Chapter 1

Teaching Online: The Big Picture

WHY DOESN'T THIS book jump right into the tips for effective online and blended learning? Because using the tips depends on an understanding of pedagogy. Pedagogy is the science of how to design and teach so that students experience lasting and significant learning. The most important missing element in the preparation of many faculty is a foundation in teaching and learning principles and practices. This chapter will help you build that foundation, a foundation that will have lasting impact as you journey toward becoming confident and an expert in online and blended teaching and learning.

The first part of the chapter focuses briefly on a big-picture perspective of higher education and its near-term future. This perspective will be valuable for understanding the context in which to evaluate and possibly adapt the new tools and movements that promise silver bullet solutions. Some of the new emerging ideas are grounded in solid pedagogical theories, holding great promise. Other ideas are simply variations of traditional practices that still need refinement and adaptation. Unfortunately, some new trends are ineffective strategies, grounded in outmoded and ineffective teaching practices.

Secondly, this chapter provides a quick look at the most influential learning theorists. The learning theories of these giants can truly help guide you into designing and teaching courses well. We know that most faculty have little patience or tolerance for spending time learning practices and principles not of their own professional discipline, but knowing just a little about these theorists will help build an effective personal philosophy of

teaching. The brief sketches of key constructivist learning theories and theorists illustrate the thinking that has shaped and inspired many of the tips, principles, and practices in this book.

To encourage thinking about the future of learning environments, one section highlights the differences between a mostly digital course and one that is mostly face-to-face. We then provide an overview of the four phases of a course—course beginnings, the early middle, the late middle, and the closing weeks—and the happenings, themes, and behaviors for each of these phases.

In summary, this chapter serves as a foundation to Chapters 6 through 11, where you will find tips, suggestions, and guidelines on how to create and deliver an efficient, effective, and satisfying course.

Preparing to Teach in the Online and Blended Environments

As the demand for online learning has increased, deans and department chairs have often turned to their faculty and assigned them to online courses without much support or training. The expectation is that faculty will use whatever resources are available from technology centers or teaching centers and learn to use the necessary tools: learning management systems, synchronous meeting tools, and tools and processes for working with audio, video, and image media. Many institutions do acknowledge the need for time and assistance, but as the tools are becoming easier to use and more widely dispersed generally, getting time and assistance to learn how to teach online—and to redesign a course for the new online environment—is increasingly difficult. These expectations reflect a belief that teaching online is not much different from teaching face-to-face. This is not the case. Teachers who are effective face-to-face can be effective as online teachers, but it is not automatic and it does not happen overnight.

Uh-Oh. What Did I Say I Would Do?

We've all done it at one time or another: agreed to do something and then found ourselves wondering how we were going to do it. Faculty are no different: they agree to teach an online or blended course, and minutes later, they often wonder what they have agreed to do. They can also experience confusion and even fear, feeling clueless about what the first step might be. Even experienced faculty feel a little nervous about teaching online for the first time. Some faculty may feel alone, thinking that everyone else knows exactly how to prepare and teach online, while they don't seem to know

what questions to ask or of whom. This experience can be truly traumatic when directed to take their courses online midterm with only days' notice.

Well, how hard can it be? A common practice for teaching face-to-face is to use the syllabus and notes from someone who has taught the course before. This happens—as it did with me—when a mentor hands a new instructor a large binder with his notes and says, "Go forth and teach." When preparing a new course, the strategy is a bit more complex. The instructor must determine the goals and learning outcomes for the course, define the content of the course, review textbooks or resources that map to the learning outcomes, and plan the assessments, assignments, and experiences so that students achieve the learning outcomes. Do the steps in preparing an online or blended course map to these steps, or is there more to do? This chapter answers these questions.

Is This You?

The current cadre of faculty teaching online includes the following major categories: a tenured faculty member with decades of teaching experience; an assistant professor facing the need to teach, do research, and meet tenure requirements; an untenured faculty member with a heavy teaching load; and a part-time adjunct with content expertise and a touch of teaching experience. Which are you? Check below.

You have been teaching for 5, 10, or even 20 to 30 years. You are an expert in your subject area, but not in technology or in the pedagogy of how to ensure learning in different environments. You wish you had someone who could walk you through the steps in preparing an online course. You wish you knew which of your face-to-face teaching strategies and behaviors will work well online and what tools, behaviors, and strategies you need to learn.

You are a tenure-track faculty member who must focus on meeting tenure requirements. You do not have the time or the energy to develop all the new skills associated with teaching online. You wish there was a way to reduce the amount of time and energy spent teaching, but you also would like the learners in your online courses to enjoy learning with you. You have been assigned to teach your course online as part of a larger program degree online offering. Are there ways to teach online but within defined time and technology knowledge parameters?

