

Design Models of Teaching for the 21st Century

The demands of 21st century teaching, as described in previous sections of this chapter, require teachers to respond with great effort, thought, and resources, including a variety of high-quality tools. The models of teaching that are the focus of this text represent some of the most valuable, time-tested tools that could be included in a teacher's repertoire. In the sections that follow, we explain what the models of teaching are and why they have increased relevance in the digital era. We then make recommendations for how these models might be transformed for optimal use in contemporary classrooms through the integration of differentiated instruction practices and digital technologies. Finally, we provide a brief rationale for the selection of instructional models in this text and share other information about our unique treatment of these models.

What Are the Models of Teaching? The models of teaching, sometimes referred to as instructional models or models of learning, are specialized methods for facilitating learning. They are designed to promote specific learning outcomes related to required standards in the academic disciplines through the use of a specially orchestrated set of activities. In a lesson when an instructional model is used, learners progress through defined steps that intentionally structure and support their achievement of specific cognitive, psychomotor, and/or affective learning goals. Instructional models are distinguished from other types of instructional approaches (e.g., strategies and simulations) because they have four critical attributes, including (1) syntax, (2) a social system, (3) principles of reaction, and (4) a support system (Joyce, Weil, & Calhoun, 2009). The way the attributes of each instructional model are manifested in the model are informed by theory about learning or learners and quantified with research. The development of the models through the years has paralleled innovations, discoveries, and trends in the fields of education and cognitive psychology. Evidence of the development of the first instructional models initially appeared in educational literature during the 1960s. The first textbook on the topic was written in the early 1970s by Bruce Joyce, a teacher educator. Since this time, the number of instructional models has increased, and the variety has expanded. Most models have been developed to target a particular goal or set of goals determined by the individual or group who developed it. For example, the Concept Development model (see Chapter 7) was developed by Hilda Taba in the 1960s to expand students' understanding of concepts by challenging them to categorize, develop, extend, and refine their notions of concepts. Cooperative Learning models (see Chapter 12) were developed to promote the successful racial integration of schools. Each instructional model provides not only a specialized way to address academic content but an added value as well (i.e., attainment

of important goals that may not be stated in curriculum standards). Additional benefit is achieved through the specific structure of each model and the specialized activities through which students progress during their learning within the model. For example, in the Vocabulary Acquisition model (see Chapter 9), students not only learn targeted vocabulary words but also develop competencies for future vocabulary learning. In the Integrative model (see Chapter 13), students learn about important content materials in the academic disciplines and ways to work with data, analyze patterns, and make generalizations. The instructional models can be grouped into families consisting of multiple models that have similar goals and purposes. The social family of models promotes students' learning.

while also facilitating productive work in groups to prepare them for participation in democracy. Instructional models represent flexible, specialized tools that are time tested and based on educational research and theory. They represent some of the best ideas and approaches our profession has developed during the last century and have the promise to promote learning well into the next. Instructional Models Included in This Text From the many models of instruction available to teachers today, we have selected 10 for inclusion in this book. Those which appear have been chosen because they simultaneously address academic content while supporting contemporary learners' development of skills needed for life and work in the 21st century. In Figure 1-3, we list the models included in this text and provide a short summary that offers information about how these models respond to the demands of preparing learners for life and learning in the 21st century.

