
CREATING MEANINGFUL LEARNING ACTIVITIES THROUGH LEARNING EXPERIENCE DESIGN

In chapters 3 and 4, we focused on design strategies that optimize learner interactions with the technology interface and content aspects of the online learning experience. This chapter deals with one of the most pedagogically complex and vital aspects of online learning design: learning activities. Well-designed and challenging learning activities are the means through which learners construct new knowledge, build skills, exercise higher-order thinking, and connect what they have learned with their academic, professional, and personal lives.

We begin by describing key attributes and types of online *learning activities*. The emphasis throughout this chapter is on applying design thinking as a foundational strategy for creating innovative learning solutions that fully take advantage of technology affordances. Our goal is to provide exemplars, ideas, and strategies to stimulate one's own design creativity for crafting engaging and impactful learning activities in the online environment.

Guiding Design Questions

- How can we apply design thinking to create learning activities?
- How can we design engaging online learning activities?
- How can we integrate learning activities into a course unit to support higher-order learning?
- How can we design learning activities that help learners engage in deep learning?

Learning Activities, More Than Assignments

Although course instructors have a big picture understanding of how various content elements and assignments integrate into a course as a whole, learners might perceive individual assignments as disconnected tasks with only implicit relationships with other course material and practical application. Van Merriënboer and Kirschner (2018) described this as “atomistic” learning design characterized by fragmentation and compartmentalization of the learning process that can inhibit application and transfer of learning. An example of fragmentation is the common undergraduate course unit consisting of separate lectures, readings, discussions, quizzes, papers, projects, and practice exercises, which from a learner perspective may seem like loosely connected learning events. Online course designs that consist mainly of “assignment lists” are in many ways carryovers from face-to-face classroom-based instructional models. This type of course design does not provide the kinds of integrated and holistic learning experiences that engage learners and promote deep learning in an online environment.

Throughout this chapter, we use the term *learning activities* as opposed to *assignments*. The distinction between the two can be somewhat blurry but worth noting when designing online courses. Often, assignments are given to students as required stand-alone tasks to be completed as homework. In designing an online course, it is necessary to think more holistically about assignments and tasks as more active, inclusive, and engaging activities. Learning activities can be purposefully and skillfully designed as “learning experiences” that actively engage learners at the cognitive, emotional, behavioral, and social dimensions of learning. Therefore, we view *learning activities* as higher order and more complex learning experiences that typically incorporate all four learning dimensions, emphasizing both knowing and doing.

Types of Online Learning Activities

This chapter draws from existing frameworks for classifying and designing learning activities. Two widely used practitioner-focused frameworks that emphasize the learner experience aspects of course design have been provided by Horton (2012) and Fink (2013).

Horton (2012) identified three types of learning activities: absorb, do, and connect. Absorb-type activities are those in which the learner interacts with content and is mentally active in perceiving, processing, consolidating, considering, and judging. Absorb-type activities include content interactions that involve reading, listening, and viewing. Do-type activities are those that link content knowledge to application and skills. These activities involve practice exercises, discovery tasks, games, and simulations. Connect-type

activities go beyond absorbing information and acquiring knowledge; they link newly acquired knowledge to real-world tasks through reflection, questioning, evaluation, research, and critique. This book expands on Horton's framework by integrating absorb, do, and connect activities in a more holistic way to avoid fragmentation.

Fink's (2013) framework provided a holistic approach to creating "significant" learning experiences that focus on active learning. Similar to Horton (2012), Fink identified the following main types of learning activities: (a) getting information and ideas through various media such as video lectures, texts, or web-based resources; (b) doing and observing through authentic learning activities such as case studies, simulations, and role plays; and (c) reflecting on what has been learned and the learning process, either alone or with others. Fink emphasized an integrated approach to learning experience design where his three types of learning activities are interwoven to form a "holistic view to create the kinds of learning activities capable of creating significant learning" (p. 118). Translating this holistic approach for designing learning activities into tangible learning experiences requires design thinking and integrated design strategies that bring together multiple learning tasks, including absorbing information, doing, connecting, and reflecting into a single unified learning experience. Incorporating the four dimensions of learning into the design of these types of learning activities can result in deeper, more engaging, and significant learning outcomes.