You are an adjunct faculty member who will be teaching an occasional course online. In a weak moment, you volunteered. You are excited about the opportunity to teach a course online because you enjoy teaching; you

enjoy the dialogue and relationships you build with students, but you don't enjoy the hassles of getting to campus and parking late at night. How can you—with limited time and expertise—create and develop an online course that students will love?

This book can help you achieve your goals. But to get us started—just what is a course, anyway?

The Definition of a Course

We often assume that as faculty, we know what a course is and what pedagogy, the study of teaching and learning, is. But do we? Sometimes it is helpful to review the origins of the terms that we use every day. Particularly as we move to new environments, assumptions as to how we structure teaching and learning, the purposes of learning, and the resources and time for learning are worth a new look.

For example, the following definition of *pedagogy* by Basil Bernstein, a British sociologist and linguist, captures the key elements of the teaching and learning experience. It also suggests some interesting possibilities as to the means of instruction other than the faculty member, particularly in our world of learning objects, tutorials, simulations, and mobile everything. The italics highlight the key elements to consider.

> Pedagogy is a sustained process whereby *somebody(s) acquires new forms or develops existing forms of conduct, knowledge, practice and criteria from somebody(s) or something* deemed to be an appropriate provider and evaluator. Appropriate either from the point of view of the acquirer or by some other body(s) or both [Bernstein, in Daniels, 2007, p. 308].

This definition highlights three essential elements of teaching and learning: (1) a learner, (2) someone or something appropriate who is guiding or directing the learner, and (3) the acquisition of attitude, knowledge, or practice by the learner. The element of "someone or something" leaves open the possibility of learning being guided by a "something," which might include resources such as texts, tutorials, simulations, virtual worlds, or even robots. This will be very common in the future. It is also worth noting that pedagogy, as defined here, requires a *sustained process,* which assumes a context, that is, a place of learning. In higher education,

a course provides that context and the sustained process is a series of learning experiences in a course.

This leads us to the following operational definition of a course that captures the elements of learners and their experiences, mentoring and assessment by an instructor, time, and earned credit or record of some type.

> A course is a set of learning experiences within a specified time frame, often between 6 and 15 weeks, in which learners, mentored by an instructor, expect to develop a specific set of knowledge, skills, and attitudes. Learners are then assessed as to whether they achieve these goals and are assigned a grade for academic credit.

This description of a course provides the backdrop for a course design that focuses on a learner and his or her learning outcomes.

The definition of a course varies depending on your role either as a student or instructor. From a student perspective, a course is a set of requirements and expectations, often including meetings, that results in learning new knowledge, skills, or attitudes and counts toward a degree or certificate that certifies a certain level of competency or skill. Students often get stressed regarding the time needed to complete course requirements and develop the competencies required to earn credit.

From an instructor's viewpoint, teaching a course requires time and expertise over a specific span of time. A common faculty concern is a question of workload: "How much time does it take to design, develop, and deliver a three-credit online course, and will I have time for my other responsibilities?" Generally, a three-credit campus course represents 20–25% of a full-time faculty's workload, or about 8–10 hours a week. Thus, after an initial investment of time, developing new habits, resourcing of tools and materials, and completing course redesign, the goal is that an online course will not require more than 8–10 hours a week of a faculty member's time. Is this possible? Yes.

Some of the preparation and required tool learning is dependent on the percent of a course that is online and the percent that uses the traditional face-to-face model with an online component; that is, a blended course. The definition of whether a course is an online or blended course is addressed in the section on **Types of Online and Blended Courses**. Preparation effort and time are also dependent on the teaching and assessment strategies used in achieving student outcomes.

How Do Online and Blended Courses Differ from Traditional Courses?

The differences between traditional courses and online and blended courses are getter smaller and smaller for two reasons. First of all, online meeting tools have made synchronous meetings and gatherings much easier. Faculty and students can interact in real time, mimicking many of the interactions in a traditional classroom. Secondly, knowledge about how we learn from brain research has spurred the development of effective active teaching and learning strategies, no matter where we are teaching or learning.

There still are significant differences that we need to address, however. These differences are discussed in the following section focusing on the four key elements of teaching experiences—learner, faculty mentor, content, and environment, plus the assessment element.

