JCHS Volume 1 No 2 October 2006

REFLECTIONS ON NURSING STUDENTS' E-LEARNING EXPERIENCES

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Abstract

Introduction: To ensure that nursing education stay abreast with modern technology advances has the School of Nursing (SoN) of The University of the Western Cape integrated e-learning into the curriculum. This method articulates well with the case-based approach adopted by the SoN. The Learning Management System, Knowledge Environment for Web-Based Learning (Kewl), Next Generation (KNG), was used to facilitate online teaching and learning.

Objectives: The primary aim was to gather baseline data on e-learning by exploring the perceptions and experiences of the first pilot group of undergraduate nursing students who were exposed to this strategy.

Methods: A descriptive cross-sectional quantitative design was used to determine the students' understanding and valuing of e-learning, the benefits and skills gained and challenges experienced, by means of a structured, close-ended questionnaire with space for comments. Convenience sampling was used and the questionnaire was distributed to the 87 third year undergraduate nursing students who completed the Primary Mental Health Care module between May and July 2006. Microsoft Excel software was used for the capturing and analysis of the data.

Participants: Nursing students in their third year of Baccalaures Curationis degree who participated in the Primary Health Care module.

Setting: University of the Western Cape, Cape town.

Intervention: Introduction of e-learning as a teaching strategy.

Results: The response rate was low. Although some students struggled initially, the majority finally succeeded in mastering e-learning. KNG has benefits but students also face specific challenges that need to be attended to. Most of the respondents felt that the learning experience was valuable and stated that they will recommend it to other students.

Conclusion: Students need to adapt to the challenges of modern technology. They still preferred face-to face teaching rather than group work.

Key words: e-learning strategy, e-learning experiences, undergraduate nursing students

Introduction

Nursing education is dynamic and has to adapt to accommodate factors such as globalization and advances in information technology such as online learning (Christianson, Tiene, & Luft, (2002); WHO, 2005: 10). On-line courses have been found to have the potential to enhance active participation by providing flexibility and accessibility to learners (Bolan, 2003). Interactive communication has also been reported as being better with on-line instruction as the students are forced to engage with their group members during group discussions (Harden, 2003; Millis & Hrubetz, 2001). However, some authors caution against jumping on the web-based learning bandwagon because there is a paucity of evidence regarding quality assurance issues. Thurmond (2002: 21) states:

In spite of the increasing use of the Internet to deliver courses and enhance learning, little is known about the outcomes, what teaching and learning practices contribute to positive outcomes, what supports need to be in place for students and faculty, or how Web technology and its learning tools contribute to teaching and learning.

The University of the Western Cape's (UWC) commitment to respond in critical and creative ways to the global technological challenge has led to the development and implementation of e-learning, the Kewl Next Generation (KNG) online teaching and learning strategy. The School of Nursing (SON) joined this KNG e- learning project in 2005 and started rolling out to the rest of the academic staff and students in 2006, commencing with the third year undergraduate students. The primary reason for implementing e-learning is because it articulates well with the philosophy and principles of the case-based approach adopted by the School. The second reason is that KNG e-learning strategy allows for constructive and instructional learning.

Constructionists regard learners as active participants in the construction of their own knowledge, requiring learners to take responsibility for the outcomes of their learning process, as they integrate new ideas with prior knowledge. The prior knowledge acts as both filter and facilitator of new information and experiences, as the learning process become transformed and expanded (Gravett & Geyser, 2004). Therefore, the practical knowledge and values of learners should be honored when designing an interactive programme. Especially as the cultural, social, and ethnic background of the learner may influence how they interpret the world, their responses to environmental stimuli and how they process information (Morgan, 2000). The challenge is how best to take advantage of the users' knowledge and skills when creating teaching and learning technology.

According to the *instructional systems design paradigm*, every teaching and learning system should be comprised of the inputs, processes and outputs/products. The sources of input could be people, knowledge, materials, finance, etc. Processes involve the means through which the inputs are transformed into outputs/products. Processes thus include identifying needs, resources, delivery mechanisms interactions, etc, that produce the desired outputs (Mergel, 1998). It is important to note that it is beneficial for designers to systematically plan and organise their online courses, irrespective of the instructional-design model they adopt.

The ADDIE model described by Gravett & Geyser (2004) is one of a number of models available for

designing on-line courses. Savenye, Olina, & Niemczyk (2001) suggest that designers of online courses pursue the following steps:

- Analysing the context, learners, and goals of the course
- Developing the online instructional materials for the course
- Conducting formative evaluations and revisions of the course.

Aim and objectives

The primary aim of this study was to gather baseline data on e-learning by exploring the perceptions and experiences of the first pilot group of undergraduate nursing students who were exposed to this strategy. The objectives of the study were to:

- Determine the students' understanding of e-learning.
- Identify the skills/competencies students developed due to e-learning.
- Identify the challenges students experienced during e-learning.
- Use the information obtained from this study to refine the questionnaire for the next cohort of students.

