

Chapter 24

Teaching Graduate Technology Management Students With Innovative Learning Approaches Around Cybersecurity

Darrell Norman Burrell

 <https://orcid.org/0000-0002-4675-9544>

The Florida Institute of Technology, Melbourne, USA

ABSTRACT

Every year in the U.S., 40,000 jobs for information security analysts go unfilled, and employers are struggling to fill 200,000 other cybersecurity related roles. Colleges and universities have created certificates, undergraduate, and graduate programs to train professionals in these job roles. This issue becomes more complicated when you explore the that competent workers in this field need more than just book knowledge to be effective. Engaged and experiential learning approaches encourages experimentation and expanding teaching cybersecurity beyond the use of just classroom lectures, textbooks, and PowerPoint slides. The use of experiential and scenario-based learning approaches helps students to develop real-world problem solving and critical thinking skills that demonstrate expertise beyond course grades and degrees. Developing the ability to strategic and adaptive is vital to be effective. This case study research intends not to reconstitute theory but to influence the practice of cybersecurity education through the use of innovative applied and engaged learning approaches.

INTRODUCTION

Often university academic programs and faculty teach in the United States, Africa, and the Middle East with only textbook driven methods. Teaching only from the textbook is a problem when it comes to preparing employees to be cybersecurity managers around policy and operations. These antiqued pedagogy methods exclusively expose students to theory in ways only driven by book knowledge and PowerPoint presentations. This approach often leaves graduates with degrees but also limited practical

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experience. Hofmann (2003) notably explains, “teaching management outside a business setting is just like teaching swimming without putting students in the water.” He stated, “It’s true, I’ve been teaching for almost a quarter of a century, but I’ve yet to meet another professor who took a course in how to be a professor. We learned by doing, not by watching from the sidelines. If business schools don’t ensure that all students, management students, in particular, get this type of exposure through a required practicum of some form or fashion before they graduate, then we have failed them. Many educators entertain the assumption, a false one, that with enough knowledge about how to do something, one can do it. Well, folks, if you believe that works, read everything you can about flying and then go jump off a tall building.” (p. 50). This applied research study functions with a goal to explore value and benefits of scenario-based learning could engage the academic development of graduate students.

Research by Meehan-Klus (2016) outlines the critical need for experience-based learning opportunities that mirror the workplace. Effective teaching requires new and innovative approaches that move beyond just lectures, formal exams, and academic papers (Meehan-Klaus, 2016). Good education involves using learning activities in which students can interactively develop the critical competencies, knowledge, and savvy that is expected to be highly effective in the real job (Meehan-Klaus, 2016). According to research by Tuberville (2014), academic programs can be grossly insufficient if they are missing elements for students to develop a core of marketable technical and soft skills to meet all aspects of the job role development needs of employers and job duty requirements.

ENGAGED AND ACTION LEARNING

David Moore (2013) outlined how teaching approaches and interventions should “induce the learner to look carefully at her experience, to question her own assumptions, to place the experience in relation to larger institutional and societal processes and discourses, to hear others’ voices, to grapple with the question of why things happen the way they do, to imagine how things might be different, to read her experience in terms given by major social theories and to critique those theories from the perspective of her experience to engage, in other words, in serious critical thinking” (2013, pp. 201-202).

Engaged learning affords students with opportunities to engage deeply in their learning through high impact activities (Moore, 2013). These kinds of activities demand that students devote considerable time and effort to purposeful tasks to practice the transfer or application of knowledge across contexts (Moore, 2013). According to Moore (2013) in actual practice, actively engaged learning provides educational experiences that allow students to interact with other perspectives and voices, to receive frequent feedback about their performance, and to reflect on both that feedback and their learning.

According to Marquardt (2011), the crux of action learning, which is like engaged learning, comprises:

- Productive activities, actions, or interventions that foster and build individual and organization development through experiences;
- Problem-based learning that is driven and focused on real problems or areas of concerns that provide opportunities for reflection and education with and from their experience as participants attempt to improve things;
- An interactive process where participants have meaningful opportunities to make and comprehend meanings from direct experiences.

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