Designing integrated learning activities that combine absorbing discipline-related information, doing, reflecting, interacting with others, and connecting what is learned to real-world contexts are major ingredients for creating impactful online learning experiences. In addition, these learning experiences need to incorporate a variety of motivational and engagement elements, optimal levels of challenge, contextualization (linkage to real-world situations), flow, active learning, interactivity, learner agency, and choice, all of which promote deep learning. Designing such learning experiences requires a new way of thinking.

A New Mindset for Designing Learning Activities for the Online Environment

The potential pedagogical payoff of designing significant learning activities for online courses requires instructors and course designers to acquire a better understanding of the affordances of new technology and adopt a new mindset for designing innovative and engaging learning activities.

Applying knowledge of technology affordances to create innovative learning solutions often occurs by drawing inspiration from other professional

fields. Consider the design thinking used by creators of educational digital games. Game design focuses heavily on the player experience, which is equally important as the content contained in the game. Well-designed games, like most well-designed learning activities, present a compelling challenge that motivates players to fully invest in the experience. In many popular internet multiplayer games, one can observe how the four dimensions of learning (cognitive, emotional, behavioral, and social) are interwoven into an interactive and compelling experience. The design mindset and engagement strategies used in game design can be useful for instructors and course designers when developing learning activities (Kapp et al., 2014).

Designing Online Learning Activities

There are numerous approaches for designing online courses and learning activities, many of which involve following a systematic design process. One common approach is the ADDIE (analysis, design, development, implementation, and evaluation) model (Branch, 2009; Kurt, 2017). Although useful in designing learning activities in certain traditional classroom-based situations, the ADDIE model has proven to be less effective in producing innovative solutions for technology enabled learning environments. Newer and more flexible design approaches are better adapted for digital learning ecosystems and take greater advantage of the affordances of digital media and technology. An example is Allen's (2012) successive approximation method (SAM), which integrates design thinking and is less linear and fragmented and more holistic and iterative. Next, we provide an example scenario to illustrate and walk through the process for creating online learning activities using a design thinking process. Design thinking has proven to be most effective with small teams and approached as a collaborative activity (Brown, 2009).

French and Italian Renaissance Literature Course Design

For several years, Professor Janus had taught a successful classroom-based course in French and Italian Renaissance literature and received approval and funding to develop an online version of the course. He collaborated with the college's instructional technology team to set up a course framework and to create a set of online learning activities that used available digital technology in more innovative and pedagogically effective ways.

Professor Janus's initial goal was to create a series of online lessons to develop student skills in critically reading specific genres of literary works from the French and Italian Renaissance period. Each lesson would focus on

two or three short literary works that learners would be called on to analyze and interpret using a strategy called “intertextuality.” This form of critical reading involves identifying relationships and inferences within a text with the art, religion, science, cultural artifacts, and other literary works of the author’s time period. Learners analyze these intertextual relationships and explain how they influenced the author’s work.

Critical reading for intertextuality requires significant invested mental effort involving higher-order cognitive skills such as analysis, synthesis, and evaluation. The learning outcomes desired require learner engagement and deep learning encompassing all four dimensions of learning. The initial design plan for the online course proposed replicating the existing face-to-face course lesson structure, which consisted of three separate but associated learning activities:

1. *Lecture presentation (45 minutes)*: intended to prepare learners for the critical readings, covering background information, explanations of terminology, and intertextuality influences that learners need to utilize
2. *Reading assignments*: two or three literary works downloadable as PDF documents from the course website that learners read and then answer several interpretive questions to be returned to the instructor
3. *Class discussions*: instructor-led debriefing of the readings to share interpretations and clarify misunderstandings

Replicating the structure of these existing lessons and learning activities for online delivery would involve producing video lectures, creating electronic documents and question submission forms, and setting up an instructor-moderated online discussion forum. Because Professor Janus was not satisfied with the learning outcomes and level of learner engagement experienced in the classroom version of the course, he wanted to explore the use of available digital technologies to redesign these lessons and improve the quality of the learner experience. The design process for creating the new online learning activities involved six phases of design thinking. We describe next how he created these learning activities using the design thinking process.

