

# Chapter 10

## A Journey Through the Development of Online Environments: Putting UDL Theory into Practice

**Christopher P. Ostrowski**  
*University of Calgary, Canada*

**Luciano da Rosa dos Santos**  
*University of Calgary, Canada*

**Jennifer Lock**  
*University of Calgary, Canada*

**Noha F. Altowairiki**  
*University of Calgary, Canada*

**S. Laurie Hill**  
*St. Mary's University, Canada*

**Carol Johnson**  
*University of Calgary, Canada*

### ABSTRACT

*As higher education institutions move toward offering more online courses, they need to carefully consider how the principles of Universal Design for Learning (UDL) should be integrated into the design and development of the online environments so to better meet the needs of all learners. An example of how this can occur is illustrated in the chapter with a design project that used principles of UDL in the creation of online environments for field experience courses at one Canadian university. The design team shares the journey of developing their understanding of UDL and applying these principles when creating online environments for both students and instructors. The provision of educational developmental opportunities for instructors using various strategies is also highlighted. The chapter concludes with three recommendations for future research.*

### INTRODUCTION

Contemporary higher education institutions have an increasingly diverse student population. Instructors need to take into account diverse learning needs when designing courses and learning tasks. Adding to this complexity, more face-to-face courses are being transitioned to blended or online learning environ-

DOI: 10.4018/978-1-5225-1851-8.ch010

ments. As instructors confront the challenges of transforming their teaching from face-to-face to online, they have additional opportunities to take advantage of new digital technologies and pedagogies to better meet students' learning needs.

This chapter shares the journey of a team of instructors and graduate students who studied and implemented Universal Design for Learning (UDL) in the design of online learning environments for field experience (practicum) courses. The project described provided the design team with an opportunity to develop their understanding and to apply the principles of UDL. Further, the way in which UDL guided the design of the online environments and the educational development of the field experience instructors is examined. The chapter concludes with recommendations for future research focused on using UDL for designing online environments and supporting instructors' educational development. The objectives of this chapter are the following:

- To provide an overview of Universal Design for Learning (UDL).
- To describe how a team developed their knowledge and skills to design and develop online environments using principles of UDL.
- To share strategies used by the team to support instructors in the use of the online environments.
- To provide recommendations for future research.

## **BACKGROUND**

There is a growing trend in higher education institutions to offer online and blended learning. With the demand for more flexible learning, institutions can take advantage of the affordances of multimedia, social media, interactive websites, and informal online learning opportunities (e.g., YouTube, Lynda, iTunes U) in developing robust learning within technology-enhanced environments (Johnson, Adams Becker, Estrada, & Freeman, 2014). Furthermore, since learning is both an individual and a social process (Oztok, Zingaro, Makos, Brett, & Hewitt, 2015), there is an opportunity to create learning experiences that foster a community of learners as well as nurturing student engagement (He, 2013). With the development of rich online and blended environments, careful planning must be given to both the pedagogical and technological components to meet the learning needs of all students.

To meet the diverse needs of students with varying experiences and expertise, abilities, and approaches to learning, care must be taken in the design of learning tasks, courses, and programs to incorporate flexibility (Scott, McGuire, & Shaw, 2003). One framework that provides a comprehensive approach to designing learning to meet the needs of students using multiple approaches and multimedia is Universal Design for Learning (Meyer, Rose, & Gordon, 2014). Founded on neuroscience and educational research, the Universal Design for Learning (UDL) framework can help instructors to design for diverse learning needs and enhance learning experiences for all students (Mangiatordi & Serenelli, 2013).

Appropriate educational development opportunities need to be provided for instructors to develop knowledge and skills with regard to designing learning using the UDL framework. They need to have an understanding of the principles of UDL and what that looks like in practice in support of student

16 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/a-journey-through-the-development-of-online-environments/174573](http://www.igi-global.com/chapter/a-journey-through-the-development-of-online-environments/174573)

## Related Content

---

### Using IT to Augment Authentic Learning

Sandra Jones (2006). *Authentic Learning Environments in Higher Education* (pp. 172-181).

[www.irma-international.org/chapter/using-augment-authentic-learning/5431](http://www.irma-international.org/chapter/using-augment-authentic-learning/5431)

### The Activity System of Higher Education Students Using Technology

(2014). *Activity Theory Perspectives on Technology in Higher Education* (pp. 54-78).

[www.irma-international.org/chapter/the-activity-system-of-higher-education-students-using-technology/85569](http://www.irma-international.org/chapter/the-activity-system-of-higher-education-students-using-technology/85569)

### Using an Audiovisual Case Methodology to Develop Critical Thinking Competence in Distance E-Learning Environment: The Open University of Catalonia (UOC) Experience

Ines González-González and Ana Isabel Jiménez-Zarco (2014). *E-Learning 2.0 Technologies and Web Applications in Higher Education* (pp. 171-187).

[www.irma-international.org/chapter/using-an-audiovisual-case-methodology-to-develop-critical-thinking-competence-in-distance-e-learning-environment/92387](http://www.irma-international.org/chapter/using-an-audiovisual-case-methodology-to-develop-critical-thinking-competence-in-distance-e-learning-environment/92387)

### Toward Technological Bload and Academic Technocracy: The Information Age and Higher Education

George S. McClellan, Gary A. Cruz, Amy Scott Metcalfe and Richard L. Wagoner (2006). *Knowledge Management and Higher Education: A Critical Analysis* (pp. 63-79).

[www.irma-international.org/chapter/toward-technological-bload-academic-technocracy/24968](http://www.irma-international.org/chapter/toward-technological-bload-academic-technocracy/24968)

### Best Teaching and Technology Practices for the Hybrid Flipped College Classroom

Lori Ogden and Neal Shambaugh (2017). *Handbook of Research on Innovative Pedagogies and Technologies for Online Learning in Higher Education* (pp. 281-303).

[www.irma-international.org/chapter/best-teaching-and-technology-practices-for-the-hybrid-flipped-college-classroom/174576](http://www.irma-international.org/chapter/best-teaching-and-technology-practices-for-the-hybrid-flipped-college-classroom/174576)