# Chapter 11
# Integrating E–Simulations in Teaching Business Information Systems

**Jacob Cybulski**
*Deakin University, Australia*

**Lemai Nguyen**
*Deakin University, Australia*

## ABSTRACT

*Students' early exposure to the fundamentals of business and Information and Communications Technologies (ICT), creation of a professional skill base, as well as, the gaining of practical experience in applying such knowledge and skills, are the determinants of success in their study and development as Information Systems (IS) professionals. This chapter argues that e-simulations, or computer-based and online simulations, can be effectively used to engage learners in interactive learning activities and provide them with real world practical experience in the safety of an educational setting. A research project is subsequently described. A suite of e-simulations were developed and deployed across two institutions to support teaching and learning of Information Systems. Using staff discussions and online surveys, quantitative and qualitative data were collected from the staff and students. The collected data were then analysed to evaluate and guide a sequence of curriculum and technology changes with a view to arriving at an optimum support model for students and teachers using the e-simulations. The findings of the study emphasise the usefulness of e-simulations to accommodate the learning styles of genera-tion Y students, to stimulate their interest and creative thinking, and in meeting industry expectations of IS graduates' ability to fulfil professional roles. Based on these insights, in its concluding remarks, the chapter outlines a conceptual framework for the inclusion of e-simulations in Information Systems curriculum development and teaching delivery.*

## INTRODUCTION

Information Systems academics face a number of challenges in providing relevant and effective education to meet various demands and expectations from modern organisations as well as the newer generation Y of learners. The challenges include: curriculum development that provides the students with the Business Analysis (BA) body of knowledge required by the industry; providing hands-on experiences that can enable students to apply theory to practice in solving real world problems, thus improving their ability to work as business analysts; and, teaching methods that are effective with generation Y students (our youngest entrants into the university system). All these challenges need to be met within the confines of a modern university system, with its social, financial, and time-space constraints.

The Information Systems professional association in Australia – the Australian Computer Society (ACS) - defines the core body of Information and Communications Technology (ICT) knowledge including components such as Technology Building, Technology Resources, Service Management, Outcome Management, ICT Problems Solving and Professional Knowledge (Gregor, von Konsky, Hart, & Wilson, 2008). Universities and professional associations providing ICT courses often use this core body of knowledge in the development and assessment (for accreditation) of their ICT curriculum. A large part of the ICT curriculum recommended for the Information Systems (IS) sub-discipline intersects technology and business topics, and relies on gaining professional knowledge and skills, such as Ethics, Professionalism, Teamwork, Interpersonal communication, Societal and Legal issues, as well as, History and Status of discipline. According to surveys (such as Kim, Shim, & Yoon, 1999; Lee, 2004) into expectations of employers and employees in relation to the demands of IS jobs, students need to develop abilities to grasp complex inter-disciplinary concepts, gain fluency in using information technology, acquire insight into modern business needs, and sensitivity to personal, social, and cultural issues.

Students' early exposure to the fundamentals of business and ICT, creation of a professional skill base, as well as, gaining practical experience in applying this knowledge and skills, are the determinants of success in their study and development as IS professionals. While such an exposure to a real world workplace environment would be desirable, it is often difficult to conduct in terms of cost, resources, risk management and availability of practitioners, and organisations willing to participate (Nguyen & Cybulski, 2008). E-simulations, or computer-based and online simulations can, however, be used to provide learners with some of the real world experiences while overcoming difficulties commonly faced by IS educators. Experiential e-simulations (Gredler, 1996) are especially valuable for IS education as they emphasise gaining practical experience and application of professional knowledge and skills in the safety of educational settings. Experiential e-simulations allow learners to take on an active role in the e-simulation, engage in the simulated practice and perform tasks associated with their professional role, participate in decision-making, thus controlling pathways through the simulation scenarios, and consequently influencing learning outcomes through their own actions and engagement (Cybulski, Parker, & Segrave, 2006).

Student-centred learning is an education approach that is based on, and influenced by, various educational theories primarily including constructivist, experiential learning (Piaget, 1950; Vygotsky, 1978), and individual development and interpersonal relationship in the facilitation of learning (Rogers, 2002). Learning with e-simulations is useful in directly providing experiential learning, and as has been found in this project (Cybulski, et al., 2006). Not only does it recognise student's learning needs, characteristics, and learning styles, but it also focuses on the facilitation and engagement of the student

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