Empathize With Learners

To develop a better understanding of how learners approach critical reading tasks, Professor Janus decided to use the existing lesson structure from the classroom version of the course as a starting point to probe deeper into the learner experience. Professor Janus, together with a student assistant, arranged

meetings with five current and former students from the face-to-face course. Questions focused on each of the three component learning tasks comprising the critical reading lessons: lecture presentation, reading assignments, and class discussions. These meetings, lasting about 20 minutes each, were informal and conversational in tone, and structured around several prompt questions to start the conversation.

During office hours for his classroom course, Professor Janus looked for opportunities to briefly chat with additional students regarding what they thought and felt about the learning activities. In addition, during one class session, he divided students into small groups and asked them to list their major likes and dislikes with the critical reading assignments and offer suggestions on how to make the learning experience better. This took about 15 minutes of class time. The quality of the feedback was eye-opening, providing insights that would be useful not only in the design for the new online learning activities but also for enhancing the face-to-face course.

Define the Design Challenge

Together with a student assistant and an instructional technology consultant, Professor Janus analyzed and synthesized the learner feedback and constructed several personas—fictional characters that represent characteristics of students in the course. As a result of this process, the design team formed a more accurate mental picture of learner challenges and envisioned how they experienced the learning activities in terms of the four dimensions of learning. The common themes that emerged are summarized in Table 5.1.

The two major issues disclosed by students centered around cognitive load and fragmentation of lesson components. Lecture content material was perceived as most useful for learners at the time of greatest need which was during the actual critical reading task. Constant task switching between lecture notes and the reading material created a type of split attention effect (Clark & Mayer, 2016) that interrupted the flow of deep reading, resulting in frustration and poor comprehension.

The learning process was also perceived by students as fragmented or broken down into separate related events that were not tightly integrated into a unified experience. Overall, the learning activities within the lesson were not experienced as engaging and felt more like required assignments: read the article, answer test questions and submit answers to the instructor, and discuss the reading. The discussions did not address many of the interpretive challenges that occurred during the time of the reading.

The insights gained from learner feedback set the stage for the next phase of the design thinking process, which was to articulate the pedagogical

TABLE 5.1
Synthesis of Feedback Gained From Students

<i>Learning Activities</i>	<i>Students' Feedback</i>
Lecture Presentation	<ul style="list-style-type: none"> • The instructor conveyed enthusiasm and passion for the literary works in the lectures, which was motivating for learners. • Although lectures were perceived by many students as passive learning experiences and attention often waned, most of the lecture materials were perceived as useful for helping to interpret intertextual relationships in the literary pieces.
Readings Assignments	<ul style="list-style-type: none"> • Readings were cognitively challenging and complicated. Intertextual connections were difficult to identify and interpret even after being explained during the lecture. This was the hardest part of the entire course for most students. Attention and interest often declined during the reading activity and a few students confessed they read superficially only to answer the questions. • Referencing lecture notes and course website resources during the actual reading were disruptive and broke the flow of the reading experience (split attention effect). • Understanding terminology was one of the biggest frustrations, requiring learners to frequently break the reading flow to look up words and phrases. One student mentioned that it would be very helpful to be able to get hints and tips as one read the literary pieces. • Responding to the instructor's questions was difficult and stressful and felt like a test. Not being able to get feedback on their responses left them unable to gauge if their interpretations were accurate. This was the least enjoyable aspect of the learning activity.
Class Discussions	<ul style="list-style-type: none"> • Many students completed the critical readings still in an uncertain state regarding their interpretations. The follow-up discussions provided clarity and an opportunity for the instructor to probe more deeply into texts. • For many students, this deeper understanding seemed to come after the fact. To have the "a-ha!" occurring during the time of the reading would provide a much more satisfying experience.

