

GROUNDED DESIGNS FOR ONLINE AND HYBRID LEARNING SERIES

GROUNDED DESIGNS FOR  
**ONLINE  
AND HYBRID  
LEARNING**

ONLINE AND HYBRID LEARNING  
TRENDS AND TECHNOLOGIES

EDITED BY ATSUSI "2C" HIRUMI



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# Introduction

Atsusi “2c” Hirumi

Many different trends and issues face educators and instructional designers seeking to facilitate e-learning through the design and delivery of online or hybrid learning environments. In this three-book series, titled *Grounded Designs for Online and Hybrid Learning*, the first book, *Online and Hybrid Learning Design Fundamentals*, covers basic tasks for systematically designing online and hybrid coursework. The first book illustrates methods for aligning learner assessments to learning objectives, presents a framework for designing and sequencing meaningful e-learning interactions, and provides tactics for searching vast repositories of existing, sharable content objects to reduce costs and facilitate the development of e-learning materials. It also compares Web 2.0 with prior technologies used to facilitate e-learning, offers practical tools for preparing students for successful online learning, interprets laws and provides examples of how online instruction could and should be universally designed for children with special needs and concludes by discussing how e-learning may be designed and delivered to meet ISTE’s National Educational Technology Standards (NETS) for teachers and students.

The second book in the series, *Online and Hybrid Learning Designs in Action*, stresses the importance of grounding the design of online and hybrid learning environments. Based on cognitive information processing, inquiry, and experiential and game-based theories of teaching and learning, it provides concrete examples of totally online and hybrid lessons to illustrate the application of eight different instructional strategies: Gagné’s Nine Events of Instruction, WebQuests, the 5E Instructional Model, VeeMaps, Authentic Historical Investigations, Guided Experiential Learning, the InterPLAY instructional strategy, and Game-Based Learning Principles.

This third book in the series, *Online and Hybrid Learning Trends and Technologies*, looks further into several key areas that I’ve found of interest and value for designing online and hybrid learning environments. In Chapter 1, Richard Hartshorne gives examples of five pedagogical approaches and five technological tools for managing large online courses. Then, in Chapter 2, John Curry discusses practices and precautions for podcasting and provides information and links to examples of K–12 podcasts, as well as resources for creating podcasts, hosting podcasts, and integrating free music resources into podcasts. For Chapter 3, John Neely and Zane Berge look at the use of virtual worlds for engaging learners, encouraging collaboration, promoting self-directed exploration, and facilitating student-led, informal learning. Finally, in Chapter 4, Michael Barbour and Kathryn Kennedy show the reach of e-learning and contrast what’s happening across the globe by exploring the state of K–12 online learning in the United States, Canada, Mexico, Australia, New Zealand, Singapore, South Korea, and Turkey.

This three-book series is written primarily for K–12 educators, including teachers and administrators, and for instructional designers who may be creating educational materials for K–12 online and hybrid courses. However, if you teach in a college or university setting or design educational and training materials for higher education or business and industry, I think you’ll find that the fundamental principles, processes, and examples covered in these books offer insights for and apply to the design of e-learning environments across settings.

All three books are based on three fundamental premises. To increase quality (reduce variance) and design effective, efficient, and engaging online and hybrid courses, educators and course designers should make sure that they: (a) ground the design of their coursework on research and theory; (b) follow a systematic design process to align basic elements of instruction (namely, objectives, assessments, and instructional strategy); and (c) think and, whenever possible, act systemically to ensure all necessary components of the educational system are aligned and work together to facilitate e-learning.

## Grounded Design

Grounded design is defined as “the systematic implementation of processes and procedures that are rooted in established theory and research in human learning” (Hannafin, Hannafin, & Land, 1997, p. 102). Grounded design articulates and aligns theory with practice for the purpose of optimizing learning. Regardless of your underlying educational values and beliefs, grounded design provides a procedure that you can use in a variety of settings.