1. First of all, **the faculty role shifts to increased coaching, guiding and mentoring.** In online remote experiences, there is much less "telling" on the part of the instructor. Rather than preparing 50-minute lectures, instructors prepare short concept introductions and challenging, concept-focused discussions, monitor discussions, manage student interactions, and support students' creative work. This means that an instructor assumes a predominately coaching, mentoring, guiding, and directing role. Constructivist theory posits—and research supports—that learners must construct their own knowledge structure. It is more effective for students to follow their own lines of thinking and inquiry by immersing themselves in resources and collaborating and talking with peers, rather than listening to the delivery of content from an instructor for long periods. Research supports that lecturing alone, without periodic questioning, interaction, or discussion, is an ineffective way of learning. In most lectures, learners are too passive for much higher-level learning to occur (Wieman, 2008, 2014; Svinicki & McKeachie, 2013; Freeman et al., 2014; Dede, Richards, & Saxberg, 2018). This shift means that you as an instructor do not have to invest time preparing in-person lectures. Your teaching prep time shifts to preparing recorded or written mini-lectures, resource introductions, facilitation and community-building experiences, and monitoring and guiding students.
2. **Learners are more active in directing and choosing their own learning experiences.** Course design is the major influencer of how actively students direct their own learning, and online course designs encourage

student choice and personal learning decisions. Learners' dialogue and activity are often higher in online courses. Learners must do more thinking, writing, doing, sharing, reflecting, collaborating, and peer reviewing as part of a community of learners. Students often come to a campus class without completing the reading assignment and expect that the instructor will enlighten them, saving them time. Learners in an online course cannot hide passively. If they have not prepared and processed the content prior to posting their discussion responses, that lack of reading preparation is evident to everyone. Learners are therefore motivated to complete at least a portion of the readings to interact well with the others.

3. **Content resources are flexible and almost infinite.** This content characteristic is now shared with most campus courses. The main distinction is that students in online and blended courses likely use a greater variety and sourcing of content resources. This is probably linked to the self-direction and choice options described earlier. The reality of almost infinite resources for content has pros and cons for all students. Self-directed students have more freedom, although not necessarily more time, to search out and use content resources that support effective building of their own knowledge structure. At the same time, the abundance and diversity of content of all types can lead students to process specific course content less deeply. Also, as most content resources are digital and mobile, learners have many more options. Too much flexibility can be overwhelming, so establishing a weekly rhythm with regular, rigorous milestones is essential. In addition to the usual mix of required, highly recommended, and other desirable resources, students may be identifying and creating additional resources. The core learning principle on content in Chapter 2 discusses strategies for dealing with this abundance of content.

4. **Learning environments for gathering and dialogue are primarily asynchronous with occasional synchronous meetings.** Online and blended class discussions are primarily asynchronous—available at different times depending on the learner's physical location, rather than synchronous in real time at the instructor's location. Since online discussions are asynchronous and dependent on learners' work, there is an expectation that learners reflect on what they have learned from the resource assignments before they come to class (online) to participate in the course activities, such as posting their reflections in the discussion areas. Online classrooms now provide opportunities for

synchronous gatherings, but good online practice uses these real-time gatherings for consensus-building, question-and-answer sessions, peer critiques, collaborative project work, and presentations.

5. **Assessment is continuous.** The best type of assessment in online courses is continuous and multi-phased rather than episodic and concentrated (Moallem, 2005; Conrad & Openo, 2018). This is pedagogically beneficial and makes cheating and other forms of fraud more difficult. Assessment in any course improves when instructors get to know learners as individuals and invest time in coaching and mentoring. In online and blended course designs students also get to know themselves as learners and ideally benefit from other students' learning work. Most online course assessments are open book tests and do not require proctoring, which eliminates a whole range of administrative and technological challenges. Assessment in online and blended courses generally uses low-stakes automated quizzes; frequent, regular postings in discussion forums; short papers; case studies; and customized projects.

Although these are the primary differences in online and blended courses versus traditional, all courses are still more similar than different. With the growing trend of blended courses combining online and traditional elements, all courses are actually becoming even more similar. This means that a good way of beginning your own personal growth toward being an expert online instructor is to shift your campus course to a blended environment that combines online, technology-rich activities and resources with active learning strategies that involve the class community.

Types of Online and Blended Courses

Table 1.1 describes four types of courses that cover most variations of courses. The first type listed is the traditional face-to-face course that meets regularly in a shared physical space. In the first edition (2010) of this book, this type of course had virtually no digital components. We are now rapidly approaching a time in which there are no traditional face-to-face courses; the traditional course now uses technology tools of all kinds to communicate and distribute course documents, such as syllabi, readings, and for managing 24/7 communications. Many traditional courses now also use technology tools when normal campus operations need to be suspended due to severe weather or other emergencies. Many institutions now set up a learning management system (LMS) course site for all courses, whether an instructor plans to use the course site or not.