challenges to be addressed in the design of the online version of the course. Rather than moving quickly to coming up with solutions to these design challenges, the team took time to frame the learning design challenges into the form of “How can we . . .” questions:

- How can we create a better flow experience for learners when they engage in critical reading of the text material?
- How can we make the necessary support information provided during the lecture more easily and quickly accessible to learners as they read the texts and minimize split attention?
- How can we make the interpretive tasks associated with the readings seem more engaging and challenging?
- How can we make the questions following a critical reading activity seem more compelling and less like test questions?
- How can we make the three main components of the lesson feel less fragmented and more tightly integrated?
- How can we make the discussion more relevant and engaging for individual learners?

Formulating these types of questions and resisting the temptation to jump immediately to solutions helped to focus the next phase in the design thinking process on coming up with creative ideas.

Ideate and Brainstorm a Variety of Potential Solutions

Professor Janus, along with a faculty associate, a student assistant, and an instructional technologist, convened for several short sessions to explore and brainstorm ideas to address the design challenge. The instructional technologist demonstrated a few hypermedia software products that sparked ideas about using the affordances of multimedia software to incorporate interactive text material. One design thinking strategy used to generate potential design solutions was to express each idea in the form of a “What if we could . . .” statement. This approach created synergy and ensured that numerous ideas were offered for consideration and avoided coming to closure on any one particular idea prematurely. The team’s “What if . . .” statements included the following:

- What if we bring together or integrate the support information from the instructor lecture into the critical reading text so that the learners get the information they need far closer in time and space to where it’s needed (absorbing, doing, and connecting into a single unified activity)?

- What if we incorporate hints and prompts into the text where they can aid the learner in interpretation?
- What if we make the interpretive questions associated with each reading seem more game-like by framing them as an interpretive challenge rather than a test?
- What if the interactive critical reading activity contained an assessment function?
- What if learners submit questions for the follow-up discussion during and immediately after the reading?

Brainstorming generated numerous creative ideas for using new digital software to design critical reading activities for the online course. The team selected several of the most promising ideas for refinement and prototyping. For example, it was suggested that portions of Renaissance literary texts could be displayed on webpages containing hyperlinks. As learners read the texts, they could click on these links that display popup windows containing embedded supportive background material, definitions of unfamiliar terms, multimedia explanatory content, and questions to provoke curiosity. This material might also include personalized instructor hints and tips in the form of text bubbles and audio and video clips. This would extend the instructor presence into and around the readings as a type of virtual critical reading coach. Other ideas included incorporating gamification elements into the learning activities to boost motivation and interest.

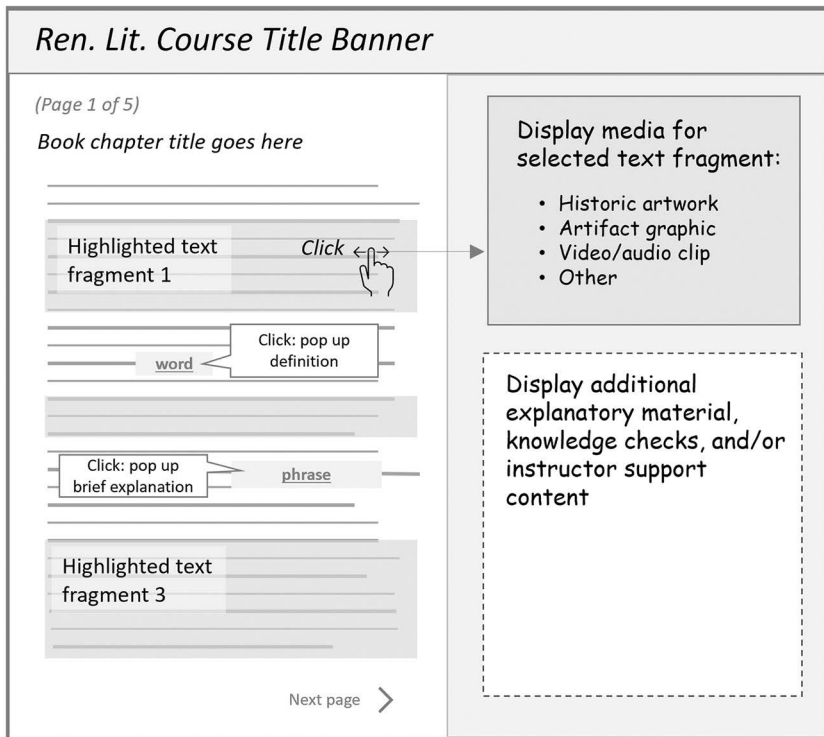
Several innovative approaches for designing pedagogically rich critical reading activities emerged from these brainstorming sessions. It became evident that the initial temptation to replicate the existing classroom course lessons online would have resulted in a less than optimal and fragmented learning experience that neglected to take advantage of the affordances of technology.

