telling me that it is of utmost importance to have a predictable flow of activities in the learning management system for HyFlex classes. Many activities require good use of your learning management system. Use that as your general platform for both content sharing and activities management. To help you recognize which groups come to class and which ones are remote, divide students into sections or groups with clear face-to-face or remote attendance tags. The more you use your learning management system, the easier it gets to manage the two types of audiences. Do not use the system to dump content. Have a clear structure so that students can follow it whether they are in the classroom or participating virtually.

Hold certain elements constant. You cannot have everything in constantly shifting. Hold some instructional activities constant; use one modality if needed. For instance, everyone will use the assignment tool of your learning management system to submit assignments. Have all lectures in video format in the learning management system. Everyone takes the quiz online as well, whether they come to class for the lecture or not. Hold your office hours or tutoring sessions for all members of the class virtually to equalize access for students.

Rethink assessment. HyFlex classes pose challenges for quizzes and exams. When you are there in the classroom monitoring students taking exams, you serve as a proctor. That creates uneven test conditions when remote students are not subject to the same circumstance. It gets even trickier if you use paper tests for face-to-face students while online tests for remote students. I would suggest that, if possible, you level the playing field by having students take the exam under the same conditions. For instance, have everyone use online tests in a secure environment. If you proctor

students face-to-face, use proctoring software like Lockdown Monitor or a Zoom session to proctor remote students.

In HyFlex classes, it is also a good idea to rethink your assessment strategies as a whole. If high-stakes exams are problematic, perhaps you can use more low-stake quizzes and raise their weight in the final grade calculation. The bottom line is that students should have equitable test conditions, whether they are in the classroom or not.

Communicate consistently: As some students are face-to-face and others are online at various times of the semester, changes can be bewildering and confusing. It is better to use the same format to communicate. For instance, use announcements from your learning management system or email for important events and notifications.

Get your virtual platform ready. Choose a reliable platform or use the one that the school provides but designate a secondary one in case your first choice does not work. For instance, you may choose to use Zoom as a default platform but have a link to a Google Hangout meeting room if Zoom does not work. Encourage students to add virtual sessions to their calendars to know how to access them even when the learning management system is experiencing downtime.

Manage your devices: Always go to your classroom early to test your devices to make sure the audio and video systems work. When you ask students to bring devices to the classroom to connect to the virtual meeting, make sure you also ask them to bring earphones so that they can listen without producing echoing sounds for the entire class.

Consider using multiple devices. Virtual conference software such as Zoom sometimes has multiple windows that do not stay on the same screen when you are also using an overhead projector to display it. When you share your screen, you lose the window showing participants. It can be quite chaotic, causing anxiety for you and the students. I hope Zoom changes this, or other vendors will develop better tools that do not have so much shifting.

To make things more complicated, some teachers try to show something on their iPad or smartphones, which are easier for whiteboard activities. I have found that it is not a good idea to try to connect your mobile device to your computer and the projector via airplay or cable, which sometimes malfunctions. This makes things rather complex and unreliable. Instead, just join the same meeting with your mobile device using a dial-in mode to avoid sound interference. Share screens on the mobile device

when you need to. When you join with a mobile device, that device can also serve as your extra camera to show the rest of your room when needed. You can even use it as a document camera if you have a rack or a stack of books to make it easy to show a particular area, the blackboard, or the table surface on which you write or draw.

Shift your attention: You can be so focused on the task that you speak only to the students in the class, forgetting students attending remotely. Remember to look at the camera occasionally. In my Zoom sessions, I found that experienced teachers walk to the camera and bend down so that their talking video looks larger, and their voice sounds clearer. Remember also to call out the names of the remote students.

If you are writing on the blackboard or demonstrating on the desk, make sure remote students see what you do. Sometimes it is too difficult to manage, hence the need for a Zoom assistant, as I will discuss next.

Have a virtual assistant: I have mentioned in the chapter on virtual teaching that it is beneficial to designate a teaching assistant as your Zoom assistant to help monitor the virtual space. If you do not have a teaching assistant, have students in your physical classroom rotate as your Zoom assistant. Encourage your students to help each other when there are technical issues so that you do not have to spend time troubleshooting. You will be surprised how resourceful and helpful your students can be when you appeal to their altruistic tendencies.