TABLE 1.1
Types of Courses

Proportion of Content Delivered Online	Type of Course	Typical Description
Zero to 14%	Traditional face-to-face campus course	Course with little or no content delivered online; regular synchronous gatherings; content delivered via in-class meetings and readings, and learners are assessed with proctored tests, papers, or projects. The course may use a course site for distribution of materials and for quizzes and for communications. Traditional courses often include labs.
15 to 39%	Lightly blended or hybrid course; also called flipped, or synchronous-distributed or blended synchronous	Course that uses technology to facilitate what is essentially a face-to-face course. Uses an LMS system for distribution of course materials, assignments, and recorded lectures. Online activities augment classroom experiences. Design is similar to face-to-face courses with an emphasis on synchronous class discussions. The number of face-to-face meetings remains similar to traditional courses.
40 to 79%	Blended or hybrid or hyflex	Course that blends online and face-to-face delivery. A substantial proportion of the content is delivered online; typically uses asynchronous forums for discussions and has some, but fewer face-to face or synchronous meetings. Essential difference is the time for face-to-face synchronous meetings is reduced and replaced by online activities.
80% or more	Online/Remote	A course where most or all of the content and activities take place using technology tools. Some courses and programs feature occasional in-person gatherings to promote community and networking. With the proliferation of easy meeting tools, these courses regularly include synchronous meetings.

Note: Percentages were changed in this edition to reflect changing practices in blended, flipped, and hybrid courses and trends.
Source: Adapted from Boettcher and Conrad, 2004; Allen and Seaman, 2008; Sener, 2015.

The next type of course is called lightly blended or hybrid, or other terms combining synchronous, flexible, or distributed courses. We wish we had a better term for these courses, but this category tries to capture the fact that the percentage of time for face-to-face meetings is decreasing and that more teaching and learning experiences are designed and offered using digital tools and resources. Courses that are called "flipped" generally refer to a model where lectures are digital and available asynchronously 24/7 and face-to-face gatherings are used for discussion and collaborative problem solving.

The third type of course is one firmly planted in the blended or hybrid mode. In blended courses, the times that teaching and learning experiences are synchronous using shared physical spaces might be a two- to three-hour session every two or three weeks. All other teaching and learning discussion, brainstorming, and engagement are online, often using the tools and spaces of a learning management system.

The fourth category of online courses includes those courses in which most or all of the content is delivered online and which rely very heavily on asynchronous discussions and occasional synchronous meetings. All faculty-learner dialogue, interaction, assessment, and community building are fully online.

Note that the description of the four types of courses has been shifting over the last 15 to 20 years. As noted earlier, we are rapidly approaching a time in which there are no totally traditional face-to-face courses. Rather, all courses will use some digital gathering and communications tools and spaces such as those offered by learning management systems.

The table is intended to serve only as a way of talking about the type of course you will be teaching. For example, the table defines an online course as having few face-to-face or synchronous meetings, but many graduate programs are designed with frequent synchronous digital gatherings and occasional face-to-face gatherings for introductory, assessment, or celebratory meetings. Some research (Means et al., 2010) suggests that the preferred and most effective model, if possible, is a course that combines the use of asynchronous, synchronous, and face-to-face gatherings.

The tips offered later in this book can be applied or adapted to any type of online or blended course.

The Four Phases of a Course

Now that we have discussed how courses differ, let's consider how they are the same. Each course has a minimum of four distinct phases: Course

Beginnings, Early Middle, Late Middle, and Wrap Up. Chapter 5 describes in detail what is happening in each of these phases and delves more deeply into the themes, behaviors, and tools for accomplishing the goals of each of these phases.

Learning Theories and Theorists

The principles, practices, and tips in this book are grounded in learning theory, principles, and research. More specifically, the tips in this book build extensively on constructivism, the philosophy that learners actively construct and create their personalized knowledge structures from the interaction of three inputs: what they already know; what they pay attention to in their environment, including language, people, and images; and what they process deeply. The constructivism philosophy is the foundation of how we view learning and how our minds work. Closely related to constructivism is the social theory of learning, which emphasizes the role of the context or environment of learning.

Figure 1.1 presents a few of the significant theories and theorists that inspired this integrated view of constructivism and social (situated) learning. These sketches of key learning theorists are in no particular order other than generally chronological. We have also attempted to show relative relationships and linkages among these theorists. There are many other truly significant theorists and theories, but all cannot be profiled in this chapter. However, many of these others will be mentioned in the principles, practices, and tips.