Figure 1-3 Models of Teaching in This Text

Chapter	Model	Summary	Support for 21st Century Learning
5	Direct Instruction model	A teacher-led instructional model that is useful for promoting understanding of procedures among students who gradually develop independence using new learning.	<ul style="list-style-type: none">• Fosters logical, organized thinking• Fosters independent learning of procedures• Provides practice in and application of existing knowledge
6	Concept Attainment model	A teacher-guided instructional model through which students develop an understanding of a concept by examining examples and nonexamples and by analyzing their critical and noncritical attributes.	<ul style="list-style-type: none">• Promotes discrimination and generalization• Fosters inquisitiveness
7	Concept Development model	A student-centered model that promotes understanding of concepts through inductive reasoning about examples for the purpose of grouping and classifying them.	<ul style="list-style-type: none">• Supports ability to classify, think flexibly, and make generalizations• Fosters development of organizational skills• Encourages recognition of relationships and understanding of concepts
8	Inductive model	A teacher-guided model that challenges students to recognize patterns and details in content under investigation.	<ul style="list-style-type: none">• Promotes inductive reasoning, skills of observation, and recognition of patterns and details• Allows practice with convergent and divergent thinking• Fosters interaction with and skills for making sense of content materials• Cultivates strategies for deep learning of content

continued

Figure 1-3 Models of Teaching in This Text
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Chapter	Model	Summary	Support for 21st Century Learning
9	Vocabulary Acquisition model	A teacher-guided model for teaching vocabulary in a procedural and inductive manner. The model helps students develop their own understanding of the meaning of a word(s) through analysis of the parts of the word and their meanings.	<ul style="list-style-type: none"> • Develops recognition of details, making of connections with prior knowledge, and creative thinking • Encourages development of skills for independent vocabulary learning
10	Inquiry model	A process-oriented instructional model that aims to teach students the skills, knowledge, and dispositions required for thinking systematically to answer important questions.	<ul style="list-style-type: none"> • Promotes problem-solving skills • Introduces students to scientific ways of knowing • Fosters skills and dispositions for learning to learn
11	Problem-Based Learning model	An active learning model that challenges students to learn and apply knowledge of content with problem-solving skills to meaningful problems in the academic disciplines.	<ul style="list-style-type: none"> • Cultivates application of knowledge to real-world contexts • Encourages learning of useful processes to solve problems
12	Cooperative Learning model	A model that capitalizes on students' inclination to learn socially and that promotes students' development of social skills and understanding of content.	<ul style="list-style-type: none"> • Promotes skills for productive collaboration and communication (listening and taking turns) • Teaches benefits of teamwork and cooperation
13	Integrative model	A teacher-guided model that supports students as they work to develop the ability to learn independently using various critical thinking skills. Students analyze an organized body of knowledge to develop new ideas and understandings while learning to think, analyze, and draw conclusions independently.	<ul style="list-style-type: none"> • Supports ability to draw conclusions, make connections, and formulate and generalizations • Encourages ability to examine, analyze, and make sense of large amounts of materials
14	Socratic Seminar model	A teacher-guided model that encourages development of thinking skills and exploration of ideas through the use of structured questioning with debate or dialogue.	<ul style="list-style-type: none"> • Fosters communication and collaboration skills (listening and questioning) • Develops thinking skills, including questioning, synthesis, and analysis

Instructional Models in the Past and Future Like Franklin Elementary School, the instructional models could be considered a proud part of our community's past. Over the last half century, the models have provided educators with specialized tools that have enabled them to create more effective instructional experiences. They have been valuable because of their • effectiveness in promoting student learning of academic content, • focus on developing students in specific but different learning domains, • usefulness in many settings, • support for both individual and shared student needs, and • ability to make learning more engaging. Like Franklin Elementary School, reinventing the models would make them more effective for the 21st century learner and teacher alike. The transformation of the

instructional models can be achieved in three ways: 1. Through the increased use of technology to plan, implement, and conduct assessment 2. Through the integration of differentiated instruction principles and practices within the instructional models 3. Through the goal-directed application of the models by educational designers who apply systematic thinking and processes to design instruction for their students Throughout the text, we approach the teaching models in light of these three methods of transformation. Through rich, descriptive scenarios and sample lesson plans, we demonstrate how technologies can make the models more efficient, effective, and engaging. We also explain how the models support differentiation either through the embedded strategies built into the models or through additional modifications that might be incorporated when desired. Finally, we present a reconceptualized view of how these models can empower teachers to work like educational designers and support 21st century learners in more focused and effective ways.