To facilitate the process, Hannafin et al. (1997) posit four criteria for grounded design, including:

- ▶ The application of a defensible theoretical framework clearly distinguishable from other perspectives,
- ▶ The use of methods that are consistent with the outcomes of the research conducted,
- ▶ The ability to generalize beyond one particular instructional setting or problem, and
- ▶ Iterative validation through successive implementations.

Addressing these criteria will give you a solid foundation for designing coursework and for improving your methods and materials over time. However, grounding the design of your lessons and courses does not necessarily guarantee that your students will achieve targeted outcomes in an effective and efficient manner. A number of tasks must be completed before and after you design your course to facilitate e-learning.

## Systematic Design

To create an online or hybrid course, you may or may not follow a systematic design process. Those who carry through a systematic process use the results of one task as input for subsequent tasks. For instance, an educator or instructional designer, following a systematic process, may gather and use these data as input to accomplish each task sequentially: at the outset of the course, assess the students’ performance levels and analyze the results to identify the essential skills and knowledge they have not mastered; use these skills and knowledge to generate, cluster, and sequence objectives; employ the objectives to define and align learner assessments; apply the objectives and assessments to formulate an instructional strategy; and utilize the strategy to select tools and technologies for facilitating achievement of the objectives.

Vital to long-term learning of skills and knowledge for these reasons, systematic design:

**Begins with an analysis of the target learners and desired learning outcomes.**

Such analyses are necessary for proper planning and decision making. Without these, key instructional components may be missing or misaligned.

**Provides clear linkages between design tasks.** The resulting alignment among instructional objectives, strategies, and assessments is essential for facilitating learning in online, hybrid, and conventional classroom learning environments.

**Is based on a combination of practical experience, theory, and research.** Key design decisions are informed by what is known about human learning, instruction, and emerging technologies to avoid haphazard investments in unsubstantiated fads or opinions.

**Is empirical and replicable.** To increase returns on investment, instructional materials are designed to be used more than once with as many learners as possible. The costs associated with systematic design are worth the investment because the resulting materials are reusable.

**Is generalizable across delivery systems.** The resulting materials may be used to support the delivery of instruction in conventional, hybrid, and totally online learning environments.

A number of limitations are also associated with systematic design. For instance, systematic design takes time and expertise—vital human resources that can be spent on other projects. Educators and instructional designers are rarely given enough time and support to adhere to a systematic design process. Interim products (e.g., paper-based design documents) are not flashy and may not capture the attention of key stakeholders who are important for supporting designers and their efforts.

Many also associate systematic design with ADDIE (analysis, design, development, implementation, and evaluation), a well-known model for producing training and educational programs. The military and corporations have used the ADDIE model successfully across the United States and around the world for decades. Variations of ADDIE (see, for examples, Dick, Carey, & Carey, 2009; Smith & Ragan, 1999) continue to be adopted by educators and instructional designers to produce educational and training materials in a systematic fashion for the reasons mentioned earlier. Critics of ADDIE, however, argue that it is too linear, too time-consuming, too resource intensive, and too inflexible, failing to accommodate changes in learners' needs and instructional materials during development and delivery. Critics also point to poorly designed instructional materials said to be based on the ADDIE process that are not effective, efficient, or engaging. Yet, experienced instructional designers realize that more often than not, ineffective, inefficient, and unappealing instruction result from inappropriate or inadequate applications of ADDIE (e.g., people cutting corners due to lack of time, training, or resources) rather than inherent problems with the model itself. ADDIE also does not have to be applied in a linear fashion, which is a common myth; spiral and other iterative models of ADDIE are widespread.

Experts now advocate what are referred to as agile approaches to design, such as the successive approximation model (SAM) that further accentuates the iterative and collaborative nature of design (Allen, 2012). Figure I.1 depicts what Allen refers to as the extended successive approximation model (SAM2) for projects that require significant content or e-learning development and more advanced programming.