Prototype Design Ideas

The next phase of the design thinking process involved visualizing and refining some of the best ideas generated from the brainstorming sessions. This involved creating rapid prototypes, often referred to as storyboards or wireframes, to better visualize how an interactive critical reading activity might look and function. The rapid prototypes were “quick and dirty” mockups, often in the form of paper sketches depicting the major screen elements of the learner interface.

Over a period of several days, these prototype sketches were reviewed and refined by team members and shared with students and colleagues for feedback. Having something tangible but still in a rough form prompted

Figure 5.1. Screenshot of a prototype design.



others to contribute ideas to a work in progress. Later, a simple but higher fidelity mockup of a critical reading interface to illustrate how it might look and function was created using PowerPoint slides. After several iterations and refinements, a final prototype design was completed that enabled the design team to walk through how a critical reading hypermedia document would look, function, and be used as a learning activity. An example PowerPoint prototype screen is provided in Figure 5.1.

Test Out Designs in the Real-World Context

The prototyping process enabled the learning technologist to identify an inexpensive and user-friendly software application that Professor Janus could use to create a variety of interactive documents for his online learning activities. The software had the ability to paste text from digitized documents of Renaissance literary works into the application, format it, and add interactive elements. For example, Professor Janus could highlight certain words, phrases, or portions of a text that when clicked displayed helpful interpretive support material, including definitions of unfamiliar words and expressions

and historical artwork referred to in the text. Instructor explanatory commentary and knowledge-check questions with feedback could also be integrated at certain key points in the document for learners to self-assess their critical reading accuracy.

Implement

Professor Janus developed a process for creating multiple critical reading learning activities such that each weekly lesson in the course included at least one critical reading activity. Figures 5.2 and 5.3 show screens from the final course. The final solution addressed the design challenges, resulting in a set of learning activities that integrate disparate learning tasks into a holistic online learning experience. The structure of each learning activity consisted of the following interrelated components:

- *Introductory pedagogical wrapper:* This introduces the learning activity including a brief instructor video providing a broad historical context for the reading and an explanation of the purpose of the critical reading (see Figure 5.2). The tone of the introduction was presented in a highly enthusiastic and motivational fashion, framing the reading activity like an interpretive mission going back in time.
- *Interactive hypermedia document containing a portion of a literary work:* Each reading begins with one or two interpretive challenges to reinforce the critical reading task. The hypermedia material contains highlighted text with embedded interactive elements. These elements provide scaffolding for students to detect intertextuality relationships in the text and reinforce critical reading skills (see Figure 5.3).
- *Critical reading challenge questions:* When learners complete a reading they are prompted to respond to the interpretive challenges for the reading. This consists of a link to the quizzing application of an LMS which presents a few short answer and multiple choice questions to check student critical reading skills and to validate completion of the activity.
- *Follow-up group discussion:* The instructor sets up and moderates a discussion forum to debrief the interactive reading experience. The discussion provides learners with an opportunity to reflect on their challenges interpreting the literary work and share their insights with others.

The design thinking phases and action steps used in the French and Italian Renaissance literature online course generated a novel hybrid learning experience and is summarized in Table 5.2. Lecture content unbundled and integrated into the actual reading task enabled acquiring information at the time of greatest need to support critical reading skills.

