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Full Length Article

e-Learning readiness amongst nursing students at the Durban University of Technology



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ABSTRACT

e-Learning and other innovative open learning multimedia modalities of delivering education are being introduced to enhance learning opportunities and facilitate student access to and success in education. This article reports on a study that assessed students' readiness to make the shift from traditional learning to the technological culture of e-Learning at a university in Durban. A quasi-experimental study design was employed to assess such readiness in first year nursing students before and after an appropriate educational intervention. A modified Chapnick Readiness Score was used to measure their psychological, equipment and technological readiness for the change in learning method. It was found that, while students' psychological readiness for e-Learning was high, they lacked technological and equipment readiness. Although e-Learning could be used in nursing education, technological and equipment readiness require attention before it can be implemented effectively in this institution. Fortunately, these technical aspects are easier to resolve than improving psychological readiness.

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1. Introduction

An undergraduate nursing programme was established at the Durban University of Technology (DUT) in 2012, in accordance with an undertaking by the South African Department of Higher Education and Training to grow post-school education

and training for health professionals (Department of Higher Education and Training, 2013).

The Durban University of Technology aims to produce graduates that are active, reflective, critical and creative thinkers who are able to work independently and collaboratively and are effective communicators as well as being

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culturally, environmentally and socially aware within a local and global context (Sattar & Cooke, 2014). The university's management identified e-Learning as a key strategy and method to facilitate the development of some of these attributes. Cognitive research and theory suggest that e-Learning and other appropriate concurrent multimedia modalities may enhance learning. e-Learning also serves to fulfil the government's requirement that universities deliver enhanced learning opportunities through diverse modalities that increase student access to and success in higher education (Department of Higher Education and Training, 2013). The DUT e-Learning strategy was developed during 2012 (Dark, 2012) and a project was launched to strengthen e-Learning services and support in all faculties and on all campuses. The DUT e-Learning policy was approved and implemented in 2016 in which the policy dictates the stance of e-Learning at the institution (Stewart, 2016). The policy indicates the adoption of e-Learning as a core strategy in keeping with the institutions' strategic plan. The study on which this article is based is part of this project and aimed to assess first year nursing students' psychological, technological and equipment readiness for implementation of e-Learning.

The type of e-Learning offered to nursing students at DUT is blended learning, defined by Driscoll (2002) as a mix of instructional methods, including face-to-face learning experiences that are integrated with online and multimedia learning opportunities. The advantages of appropriately-designed blended learning include delivering improved education to students who are more easily motivated, and are active learner-centred and self-paced learning. "It also enables students to access materials 24 h per day, and the real world through Web-links, cost-effectively by reducing lecture time and increasing the opportunity to collaborate in constructive learning through online communities of enquiry" (Oellermann, 2014, vi). e-Learning has been found to be a popular educational modality of delivery for students enrolled in the management sciences at DUT. Although they still prefer to see their lecturer face-to-face, they reported gaining knowledge through e-Learning methods including the use of online self-tests. These modalities motivated students to engage in the learning process. The students who made use of the various e-Learning methods benefited academically as shown by a significant improvement in their marks (Oellermann, 2014, vii).

Prior to implementing e-Learning, educational institutions need to ensure that they set clear objectives for the new strategy; consider the benefits and disadvantages of e-Learning and the range of possible e-Learning configurations that could be adopted in that specific educational context; and assess e-Learning readiness. e-Learning readiness is important to achieve if effective e-Learning programmes are to be accomplished (Kaur & Zoraini Wati, 2004). Readiness is defined as being "prepared mentally or physically for some experience or action" (So & Swatman, 2006). e-Learning readiness determines whether an institution and its students are psychologically and technically prepared and have the equipment to implement e-Learning (Borotis & Poulymenakou, 2004). Measuring e-Learning readiness makes institutions aware of what is required to optimally facilitate e-Learning in that particular context (Borotis &

Poulymenakou, 2004; Chapnick, 2000; Djamaris, Priyanto, & Jie, 2012; Psycharis, 2005). A study on e-Learning readiness in Bangladesh reported that an institution that is ready to implement e-Learning provides the ideal environment in which continuous learning can take place (Karmakar & Wahid, 2000). In particular, in order to successfully introduce e-Learning, it is necessary to establish students' readiness for this type of learning.

Several e-Learning readiness assessment methods have been documented in the literature (Borotis & Poulymenakou, 2004; Chapnick, 2000; Psycharis, 2005). The importance of using an appropriate tool to measure e-Learning readiness has been emphasised (Borotis & Poulymenakou, 2004; Chapnick, 2000; Djamaris et al., 2012; Psycharis, 2005). e-Learning readiness assessment should reveal the impact of information and communication technology on that education facility and identify areas that require attention prior to implementation.

1.1. Theoretical model

The Chapnick Readiness Model (2000) was used as the theoretical framework that underpins this study. Chapnick (2000) developed this model for determining the e-Learning readiness of an organization by providing answers to the following questions: a) Are we able to do this? b) If we are able to do this, how is it possible to achieve it? c) What will the results be and how do we evaluate them?

This model groups different factors into eight readiness categories:

- Psychological readiness, which focuses on an individual's state of mind as this impacts on the outcome of the e-Learning initiative. This type of readiness is regarded as being among the most significant aspects that could affect the implementation process.
- Sociological readiness recognizes the characteristics of the environment in which the programme will be conducted.
- Environmental readiness considers the forces affecting stakeholders both inside and outside the organization.
- Human resource readiness reflects on the accessibility and plan of the human support system.
- Financial readiness relates to the financial resources available in terms of budget size.
- Technological skill readiness refers to the availability of technical support.
- Equipment readiness deals with the ownership and availability of proper and appropriate equipment.
- Content readiness focuses on the substance of the curriculum being developed for teaching.

1.2. Research design and methods

A quasi-experimental Interrupted Time Series Analysis study design was used as an efficient and feasible method to answer the research question, namely assessing the e-Learning readiness of nursing students. The study sample comprised all undergraduate first year Bachelor of Nursing Science students registered for the anatomy and physiology modules. The students acted as their own controls. They completed a questionnaire before the intervention was administered in

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