Use breakout rooms. When the class is large, consider using breakout rooms for discussions or activities in a small group environment. Sometimes breakout rooms have deafening silence and students do not participate as actively as you might wish. Consider assigning roles. You can assign one person as a leader and another as a reporter. Or have students volunteer for these roles. Like asynchronous discussions, it helps to have engaging questions for them to discuss.

Add a collaborative channel. You may think that HyFlex teaching involves only Zoom or another conferencing tool. I suggest having additional technology on the side to supplement your teaching and student learning. I have found it super helpful to open, during the time of a HyFlex session, a collaborative document for the entire class or class groups. The chat function of a virtual meeting tool is useful, but it is limited in functions. However, a Google Doc allows rich formats, multiple collaborators, and comments, among other things. Students can even use the voice typing tool to turn audio into text, which, of course, needs heavy editing later. Otherwise, it may seem to be a page from a stream-of-consciousness novel.

Build communities. Some remote students never turn on the camera, and consequently, others may not even know who they are. There are several ways to build a better class community. You could rotate students for face-to-face and virtual sessions so that students have opportunities to see and get to know each other. You could have a common orientation or introduction session where everyone appears in Zoom, with cameras on, to meet and socialize with their fellow students. You could record the video for your own reference. Alternatively, you might have every student produce an introduction video and post the videos on your learning management system. If your students are permanently online or face-to-face without the possibility of rotation, see if you can pair up a face-to-face student with a remote one to form what can be called "Zoom buddies" to help each other.

It is also possible for face-to-face students and remote students to form different subcultures or even little cliques that can become counterproductive. Mix them up in your group assignment for improved socialization and rapport. Once in a while, hold a whole-class virtual or face-to-face meeting to break the sense of isolation for students.

Shifting Modalities

Flexibility not only characterizes the way students are distributed in a HyFlex class, but it also designates how teachers can change modality mid-course. Schools with a lot of funding, such as Ivy League universities, may already have HyFlex classrooms equipped with bleeding-edge video conferencing tools to make it possible to teach to students anywhere. Such facilities require a large team of dedicated professionals to maintain. It is all costly. However, with smart combinations of existing technologies, you could also teach HyFlex classes using commodity products such as Zoom or Google Doc, at low cost but with similar results. These technologies themselves will evolve, with vendors developing even more functions to support flexible teaching in a variety of formats.

Your school or district may also constantly update its policies to keep up with changes in both technology and social circumstances. Check with your school or district to determine how much flexibility you have in choosing your modality and the ways you can divide students for optimal delivery.

You could also start with a particular mode of teaching. As the semester goes on, situations come up, and you might have to pivot to all remote teaching for all students. Unless prohibited by your school or district's policies, you could choose to have a virtual session for all students at certain times of the semester, a day, or a

week, as long as you communicate that clearly to students earlier on. In the meantime, you might want to ask everyone to download the software for virtual meetings just in case.

Your modality decision also involves the choice between synchronous and asynchronous teaching, as well as the combination of the two. Certain components, such as lecture videos, may work better if you post them online for students to access at their own pace. Once you move content online for asynchronous delivery, you may need to change the time of your synchronous session to free up time for students to study on their own. The more content you move online, the easier it gets when deciding to turn the course into an online course in the future.

All the HyFlex modes may be confusing and frustrating for many of you and for students, but what is a challenge for one person may be a tremendous opportunity for another. Changes in the direction of HyFlex courses are expanding your autonomy as well as your availability to more students. As you become well-versed in teaching HyFlex classes, you will also have the potential to craft new careers for yourself.

Conclusion

AS I COME TO THE CLOSE OF THIS BOOK on developing a vigorous online course, I should mention that the landscape of education has undergone a profound transformation. The integration of synchronous, asynchronous, and hybrid learning modalities has redefined the traditional classroom, offering educators and students unprecedented flexibility, accessibility, and opportunities for engagement. Throughout this journey, we have explored the multifaceted elements essential for creating robust online courses that equip learners to thrive in their fields of learning.