Figure 5.2. Screenshot of introduction activity with video.

Brazil: The Antarctic France French and Italian Renaissance Literature

[Contacts](#) [Glossary](#) [Note Pad](#) [Chat Room](#) [Quit](#)

What this unit is about

In 1555 three ships under the command of Nicolas de Villegagnon left the French port of Le Havre in the hope of starting the colonization of Brazil. The Catholic and the Calvinist members of the expedition landed on a desert island in the bay of Rio de Janeiro, where, surrounded by cannibal tribes, they spent a great deal of their time arguing about the presence of Christ in the bread and wine of the Christian offering. The fort they built was taken by the Portuguese in 1560 and the failure of the French colonization of Brazil resulted in a vivid exchange of pamphlets and printed accounts of the journey.

What you will learn

In this lesson you will read the account of Jean de Léry's *History-of-a-Voyage-to-the-Land-of-Brazil*, otherwise called *America*, published in 1578. The main purpose of the unit is to show you how the experience of otherness - the encounter with cannibal Indians - allowed French Renaissance culture to conceptualize the main issues it was struggling with.

How to proceed

During the week, the following sections of this unit will be successively available to you.

Section	Available	Must complete by
2-Reading Activities (includes quizzes)	Thursday 9:00 AM	Monday 6:00 PM
3-Group Discussions	Monday 12:00 PM	Tuesday 6:00 PM
4-Final Quiz	Tuesday 6:00 PM	Wednesday 10:00 PM

Time requirement

Professor Janus' Introduction

Strategies for Designing Online Learning Activities

We offer five strategies for designing online learning activities. These strategies are not intended to provide prescriptions but rather spark ideas for crafting learning through the use of design thinking and taking advantage of technology affordances.

Apply Design Thinking With an Empathic Mindset for the Learner

The foundation of design thinking is empathy (Brown, 2009). In practicing learning experience design, empathy is more than just understanding and acknowledging the feelings of struggling learners; it involves a learner-centered mindset coupled with behaviors that reflect what we refer to as the four Cs of empathic design:

1. *Caring*: This is a genuine concern about the pedagogical impact of a particular learning activity, how learners experience it and, if needed, a desire to make it better. But caring needs to involve a deeper desire to understand more about the learner perspective.

Figure 5.3. Screenshot of interactive text.

French and Italian Renaissance Literature

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Chapter XXII. How Man is more excellent and perfect than all the beasts together


Now we will begin to deduce the great excellence of Man and to understand that this great God, creator of the universe, is to be admired. He did not give Man certain features that he gave the animals, knowing that his sapience could endow him with that which Nature denied him. For though he arrives on earth naked and without arms (unlike animals that have horns, teeth, nails, claws, fur, feathers and scales), he is to his advantage armed with understanding and clothed in reason, not on the outside but on the inside: He put Man's defenses not on his body but in his spirit so that he has neither the grandeur nor the strength of beasts, neither the firmness of horns nor the great mass of flesh and bones that compose animals and prevent them from being tamed, taken or dominated by the power and authority of Man. In Man, there is religion, justice, prudence, piety, modesty, clemency, valiance, strength, faith and such other and different virtues that are not found in animals, as I will presently demonstrate.



Listen to your professor's commentary by clicking below:



Charles de Bovelles, *Liber de Sapiente* (1510).



Complete the following exercise:
What are the faculties that characterize the human being according to Bovelles?

☐ He lives

☐ He is creative

☐ He can reason

☐ He perceives the world through his senses

☐ He can live in society

TABLE 5.2
Design Thinking Phases and Action Steps

Phase	Action Steps
Empathize	Understand the learner perspective
Define	Clearly frame the design challenge around learner needs
Ideate	Envision possible solutions
Prototype	Make the vision tangible
Test	Reality checking
Implement	The final design in action

2. *Curiosity*: This is manifested in a willingness to question the accuracy of one's own assumptions about what learners are thinking, feeling, and behaving related to a particular learning experience.
3. *Conversations*: Reaching out and making an effort to engage learners in inquisitive dialogue to get input and ideas as to what works best to achieve the desired learning outcomes.
4. *Changing or correcting*: This involves making reasonable efforts to address and remedy deficiencies in the design of a particular learning activity based on learner feedback. Taking the time to listen to and understand learner experiences is the basis for design thinking.