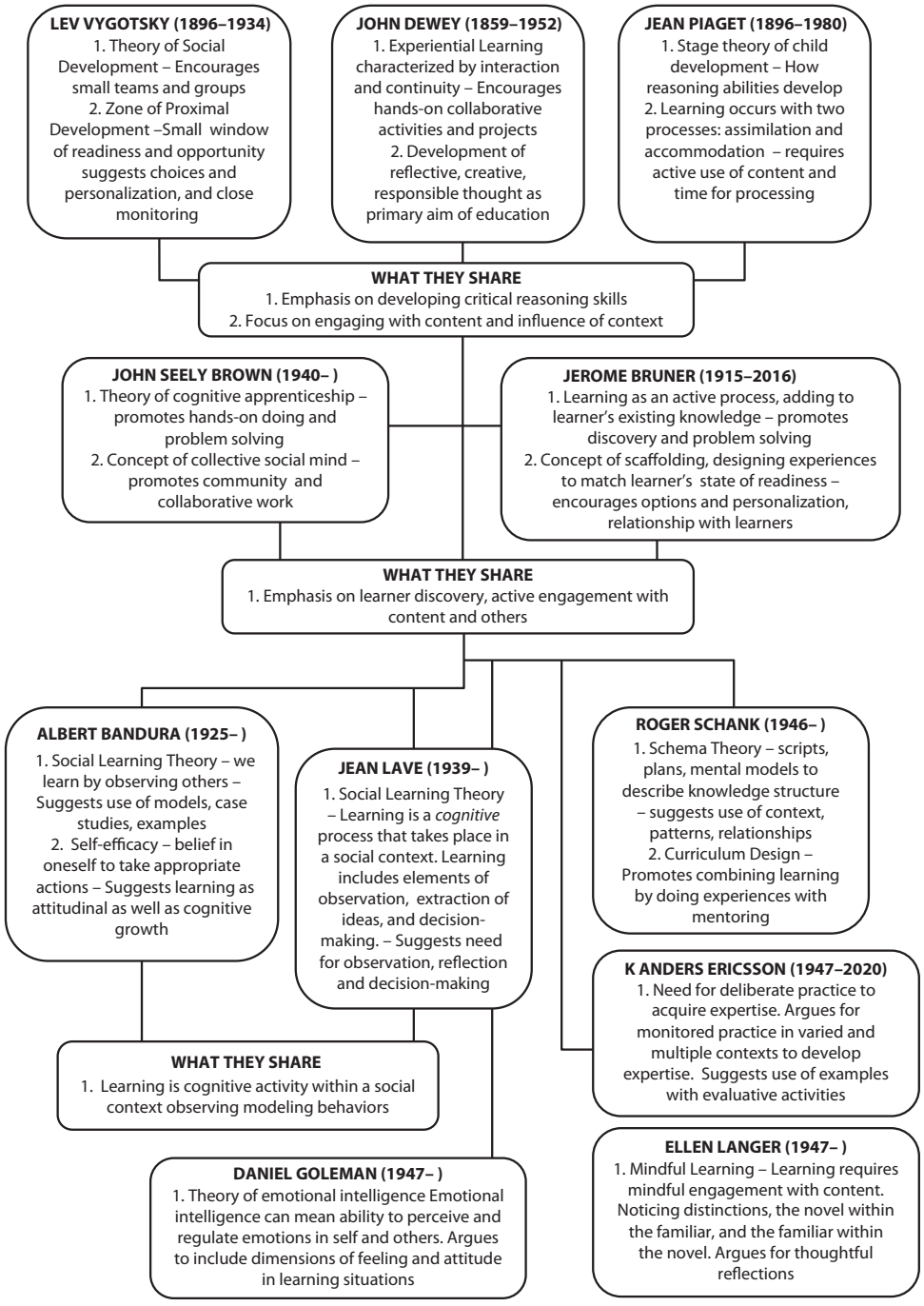
For more information on the learning theorists mentioned here and any others that are not, the Theories into Practice database at www.instructionaldesign.org is an excellent resource. The content in this instructional design resource was created by Greg Kearsley and Richard Culatta—both long-term educational innovators—with input from many others. The database contains descriptions of over 50 theories relevant to human learning and instruction, descriptions of learning concepts, and important domains of learning.

Lev Vygotsky (1896–1934): Theory of Social Development

Vygotsky is a twentieth-century Russian psychologist, linguist, and philosopher whose work became accessible in the mid-1960s when it was translated into English. His theory is usually categorized as a social development theory because a major theme in his theory is that social interaction plays an essential role in the development of cognition. His

FIGURE 1.1

Influential Learning Theorists



work also included significant investigations into the processes of concept acquisition that led to a study of problem-solving strategies. Perhaps his best-known concept is the zone of proximal development (ZPD), which defines for each individual the state of readiness for learning. The formal definition of the zone is "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). It is always interesting to think about the similarities of Vygotsky's thinking with his contemporaries, the Swiss psychologist Jean Piaget and John Dewey, the giant of American psychological thought. Van der Veer (1996) suggests that Vygotsky and Piaget definitely were in contact with each other, but that language and geography barriers prevented regular contact to resolve differing perspectives. What is worth focusing on, we believe, are their shared core concepts of the staging of learning and the importance of context in learning.