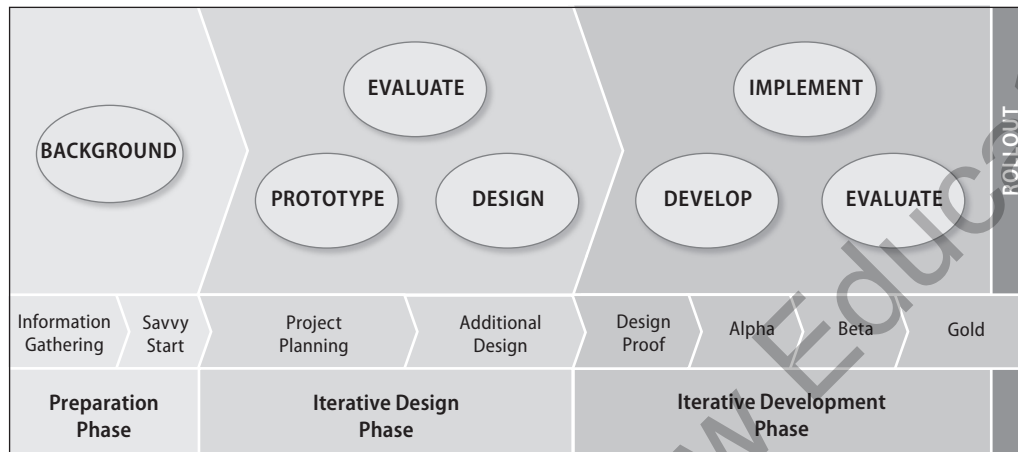


FIGURE I.1 ► The three-phase extended successive approximation model or SAM2 (This figure is reprinted from Allen, 2012, with permission from ASTD Press.)

Whether you use ADDIE, SAM, or other processes, it is important to remember that a focus on tangible results without sufficient planning or testing may result in a false sense of economy. The impact of poorly designed lessons may not be evident until aspiring learners are asked to perform key tasks for which they are not prepared. Dissatisfied learners may also drop out and warn others to avoid your program. The bottom line is that you should use a process that ensures the alignment of objectives, instructional strategies, and assessment, which leads to the development of instructional materials that consistently result in desired learning outcomes on time and within budget. Systematic design (as discussed in this series' first book and as advocated in the second and third books) helps ensure alignment between and among fundamental instructional elements and reduces variance of quality without inhibiting educators' and instructional designers' creativity if applied in an appropriate manner. Nevertheless, grounded and systematic design may still not be sufficient for ensuring that all students achieve your targeted learning outcomes.

## Systemic Thinking and Action

Well-designed instructional materials and coursework are essential but not necessarily sufficient for facilitating e-learning. In an online environment, an instructor may not be readily available to fill in gaps and make up for inadequacies in the instructional materials. Students may not be able to drop what they are doing to meet with advisors to address logistical issues. If some students cannot readily register for and access coursework, acquire materials, submit assignments, obtain feedback, receive advisement, access technical support, and otherwise navigate the training or educational system, it doesn't matter how excellent the instructional materials are because

learning may not occur. Students may actually prefer an online program with high-quality student services (user-friendly; convenient; and responsive to learners' requests by advisors, tech support personnel, and instructors) and mediocre course materials to a program with mediocre student services and high-quality online coursework. In these ways, today's students resemble savvy consumers who value convenience and quick feedback over the educational quality of their courses.