Use New Technology Tools and Their Affordances to Create Integrated and Impactful Learning Activities

Digital technologies provide new opportunities for learner interaction with content, instructor, and other learners. The learning design challenges are mainly about overcoming functional fixedness, using new technology tools to do old fragmented jobs. The affordances of new digital technologies make possible new types of integrated learning activities such as illustrated in the design thinking process with Professor Janus.

In chapter 3, we showed how media hybridization integrates affordances of multiple media formats and how to craft compelling narrative content for interactive case studies and scenarios using the 7Cs framework. Interactive case scenarios are just one example of how technology affordances can be used to augment conventional learning activities including case studies, stories, vignettes, role plays, and simulations. Evidence shows the effectiveness of using scenario-based learning in online environments as an engaging inductive approach for building skills and expertise (Clark, 2013).

Example Scenario-Based Learning Activity

The following is a description of a scenario-based online learning activity. Notice how the role of the learner shifts from that of a passive observer outside the case to an actual participant inside the case narrative. The learner assumes a role as the primary actor responding to realistic situations where immediate and corrective feedback can be provided in context.

Amber teaches an undergraduate course in public health to prepare students for solving real-world problems. One of her learning activities is an online case scenario. In the scenario, learners assume the role of an intern who is working as part of an interdisciplinary team to solve a mystery disease outbreak in Bangladesh. In this scenario, learners are challenged to investigate clues related to the mystery outbreak and prevent the spread of the disease. As they engage in this activity, learners also need to learn about the culture of Bangladesh and how to work with other professionals involved in disease outbreak and prevention.

The scenario consists of a series of screens with narrative text, images of characters, photos of Bangladesh, navigation controls, and resource links. Individuals analyze situations, collect information, and make decisions requiring application of material covered in class lectures and course readings. Interviews with characters are represented with photos and speech bubbles. Maps of the outbreak, detailed disease data, interviews with local witnesses, and other project documents are also provided.

Throughout the scenario, learners are asked to make decisions and respond to questions. Decision choices are followed by consequential feedback provided by the scenario characters. One of the characters is a disease control professional (a role played by Amber) who appears at critical junctures to provide tips, feedback, and prompts for reflection. In their role as an intern, learners are asked to fill out an accompanying worksheet, where they list evidence about the cause of the disease (e.g., bacteria, fungus, and so on) and how it is transmitted to humans. In a follow-up online discussion, individuals bring their findings, discuss questions, and share experiences within their small teams. Amber connects the scenario to actual real-world events and situations and encourages personal reflection.

Scenario-based online learning activities provide a compressed, structured, and simulated experience that supports contextualization of course content and “learning-by-doing.”

Integrate Multiple Learning Tasks Into an Inclusive Learning Activity

Learning activities may combine multiple tasks that integrate separate absorb-do-connect-type learning tasks into a more comprehensive and interconnected learning experience. Notice how multiple learning tasks can be tightly integrated in a learning activity in the following example:

1. The instructor provides a pedagogical wrapper to introduce the learning activity by explaining the purpose and goal, how the assigned tasks interrelate, and how the activity supports key learning objectives of the course.
2. The learner completes reading of several assigned articles, creates a summary of one selected article, and posts the summary in the group discussion forum.
3. The learner reads article summaries of other students, answers questions posted by a peer facilitator, relates learning by drawing on personal experiences, and exchanges insights with other classmates in the group discussion forum.
4. The learner creates a concept map of the interrelationships among concepts found in the articles, summaries, and discussion and shares perspectives in an open-ended group discussion. Learners reflect on each other's concept map construction and on their own learning.