John Dewey (1859–1952): Experiential Learning

John Dewey, an American philosopher, psychologist, and educational reformer, was a major proponent of experiential learning in the first half of the twentieth century. He foresaw an active and collaborative student experience that, a hundred years later, we finally have the tools and shared collective acceptance to implement. Dewey emphasized the unique and individualized nature of interaction in the learning experience. He believed, as do many constructivist theorists, that learners construct new knowledge based on previous knowledge and that experiences are unique to each learner. Dewey promoted the active participation of the learner in the learning environment, and he championed the role of an instructor as a facilitator or mentor.

Dewey focused his ideas on developing what he believed to be the aims of education: the development of reflective, creative, responsible thought. In his 1933 treatise, *How We Think,* Dewey said, "We state emphatically that, upon its intellectual side, education consists of the formation of wide-awake, careful, thorough habits of thinking" (p. 78). This single sentence, which captures the essence of Dewey's thinking, sets forth one of the ultimate goals of education, that of critical thinking. Another key concept in Dewey's work is that interaction and continuity are the two primary characteristics of effective teaching and learning experiences. The characteristic of interaction reinforces the importance of dialogue, communication, and engagement in learning; the characteristic

of continuity reinforces the perspective that the individual learner must be viewed as the key design element.

Jean Piaget (1896–1980): Theory of Genetic Epistemology or Origins of Thinking

A twentieth-century Swiss psychologist and natural scientist, Piaget is best known for his stage theory of child development, beginning with the sensorimotor stage (0 to 2 years), preoperational thinking (3 to 7 years), concrete operations (8 to 11 years), culminating in abstract thinking in the formal operations stage (ages 12 to 15 years). Piaget called his theoretical framework "genetic epistemology" because he was primarily interested in how cognitive knowledge, including moral reasoning, develops in humans. In his view, cognitive development consists of a constant effort to adapt to the environment in terms of the processes of assimilation (adding information to existing knowledge structure) and accommodation (modifying a knowledge structure to accommodate new information). In this sense, Piaget's theory is similar in nature to the constructivist perspectives of Vygotsky and Jerome Bruner (whose profile follows), including an emphasis on context and environment. Another concept central to Piaget's theory is cognitive structures, which he defined as patterns of physical or mental action that underlie specific acts of intelligence and correspond to stages of child development. These cognitive structures are similar to the schemas of Roger Schank and the concepts of mental models (Schank & Abelson, 1977). Piaget's theories have been used extensively in the development of logic and math programs, providing a planned sequence or scaffolding of instruction, from simple to more complex. Seymour Papert, the MIT mathematician who developed the Logo programming language for children, worked with Piaget in the 1950s and 1960s. Papert expanded on Piaget's thinking with a focus on how children build knowledge structures through a progressive internalization of actions, or making things.

Jerome Bruner (1915–2016): Constructivism

Jerome Bruner was an American educational psychologist and research fellow at the New York University School of Law. As a constructivist, Bruner's work incorporates strong support for discovery learning. He believes that mastery of the fundamental ideas of a field involves not only the grasping of general principles but also the development of an attitude toward learning and inquiry, toward guessing and hunches, toward the possibility of solving problems on one's own (Bruner, 1963).

As a constructivist, Bruner emphasizes the active process of discovery and trial and error through which a student can uncover the interrelationships of concepts and ideas (Clabaugh, 2009). The learning goal of attaining mastery in a field is often now expressed as, to "think like a scientist, engineer, entrepreneur, manager."

One of Bruner's best-known statements and one of my favorites is that any subject can be taught to any child at any stage of development if it is presented in the proper manner (Bruner, 1963).

Another oft-used quote is about the usefulness of knowledge. Bruner (1963) stated, "The first object of any act of learning, over and beyond the pleasure it may give, is that it should serve us in the future. Learning should not only take us somewhere; it should allow us later to go further more easily" (p. 17). The focus of this thought is twofold. First, Bruner emphasizes that learning should be purposeful; for example, developing skills to serve us in the future. Second, every time we learn something, we add links or nodes to a cognitive structure on which we can build and link to later; as we grow these connections and nodes, we are able to learn more and to learn faster. In this view, the more one knows, the more one can know, and know quickly. Also attributed to Bruner is the concept of scaffolding. He observes that it takes a skilled teacher to structure a learning experience so that learners discover new knowledge on their own. This means "scaffolding the task in such a way that assures that only those parts of the task within the child's reach are left unresolved, and knowing what elements of a solution the child will recognize though he cannot yet perform them" (p. xiv of 1977 edition of Bruner's *The Process of Education*). This statement reiterates the importance of design for successful learning experiences.