Methods

A descriptive cross -sectional quantitative study, using a questionnaire was used for the study. The structured, open-ended questionnaire was jointly developed by the e-learning department and the relevant lecturer in order to collect data regarding the students' understanding and value of e-learning, the benefits and skills gained, challenges experienced, and the differences between e-learning and face-to-face teaching.

The study population comprised of the students who received training and instruction in e-learning between May and July 2006. Convenience sampling was used as the questionnaire was distributed to the whole group of 87 third year undergraduate nursing students on completion of the Primary Mental Health module. Participation was voluntary and anonymity and confidentiality were maintained. Microsoft Excel software was used for the capturing and analysis of the data. The categorical data were coded in order to calculate the basic descriptive statistics presented below.

The questionnaire requested students to provide the following information:

- Understanding of the concept: e-learning / on-line learning.
- Previous exposure to on-line learning.
- The training received on the KNG system.
- Benefits and skills gained from e-learning.
- Problems / challenges encountered with e-learning.
- Differences between e-learning and face-to-face teaching and learning.

Results

A limitation of the evaluation was the low response rate (47%) of the students as less than half returned their completed questionnaires (41/87) completed to the e-learning department. Only three students did not attend the first training session, but all attended the second training session that concentrated on how to complete multiple choice questions using KNG. In addition to the official training by the e-learning department did the lecturers demonstrate the use of KNG in small working groups to the students. The students had opportunity to ask questions and were assisted when they need help to make sure that they learned the skills to use the program effectively.

Understanding, training, and value of e-learning

The first section of the questionnaire was aimed at determining the students' understanding of e-learning. The findings indicate that the majority of students demonstrated a correct understanding of KNG (75.6%), even though very few had been exposed to KNG before (19.5%). The majority finally achieved mastery of the KNG (87.8%) even though many found the system not easy to use in the beginning (65.9%). Most of the students felt that they gained skills (90.2%), found it beneficial (90.2%) and would recommend it to other students (90.2%) (Table 1).

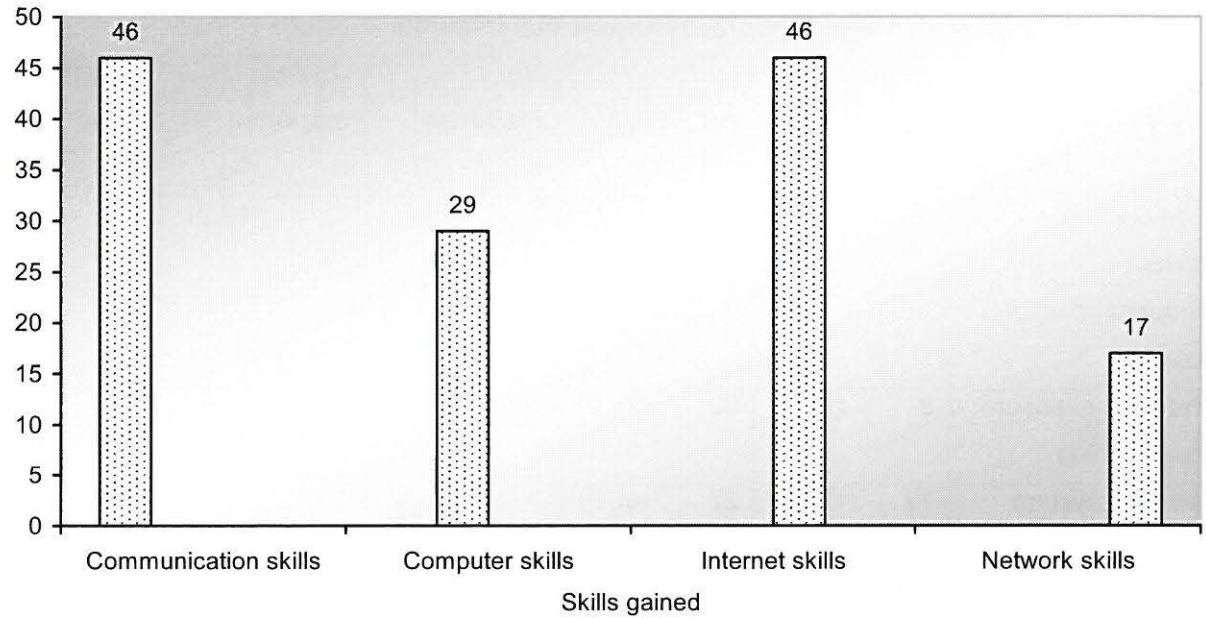
Table 1 Understanding, training, and value of e-learning