Teachers as Educational Designers As we have illustrated in this chapter, successful 21st century teaching will require teachers to support diverse learners as they work to meet uniformly high standards. Because rapid, continuous change is the new norm, teachers need to constantly adapt as learners, standards, learning environments, and available tools change over the course of their careers. Operating as educational designers will allow teachers to flexibly adapt and experience continued success in the constantly evolving environment of 21st century teaching. What Is a Designer? If teachers are going to be educational designers, it helps to understand first what designers are. There are many kinds of designers who work in many different fields. Most of us are familiar with the work of fashion designers, graphic designers, industrial designers, and interior designers. Designers possess knowledge of their field and competence with specialized processes and thinking skills. They use these to identify, understand, and address problems or design challenges. For example, an interior designer has knowledge of aesthetics and architecture and the ability to communicate with homeowners to learn about their needs. He or she surveys existing resources, keeping in mind budget constraints, and then redesigns a room to make it both visually appealing and functional. Designers are highly skilled professionals who can work in dynamic, real-world settings to meet multiple goals simultaneously. They are people who not only enjoy their work but also perform it with a deep sense of commitment to their profession. Designers operate at the intersection of art and science, the abstract and concrete, and identify with both the theoretical and the practical. Functioning within these unique intersections is also necessary when teachers operate as educational designers. An educational designer is a teacher who approaches

instructional planning with purpose, possesses specialized knowledge, and utilizes systematic processes to identify instructional challenges. An educational designer addresses these challenges through the skillful application of a broad repertoire of tools. This complex statement benefits from a closer look. Educational designers are teachers who can do the following:

1. Approach instructional planning with purpose. By this we mean educational designers operate with the assumption that they have control over important dimensions of their work and are aware of their decision-making authority and responsibility. They are empowered. They know and understand the standards their students must attain and approach their work with focused goals and a clear sense of purpose.
2. Possess specialized knowledge. Teachers gain knowledge through experience, research, and study. Traditional knowledge teachers possess is often organized into different domains, including pedagogical knowledge, content knowledge, and pedagogical content knowledge. Teaching in the 21st century, however, also requires new knowledge—technological pedagogical content knowledge—discussed in Chapter 3.
3. Use systematic processes to identify instructional challenges. The challenges that educational designers must address are most often related to learners and content. Use of these processes is an outgrowth of an educational designer's goal-directed orientation to practice. Systematic processes teachers use include planning and assessment, but educational designers use these processes strategically. The revised Bloom's taxonomy, UbD, differentiated instruction, and instructional design approaches (e.g., ADDIE, introduced in Chapter 2) might also be considered systematic processes useful to educational designers.
4. Address these challenges through the skillful application of a broad repertoire of tools. Educational designers have many tools. Those addressed in this text include the instructional models, strategies, and technologies. An educational designer can use the elements in his or her repertoire individually and in an integrated fashion. An in-depth explanation of these tools is provided in Chapter 3.

Why Should Teachers Function as Educational Designers? The role of a teacher is multifaceted. The most successful teachers are able to perform numerous roles simultaneously, including educator, motivator, social worker, salesperson, parent, therapist, and more, as required in their practice. As teachers develop into educational designers, they should not stop performing any of these important roles. Instead, they should approach their work with an awareness of their ability and the need to direct the important dimensions of their practice.

Teaching with this new mind-set still requires passion, dedication, hard work, talent, and drive, but it also operates with the assumption that these qualities must be focused in systematic ways

to be most productive. As educational designers' work in the instructional domain of teaching becomes more purposeful, their use of the models of teaching that we present in Part II of this book will be more fruitful. When teachers work as educational designers, they are empowered in numerous ways, such as the following:

- Educational designers know how to get to know their students. Educational designers use their specialized skills and implement systematic approaches to gain deeper understanding of their students' individual and shared needs. These approaches also help them competently analyze learner needs (e.g., using tools like needs assessments) and address them in more strategic ways using approaches such as differentiated instruction and tools (e.g., technology).
- Educational designers have a deep understanding of content. The same systematic thinking and approaches that help educational designers get to know their students also aid them in analyzing their content. Educational designers employ tools such as UbD to create curriculum plans that enable deeper understanding of content.