Bruner's core belief is often summarized as follows: "Learning is an active process in which learners construct new ideas or concepts based on current/past knowledge" (http://www.instructionaldesign.org/theories/constructivist.html).

John Seely Brown (1940–): Cognitive Apprenticeship

John Seely Brown is part scientist, part artist, and part business strategist. His work encourages collaborative innovation in learning and business within our culture of continuing change. As early as 1997, Brown envisioned how "advanced multimedia information systems" would make it possible to plug into a "collective social mind" (Brown, 1997), laying the groundwork for our thinking about communities in online learning. Brown explored similar ideas about "learning communities capable of generating, sharing, and deploying highly esoteric knowledge" (p. 127) in *The Social*

Life of Information, the book he coauthored with Paul Duguid in 2000. His work on cognitive apprenticeships (Brown, Collins, & Duguid, 1989; Collins, Brown, & Holum, 1991) and learning environments (Brown, 2006) examines how technologies can support problem solving and hands-on learning. A 2009 article explores how activities within virtual worlds create a "sense of shared space and co-presence which make real-time coordination and interaction not only possible, but a necessary part of the world" (Thomas & Brown, 2009, p. 37). Brown's latest initiative focuses on the maker movement, which leverages technology and the world economy for making anything and everything. What is a maker? "Broadly, a maker is someone who derives identity and meaning from the act of creation" (Hagel, Brown, & Kulasooriya, 2014, p. 3).

Our students are maturing in the midst of this wave of making; if we can find ways to incorporate "making" into our courses, students will engage with energy and enthusiasm.

Brown's 2011 book coauthored with Doug Thomas (USC), *A New Culture of Learning*, continues exploring themes of how play, innovation, and imagination are the cornerstones of learning. These themes are highlighted in tips encouraging developing the skill of questioning, in hands-on learning, and in the nurture and support of curiosity. The tip on gamification (CW 7) explores strategies for engaging learners deeply as well.

Roger Schank (1946–): Schema Theory

Roger Schank is one of the influential early contributors to artificial intelligence and cognitive psychology and continues as a major contributor to learning theory and the building of virtual learning environments. The central focus of Schank's work has been the structure of knowledge, especially in the context of language understanding. He is most well known for his work on schema theory—the concepts of scripts, plans, and themes to handle story-level understanding (Schank & Abelson, 1977). Schema theory is similar to the concept of mental models, a way of describing knowledge structures that support predicting and inferring information from incomplete information. His work in this area has been extended into developing programs to enable computers to understand and predict what might be coming next.

Schank continues working on story-centered curricula that simulate real-life situations that encourage students to explore their own interests with guidance from skilled mentors. Why is Schank's work important to learning tips? His work encourages categorizing content knowledge into patterns, relationships, and dependencies. If we identify patterns

and relationships, our knowledge structures will be more useful and memorable, and we will be able to transfer and use knowledge in novel situations more quickly. He and John Seely Brown share beliefs about immersing students into learning with a focus on problem solving, case studies, and authentic challenges.

Albert Bandura (1925–): Social Learning Theory

Albert Bandura is best known as the psychologist responsible for theories of observational learning that helped bridge learning from behaviorism to social learning theory. While behaviorism depends on learning theories of reward and punishment, Bandura researched the power of observational learning, that children could learn from simple observation of others. He is also known for the construct of self-efficacy, the belief in oneself to be able to take appropriate actions.

What does his work contribute to learning design? Observational learning theory suggests the use of models, case studies, examples, and videos of behaviors and actions. The concept of self-efficacy suggests that learning is multidimensional—not just cognitive, but also attitudinal—foreshadowing the emotional intelligence focus of Daniel Goleman (see later profile). His work also continues the social learning theory of Vygotsky and the situated learning theory of Lave that follows.

Jean Lave (1939–): Situated Learning Theory

Jean Lave, University of California, Berkeley, is a social anthropologist whose learning theories emphasize the role of the context in which learning occurs. Her situated learning theory suggests that classroom activities that are abstract and lack context are not effective. Situated learning theory is similar to social learning theory, which describes learning as a cognitive process that takes place in a social context. Her theories may go to the extreme of social learning, as she says, "participation in everyday life may be thought of as the process of changing understanding in practice, that is, as learning" (Lave, 2009, p. 201).