5. The instructor debriefs the learning activity in the group discussion forum, highlighting key concepts and principles from the learning objectives, and how the activity ties into succeeding course units.

This integrated learning activity comprises multiple tasks. Connect-type learning tasks happen during and at the end of a discussion period. During the discussion, learners are involved in the analysis, evaluation, and synthesis of concepts through in-depth conversations. At the end of a discussion period, learners create a concept map for the readings and participate in open-ended reflections about their own learning and connection to the course topics. Concept map creation is an iterative process that allows for higher-order thinking through reflective thinking, analysis, and evaluation (Cañas et al., 2017). Sharing their concept maps with others and reflecting on their own learning moves learning to a higher-order level. Note how the instructor made explicit the interrelationship of the constituent tasks by pre-briefing and debriefing the entire learning activity.

Use Pedagogical Wrappers to Prepare Learners Cognitively and Emotionally for the Learning Activity

Well-designed online learning activities cognitively and emotionally engage learners in deep learning. One strategy for helping immerse students in a learning activity is the use of pedagogical wrappers, which we introduced in chapter 4. Pedagogical wrappers serve the following functions: (a) set the stage on both the cognitive and emotional dimensions of the learning experience at the beginning, and (b) provide closure and connection at the end of a learning activity. By making the intent explicit at the beginning of a learning activity, instructors prime learners by helping them understand the relevance and connection between the learning activity in which they are about to engage and their existing knowledge and experiences. The more complex the learning activity the greater the need for an expanded pedagogical wrapper at both the start and conclusion of the activity.

At the beginning of a challenging learning activity, learners may have different levels of prior knowledge. For learners with low prior knowledge, pedagogical wrappers can point them to targeted resources that cover prerequisite content learners need to know before engaging in the learning activity. Pedagogical wrappers can be in the form of a text or short instructor video that informs learners about what principles, techniques, or strategies they will be expected to apply during the lesson or unit and how they connect them with broader course objectives. To create emotional engagement, pedagogical wrappers should have a conversational tone as if the instructor were speaking directly with the learners. They can frame the learning activity as a compelling learning challenge rather than a compulsory task.

A pedagogical wrapper provided at the outset of an activity can help concentrate learner attention on a task, serving both a motivational and cognitive priming function. For example, if the objective for a learning activity involves an in-depth discussion, pedagogical wrappers can make the purpose of the discussion explicit and clarify the expectations, giving learners focus and sense of the activity flow. Pedagogical wrappers can disincline learners from posting surface-type messages that are explanatory, lacking problem-solving, analysis, and synthesis (Shearer et al., 2015).

For complex and more immersive types of learning activities, such as case studies, simulations, project-based learning, interactive scenarios, and games, it is helpful to have more substantial pedagogical wrappers at the beginning of a learning activity and more so at the end. At the conclusion of a learning activity, pedagogical wrappers can help to add closure and connection to the learning experience on both the cognitive and emotional dimensions. Through a debriefing summary, the instructor should make explicit the intended takeaways of the learning experience and how what they learned can be applied.

Keeping the Learner at the Center of Online Learning Activity Design

Designing engaging and impactful learning activities that are both learner and task focused is at the heart of learning experience design. Every lesson or unit in an online course should have at least one or more learning activities that challenge and engage learners in achieving higher-level learning objectives. These deep learning experiences result when the cognitive, emotional, behavioral, and social dimensions of learning are tightly integrated into an online learning activity.

Because each online course situation is different in terms of its objectives, learners, type of content, available technology, and instructional approaches, learning activities seldom come prepackaged for use. They need to be skillfully and creatively designed by adapting learning activities from other courses or crafting them anew. In this chapter, we emphasized design thinking as a mindset and approach for creating impactful and engaging learning activities that take advantage of new digital technology for the online environment. Our intention was not to prescribe, but rather to present a flexible and well-tested design process and practical strategies for adaptation to your own online course design situations.

This chapter expanded on the design of instructional content covered in chapter 4, and much of what was learned will be carried forward and expanded upon in the next two chapters related to the design of online social interactions and assessments and feedback.