The development of vigorous online courses begins with a strategic approach to instructional design, encompassing the careful alignment of learning objectives, content delivery methods, and assessment strategies. Synchronous learning experiences foster real-time interaction and collaboration, which is close to the dynamic nature of face-to-face instruction in a virtual setting. This can be a baby step towards developing a fully online course. I also realize that technologies have developed sufficiently to hold an entire course in this matter if a professor chooses to do so. The disadvantage of this modality of teaching is that teachers have to restart every time they teach, whereas, with asynchronous or hybrid modalities, it is possible to invest some time at the front end to develop materials that can be reused again and again. Asynchronous learning, on the other hand, provides learners with the flexibility to engage with course materials at their own pace, accommodating diverse learning preferences and schedules. Hybrid learning models seamlessly integrate both synchronous and asynchronous elements, offering a balanced approach that maximizes learning outcomes.

We started the course development process by asking you to think about assessments. Typically, you should start the development process by asking yourself about the objectives you want students to achieve, and you use assessments to make sure you can measure their achievement of these objectives. Assessment plays a pivotal role in online courses, serving to measure student progress, evaluate learning outcomes, and provide meaningful feedback. Implementing varied assessment methods, including quizzes, assignments, projects, and discussions, allows educators to assess student mastery of course content comprehensively. Furthermore,

incorporating formative assessment strategies enables ongoing monitoring of student learning, facilitating timely intervention and support as needed.

Central to the success of online courses is the creation of engaging and accessible content that caters to the diverse needs and learning styles of students. Leveraging multimedia resources, interactive activities, and innovative instructional tools enhances the overall learning experience and promotes active participation. Additionally, prioritizing accessibility ensures that all learners, regardless of their individual abilities or circumstances, can fully engage with course materials and succeed academically.

Interactions lie at the heart of effective online learning, fostering a sense of community, collaboration, and intellectual exchange among students and instructors. Encouraging active participation in discussion forums, group projects, and virtual peer interactions cultivates a rich learning environment that transcends physical boundaries. Moreover, fostering a supportive and inclusive learning community empowers students to engage authentically with course content, share diverse perspectives, and construct meaningful knowledge together.

Student support and motivation are integral components of successful online courses, ensuring that learners feel empowered, engaged, and supported throughout their educational journey. Providing accessible resources, responsive communication channels, and personalized assistance fosters a supportive learning environment where students can thrive academically and personally. Additionally, fostering intrinsic motivation through meaningful learning experiences, goal setting, and self-directed learning empowers students to take ownership of their educational journey and pursue academic excellence with passion and enthusiasm.

In conclusion, the development of vigorous online courses requires a holistic and student-centered approach that encompasses synchronous, asynchronous, and hybrid learning modalities, effective assessment practices, engaging content creation, interactive interactions, accessibility, and robust student support and motivation. By embracing innovation, collaboration, and a commitment to excellence, teachers can create transformative online learning experiences that empower learners to achieve their full potential and thrive in an ever-evolving digital landscape. As we continue to navigate the evolving landscape of online education, let's press on in creating vigorous online courses that inspire, engage, and empower learners.

About the Author

BERLIN FANG, (Ed.D., M.S., M.A.) is a Learning Innovation Designer at the University of St. Augustine for Health Sciences. Throughout his career in online learning design, he has served as the Director of Instructional Design at Abilene Christian University, Associate Director of the North Institute of Oklahoma Christian University, and Instructional Design Specialist at Marshall University. He has also translated iconic literary works like *The Sound and the Fury (William Faulkner)*, *A Tree Grows in Brooklyn (Betty Smith)*, *Let the Great World Spin (Colum McCann)*, and *Boyhood (J. M. Coetzee)* from English to Chinese, and authored the book *Tea Eggs under the Star-Spangled Banner*. His multifaceted professional life is an interesting mixture of instructional design, translation, and writing, a confluence that he views as a natural pursuit of cultural understanding and dynamic equivalence across diverse platforms, modalities, or cultures. Course design remains both his profession and his passion. He actively contributes articles to publications like *Educause Review*, *Open Education Research*, *China Daily*, and *WISE Review* and frequently lends his expertise to media outlets on topics related to online learning, educational technology, and international education. To learn more, please visit his website at berlinfang.com.