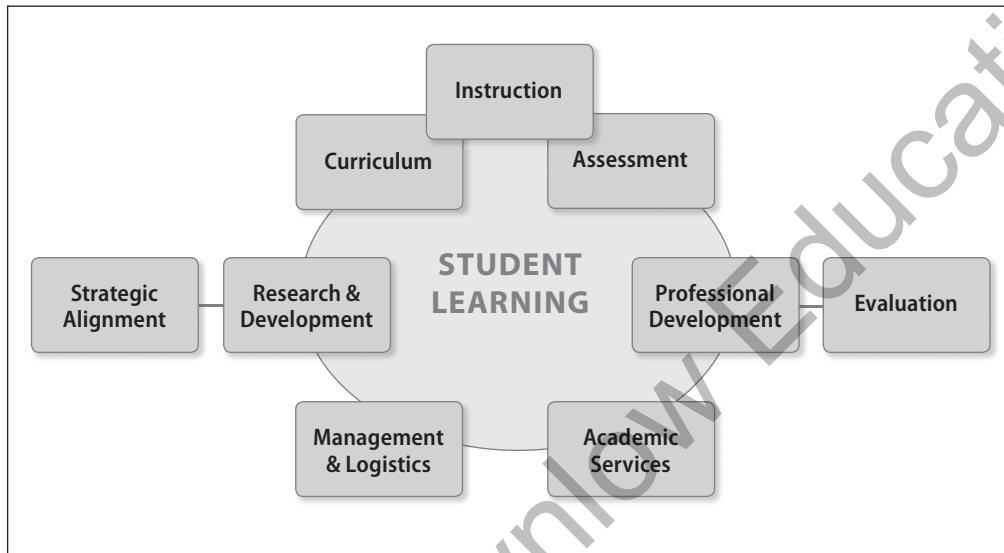


FIGURE I.2 ► e-Learning system components

To establish effective online and hybrid programs, educators must view e-learning as part of a larger system that consists of a set of functional components that must all work together to achieve a common goal. Figure I.2 depicts nine functional components of an e-learning system that must work together to facilitate student achievement (Hirumi, 2000, 2010). Figure I.2 also highlights the focus areas of this book series: *instruction designed to facilitate achievement of specified outcomes*, along with two closely interrelated components—*curriculum* and *assessment*.

The nine functional components of an e-learning system are the following: (1) strategic alignment, which aligns the mission and plans of the e-learning system with the mission and plans of the larger educational institution, organization, or system; (2) research and development, which facilitate the integration as well as the dissemination of new knowledge and information generated outside and within the system; (3) curriculum, which specifies and organizes learning outcomes; (4) instruction, which involves the deliberate arrangement of events, including tools and techniques, for facilitating achievement of specified learning outcomes; (5) assessment, which defines the methods and criteria for determining whether students have achieved the curriculum's outcomes; (6) management and logistics, which bring together the human and physical resources necessary to support the system, including strategic plans, policies, procedures, and budgets; (7) academic services, which cover a wide range of support for students, such as (but not limited to) admissions, registration, fee payment, financial aid, academic advising, and so on; (8) professional development, which ensures that all system stakeholders have the skills and



knowledge necessary to fulfill their roles and responsibilities; and (9) evaluation, which serves to improve the effectiveness and efficiency of all the system's components. Addressing each system component in detail is well beyond the scope of this book series. Rather, the three books focus on the instructional components of the system, covering different instructional strategies, tools, and techniques for facilitating e-learning, which, in turn, necessitate some discussion of curriculum and assessment.

Taken together, the three books in this series have been written to provide valuable insights for educators and instructional designers tasked with designing online and hybrid e-learning environments. I based the plans for each book's chapters on more than 15 years of experience designing and developing my own online and hybrid courses, as well as helping others in K-12 and higher education, and in business and industry across North America, South America, and the Middle East to establish and improve e-learning programs. The books' chapters are also based on the skills, knowledge, and insights of my colleagues who have also experienced many years of teaching and learning online. If you think that a systematic and systemic approach to e-learning, grounded in research and theory, may help you in your efforts to create high-quality online and hybrid courses, I encourage you to use this book to design rich, engaging, and memorable learning experiences for your students. In addition, if you do use one of the strategies included in this book, or if you know of and use other strategies grounded in research and theory to design an online or hybrid learning environment, please let me know; I'd love to hear from you. The more we can bring grounded practice and systematic design to light, the more I think we can do to increase the quality of e-learning environments and improve education for our students.

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