What does her work contribute to learning design? Situated learning theory includes elements of observation, attention to and extraction of ideas, decision making, and reflection. This view of learning sees social interaction as a critical component encouraging learners to become a community of learners espousing certain beliefs and behaviors. Her work supports the role of community in learning.

K. Anders Ericsson (1946–2020): Expert Performance Theory

K. Anders Ericsson was a Swedish psychologist widely recognized for his theoretical and experimental research on expertise. One of his most well-known contributions is the framework for development of expertise and the need for "deliberate practice" (Ericsson, Krampe, & Tesch-Romer, 1993). Deliberate practice is more than simply practicing a skill over and over. In Ericsson's words, deliberate practice "entails considerable, specific, and sustained efforts to do something you can't do well—or even at all. Deliberate practice involves two kinds of learning: improving the skills you already have and extending the reach and range of your skills. This type of practice usually requires a well-informed coach not only to guide you through deliberate practice, but also to help you learn to coach yourself" (Ericsson, Prietula, & Cokely, 2007, p. 2).

What does this mean for designing learning? It suggests the need for designing monitored practice into varied and multiple contexts to develop expertise. It also suggests the use of many examples across and within a discipline to provide a range of experiences with evaluative activities.

Ellen Langer (1947–): Theory of Mindful Learning

Ellen Langer, a professor of psychology at Harvard, has applied the concept of mindfulness to any situation requiring decision making. She defines mindfulness as having three characteristics: continually creating new categories, openness to new information, and an implicit awareness of more than one perspective (Langer, 1997, p. 4). Mindfulness might be a close relation to critical thinking, encouraging teaching skills and facts set within multiple different contexts.

What does this mean for designing learning? Mindful learning means engaging thoughtfully with the content and questioning positions, values, and decisions. One strategy she recommends is to practice noticing the novel within the familiar, and the familiar within the novel. The value of mindfulness also argues for making time for thoughtful and questioning reflections.

Daniel Goleman (1946–): Theory of Emotional Intelligence

Daniel Goleman is a psychologist and journalist whose book *Emotional Intelligence: Why It Can Matter More Than IQ* (1995, 2005) launched a rethinking of the skills and traits needed for effective leadership and management. Goleman's research found that the qualities usually associated with effective leadership—such as intelligence, toughness, determination,

and vision—were insufficient. Emotional intelligence, which includes self-awareness, self-regulation, motivation, empathy, and social skill, is also needed. This work has had a ripple effect on recognizing the role that emotional and social skills play in learning.

What does this mean for designing learning? It suggests that we include dimensions of feeling and attitude in learning experiences. The buzz around this relatively new topic encourages that we return and use the 1973 affective domain work of Krathwohl, Bloom, and Masia, developed as a companion to the familiar cognitive taxonomy.

Other Theorists and Influencers

As previously mentioned, many other significant researchers, theorists, and thinkers have influenced the theory and practices behind the tips in this book. You will come to know many of them in the context of the tips. Before leaving the topic of key influencers, however, we want to call attention to the work of Bransford, Brown, and Cocking and the Committee on Developments in the Science of Learning that resulted in the 2000 book, *How People Learn: Brain, Mind, Experience, and School*.

This committee reviewed decades of learning research and identified five themes that are changing our views on the theory of learning:

- Memory and the structure of knowledge
- Problem solving and reasoning
- Early foundations of learning, attempting to answer, "Who knows what, and when?"
- Metacognitive processes and self-regulatory learning processes
- Cultural experience and community participation

In continuing work, their 2018 report *How People Learn II: Learners, Contexts, and Culture*, available free at www.nap.org, updates and expands findings including new areas on neurological processes in learning, mechanisms of learning, and influences of sociocultural factors and the structure of learning environments.

Summary—and What's Next

This chapter introduced the key concepts in getting started with online and blended teaching and learning. The big picture of the four phases of a course—course beginnings, early middle, late middle, and closing weeks—helps you envision your course as a series of learning experiences

that provide the context for you and your learners to develop a community for learning and developing skills.

With the constructivist landscape in place, the next two chapters on core learning principles and best practices will guide you as you develop new mental models, habits, and skills for teaching in online and blended environments.

Chapter 2 discusses a set of 10 core learning principles that capture most of the key principles suggested by constructivist theories and related instructional design approaches. Chapter 3 is a summary of a set of best practices for teaching online. The first edition had only 10 best practices. It has been expanded to 10 plus 4 to address key recommended practices in design and assessment.

Pause, Reflect, and Integrate

- Which of the top theorists or theories resonate with you? Name two or three.
- Which theorists influence your teaching designs? What specific changes will you make from their recommendations?