Educational designers learn from practice. When systematic approaches are used to design and implement instruction, teachers better understand what is going on in their practice. Such knowledge facilitates reflection and the learning that comes from it, which in turn improves their practice.

- Educational designers experience a more rewarding practice. More of their students are successful in attaining learning goals because it has been designed with their needs in mind. Students are better supported when working to attain standards and developing confidence—skills needed for their future life and learning. When student learning falls short of expectations, educational designers have the ability to figure out where the problem is and make improvements. As a result, teachers experience more ownership of the teaching process and higher satisfaction in their work. The above-mentioned details result in more learners attaining high standards with increased frequency. This results in greater professional accomplishment and personal satisfaction as well. In the remaining chapters of Part I of this text, we provide additional information to help teachers function more effectively as educational designers. In Chapter 2, we introduce the field of instructional design to emphasize the importance of adopting the design mind-set we advocate. We share one instructional design model and describe how the systematic thinking and processes used by instructional designers can benefit 21st educational designers. In Chapter 3, we introduce readers to the different types of tools that should be in an educational designer's tool set. Finally, in Chapter 4, we describe how the assessment cycle—something already in most teachers' skill sets—can be used more deliberately to promote learning for both teachers and students. The goal of Part I is to help teachers leverage the models discussed in Part II in ways that help them address the challenges of 21st century teaching.

Chapter Summary This chapter explained that the successful preparation of 21st century learners for life and work in a fast-paced, rapidly changing, digital society will require teachers to approach their work with a new mind-set, a broad skill set, and a high-quality tool set. Digital technologies, access to information, globalization, equity, and accountability are important trends that have generated ideas, movements, and reforms that influence American schools. Rigorous standards, refined conceptions about learning, and the development of systematic approaches to curriculum and instruction promote and enable efforts to serve an increasingly diverse

student population. Their readiness for life in and beyond the imagined future requires teachers to function as educational designers. An educational designer is a teacher who approaches instruction with intention and clear goals and applies specialized knowledge and skills to address instructional challenges with a broad repertoire of instructional models, strategies, and technologies. By functioning as an educational designer, teachers can optimize the instructional models presented in this text by integrating them with focused, systematic implementation; powerful educational technologies; and differentiated instruction practices.

Review Questions 1. What are some of the major trends shaping the world? How do they affect the field of education in the 21st century?

2. What are the most important characteristics of 21st century learners?
3. Why are traditional instructional models still relevant in contemporary classrooms? How might they be reinvented?
4. What is meant by the idea of “teachers as educational designers”? Define this idea.
5. Identify how being an educational designer can enable teachers to capitalize on the instructional models.

Resources •

Common Core State Standards Initiative—This site is the “official” website for this initiative: www.corestandards.org •

Differentiated Instruction 101—This screencast provides an overview of differentiated instruction: <https://vimeo.com/51259497> •

International Society for Technology in Education (ISTE)—ISTE is an international organization focusing on technology in education. It has been instrumental in establishing student, teacher, and school leader technology standards: www.iste.org/welcome.aspx •

Multicultural Education Pavilion—This site includes many resources addressing diversity in educational environments: www.edchange.org/multicultural •

National Center for Education Statistics (NCES)—NCES collects and analyzes national data related to education in the United States as well as other nations: <http://nces.ed.gov/about> •

Partnership for 21st Century Skills—This site houses the framework for 21st century learning: www.p21.org •

Universal Design for Learning (UDL), Center for Applied Special Technology (CAST)—This CAST site houses many resources about UDL: www.cast.org/udl/index.html