

Chapter XIII

Teaching Information Security in a Hybrid Distance Learning Setting

Michael E. Whitman

Kennesaw State University, USA

Herbert J. Mattord

Kennesaw State University, USA

ABSTRACT

This chapter provides a case study of current practices and lessons learned in the provision of distance learning (DL)-based instruction in the field of information security. The primary objective of this case study was to identify implementations of distance learning techniques and technologies that were successful in supporting the unique requirements of an information security program that could be generalized to other programs and institutions. Thus the focus of this study was to provide an exemplar for institutions considering the implementation of distance learning technology to support information security education. The study found that the use of lecture recording technologies currently available can easily be used to record in-class lectures which can then be posted for student use. VPN technologies can also be used to support hands-on laboratory exercises. Limitations of this study focus on the lack of empirical evidence collected to substantiate the anecdotal findings.

INTRODUCTION

Information security (InfoSec) is an academic discipline that represents a teaching discipline that is distinct from the traditional fields of informa-

tion systems, computer science, or information technology. As InfoSec programs are designed and implemented in institutions throughout the country, many instructors are struggling to develop programs to educate students in this new

and exciting area. While teaching InfoSec does share some of the same challenges as those of other information technology topics, those not familiar with the specifics of the information security profession will find it difficult to develop curriculum without specialized outside support. With the shortage of established programs, many students interested in studying in this field are pressuring those institutions with established programs to provide distance learning (DL) options. This phenomenon is coupled with past experience that finds many InfoSec students are seasoned IT professionals, usually returning to academia for some specialized education when on-the-job experience is not available or is insufficient. These IT professionals usually maintain their current employment, further demanding alternative educational experiences that are flexible enough to deal with the irregularities of business travel, emergency demands on the employee time, and ongoing business change. The result is that many academic institutions, even those that have barely established coursework in the discipline at all, are beginning to evaluate distance learning support to provide service to a wider student base.

InfoSec education curriculum includes many topics, some technical and some managerial. Most of the specialty topics within the broader InfoSec domain will have improved learning outcomes when the theoretical elements of the subject delivered to the students as reading assignments and lectures are reinforced with additional interactive learning opportunities. The optimum learning environment will combine the best elements of theoretical instruction, using reading assignments, lectures, seminar discussion, and research assignments, reinforced with interactive modules made up of lab tutorials, lab exercises, electronically mediated content such as videos and Web-based seminars, and lab demonstrations. The combination of passive and active learning approaches will prepare the student for the integration of the theoretical material into the students experience with real-world opportunities when cooperative studies

and/or internships are available. Many of these components lend themselves to distance learning, while others require substantial investigation into how to best meet student needs and modifications to current practices in order to sustain academic rigor yet provide the asynchronous distance support demanded by most students.

In 2004, Kennesaw State University began the Bachelor of Science in Information Security and Assurance, only the second such program in the U.S. at a public institution, and the first in the Southeast. Having pioneered the development and offering of undergraduate programs in information security in the Southeast since 2000, Kennesaw State is recognized nationwide for the quality of its programs and the expertise of its faculty. The faculty members teaching in this program have published a number of textbooks on the subject, have conducted an annual conference on information security curriculum development, and have made numerous presentations internationally on the subject.

This chapter provides a case study of current practices and lessons learned in the provision of distance learning-based instruction in the field of information security. The primary objective of this case study was to identify implementations of distance learning techniques and technologies that were successful in supporting the unique requirements of an information security program that could be generalized to other programs and institutions. A secondary objective was to identify the limitations of the program that other institutions must address before implementing.

PREVIOUS WORK

The previous work published in the area of distance learning is far too wide and varied to completely summarize here. By way of a focused synopsis with direct influence on this chapter, a few salient references in the literature are briefly reviewed. The reader is encouraged to explore these resources more fully.

18 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/teaching-information-security-hybrid-distance/19409

Related Content

Three Strategies for the Use of Distance Learning Technology in Higher Education

William E. Rayburn and Arka G. Ramaprasad (2002). *Web-Based Instructional Learning* (pp. 27-42).

www.irma-international.org/chapter/three-strategies-use-distance-learning/31336

Delivery of a Social Science Online Program in India

Shobhita Jain (2010). *Web-Based Education: Concepts, Methodologies, Tools and Applications* (pp. 995-1005).

www.irma-international.org/chapter/delivery-social-science-online-program/41395

Mentoring the Next Generation

Kate Schrauth and Elie Losleben (2010). *Cases on Online Tutoring, Mentoring, and Educational Services: Practices and Applications* (pp. 53-63).

www.irma-international.org/chapter/mentoring-next-generation/38025

Using Social Media as a Tool for Learning in Higher Education

Kathryn Woods, Melissa Gomez and Michelle Gadson Arnold (2019). *International Journal of Web-Based Learning and Teaching Technologies* (pp. 1-14).

www.irma-international.org/article/using-social-media-as-a-tool-for-learning-in-higher-education/234283

Plagiarism Detection Tools in Learning Management Systems

Sergey Butakov and Vladislav Shcherbinin (2010). *Learning Management System Technologies and Software Solutions for Online Teaching: Tools and Applications* (pp. 120-137).

www.irma-international.org/chapter/plagiarism-detection-tools-learning-management/43450