

Chapter 7

A Noble Eightfold Path: Novice to Expert in E-Learning and the Efficacy of Instructional Design

Julia Penn Shaw

State University of New York - Empire State College, USA

ABSTRACT

Teachers teach to the level of their ability: novices can teach students to be novices: experts can teach students to be experts. Using the Buddhist Eightfold Path as a model, this chapter explores the expert/novice paradigm as a framework for e-learning, particularly as offered through instructional design that can both scaffold novice instructors to teach to a higher level of learning, and also support experts to help students reach higher goals. Three facets of the teaching/learning dialogue are explored: expertise in a domain of knowledge (teacher), expertise in acquiring deep knowledge in a new domain through learning (learner), and expertise in the instructor/learner learning interface (instructional designer). Expert and novice teaching and learning and their relationship through instructional designers will be discussed.

EXPERTS AND NOVICES IN E-LEARNING

You probably already know much of what is presented in this chapter about advantages of instructional design in e-learning environments.

What might be different is to view it from the expert/novice perspective. The expert/novice paradigm is one more conceptual tool in the tool-bag of the teacher, the instructional designer, and/or the learner. For example, would learners respond differently to the challenges of learning within a domain if they consciously identify themselves as seeking to become experts? Are there effective

DOI: 10.4018/978-1-61350-441-3.ch007

ways to measure the characteristics identified with expertise, such as ‘flow’, ‘discipline’, etc? What are the particular hurdles of a domain expert in teaching a novice? How can the backbone of essential knowledge within a domain be built such that details fall into place effectively and with greatest retention and potential usefulness? The expert/novice paradigm opens up interesting questions and may lead to additional rich and productive dialogue between teachers, learners, and instructional designers.

Significant work has established the value of researching differences between novices and experts in various domains (Gills, 1999; Ortega, 1987; Greening, 1998; Wiedenbeck, 1985). Initially, differentiated levels of skill were used to create computerized knowledge engines or knowledge systems that replicated processes used by experts guiding novices toward higher levels of achievement in the military, particularly airline pilots (Endsley, Farley, Jones, McKiff & Hansman, 1998; Morrow, Miller, Ridulfo, Kokayeff, Chang, Fischer & Stein-Morrow, 2004) and in industry, particularly computer programmers (Perkins & Martin, 1986). As the continuum of novice to expert became better known, its relationships to other types of learning, knowledge-acquisition, and skill-building for both children and adults became a source of interest, connecting novice/expert frameworks to business applications (business management, Reuber & Fischer, 1992); social constructivist education (Meyer, 2004; Duckworth, 2006); and adult learning process (Rich & Almozlino, 1999; Meyer, 2004; Shaw, 2005).

The focus of this chapter is on using the expert/novice paradigm to improve reused (not ‘one off’) undergraduate e-learning environments through instructional design. Because of its digital base, e-learning can support knowledge-engines and algorithmic skill training. Skills which require over-practice to build expertise are especially promising e-learning applications. Expertise is shown through demonstration and application of identified sequences that are measureable against quantifiable standards. Educational domains having known skill paths (e.g., science, music, and project management) attract application of the expert/novice paradigm into e-learning (Burns, Parlett & Redfield, 2009; Keefe & Jenkins, 1997).

‘Expert’ and ‘novice’ are ends of a continuum from novice to advanced beginner, to competent, to proficient, and to expert (Dreyfus & Dreyfus, 1985), but most instructors and learners have skill-levels between these two poles. Three types of expertise are distinguished here – domain expertise, learning expertise, and instructional design expertise—as related to three roles: teacher, learner and instructional designer. This is an oversimplification, but perhaps a useful one to isolate areas that can effectively use the expert/novice paradigm to provide authentic learning for students at all levels. Table 1 outlines these relationships.

Although the continuum is a high level look at the map of the learning exchange, exposing only some of the covered territory, it highlights major features of learning. Ideal teachers and learners are experts, but because this is rare, especially in an undergraduate class setting that we

Table 1. Relationships among levels of expertise (expert/novice), areas of expertise (domain/interface/learning) and roles (teach/instructional designer/learner)

	Expert	Novice
Teaching	Domain Experts	Domain Novice
Interface	Expert Instructional Designer	Novice Instructional Designer
Learning	Expert Learner	Novice Learner

20 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/noble-eightfold-path/61687

Related Content

Digital Gaming for Cross-Cultural Learning: Development of a Social Constructivist Game-Based Learning Model at a South African University

Simone Titus and Dick Ng'ambi (2023). *International Journal of Game-Based Learning* (pp. 1-20).

www.irma-international.org/article/digital-gaming-for-cross-cultural-learning/331995

Integrating Technology and Research in Mathematics Education: The Case of E-Learning

Giovannina Albano and Pier Luigi Ferrari (2008). *Advances in E-Learning: Experiences and Methodologies* (pp. 132-148).

www.irma-international.org/chapter/integrating-technology-research-mathematics-education/4736

Disruptive Relation(ship)s: Romantic Love as Critical Praxis

Rick Carpenter (2012). *Disrupting Pedagogies in the Knowledge Society: Countering Conservative Norms with Creative Approaches* (pp. 198-211).

www.irma-international.org/chapter/disruptive-relationships-romantic-love-critical/61790

Learning Patterns of Learner's Interaction in the Learning Management Systems: A Comparative Study of China and Malaysia

Wu Bing, Teoh Ai Ping and Ye Chun Ming (2010). *Cases on Technological Adaptability and Transnational Learning: Issues and Challenges* (pp. 123-146).

www.irma-international.org/chapter/learning-patterns-learner-interaction-learning/42430

Challenges in Virtual Environment Design: An Architectural Approach to Virtual Spaces

Renata Piazzalunga and Saulo Faria Almeida Barretto (2005). *E-Learning and Virtual Science Centers* (pp. 251-272).

www.irma-international.org/chapter/challenges-virtual-environment-design/9087