Category N = 41	Yes n	(%)	No n	(%)	No response N	(%)	Unclear response n	(%)	Incorrect response n	(%)
Demonstrate correct understanding of e-learning	31	(75.6)	1	(2.4)	1	(2.4)	5	(12.2)	3	(7.3)
Previous exposure to e-learning	8	(19.5)	32	(78.0)	1	(2.4)	0	(0.0)	0	(0.0)
Was the system easy to use in the beginning?	12	(29.3)	27	(65.9)	2	(4.9)	0	(0.0)	0	(0.0)
Did you finally achieve mastery of the KNG?	36	(87.8)	5	(12.2)	0	(0.0)	0	(0.0)	0	(0.0)
Have skills been gained from e-learning?	37	(90.2)	4	(9.8)	0	(0.0)	0	(0.0)	0	(0.0)
Has e-learning been ranked as beneficial?	37	(90.2)	4	(9.8)	0	(0.0)	0	(0.0)	0	(0.0)
Recommendation of KNG system to other students	37	(90.2)	1	(2.4)	0	(7.3)	0	(0.0)	0	(0.0)

Skills gained from e-learning and challenges of e-learning

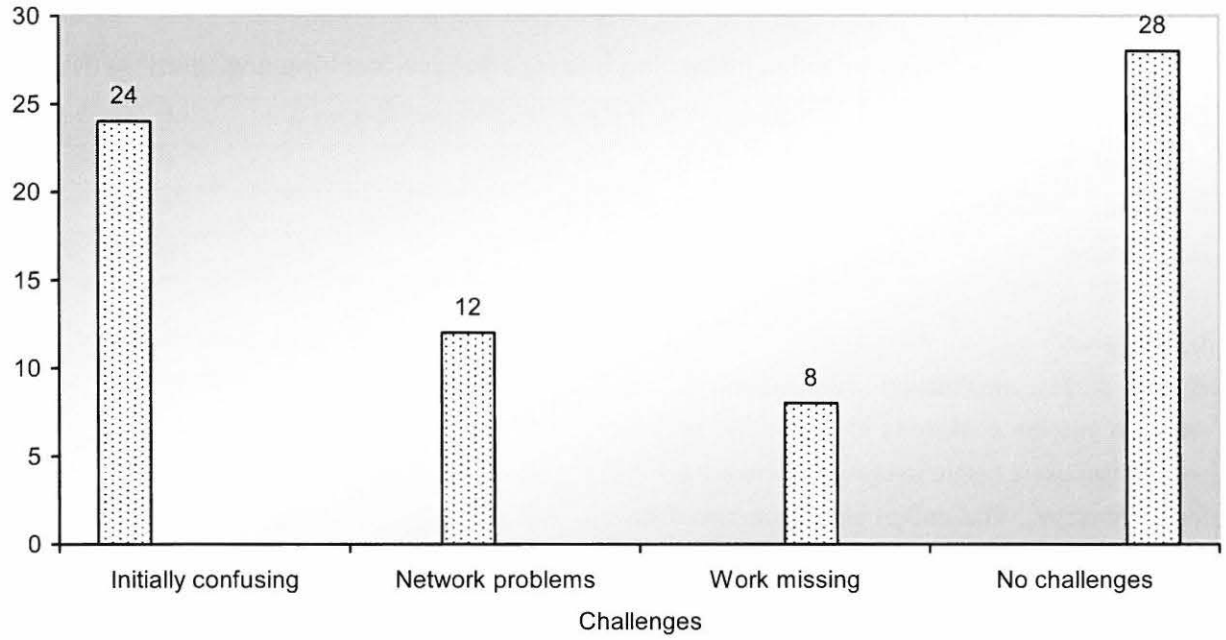
Students were also requested to respond to questions on the skills gained from e-learning and challenges experienced with e-learning. The most common skills gained by the students were communication skills (46%) and internet skills. Computer skills (29%) were not cited as a new skill gained by most students, possibly because they already had basic computer literacy skills as part of their first year programme. Less than half felt that they learned any network skills (17%) (Figure 1).

Figure 1 Skills gained



The challenges experienced by the students related to initial confusion (24%) with the e-learning strategy as it was completely new to both the students and the lecturer. Part of the challenges experienced related to network problems (12%) and work "getting missing" after submission (8%) to the lecturer. A request by the students' was that they need the system to provide some means of confirmation regarding destination, e.g. Assignment received (Figure 2).

Figure 2 Challenges experienced



Benefits gained from the e-learning experience

The overall response to benefits of e-learning was not well answered. Convenience, easy access to resources and easier small group communication was the most recorded benefits gained from e-learning (Table 2).

Table 2 Type of benefits gained from the e-learning experience (N=41)

Type of benefits gained from the e-learning experience	n	(%)
Convenience	7	(17)
Accessibility	6	(15)
Not place-bound	4	(10)
Easier small group communication	8	(20)
Easy access to resources	9	(22)

Differences between e-learning and face-to-face teaching and learning

The majority of the students did not respond to this question. Twenty percent of the students (20%) did not experience any difference between e-learning and face-to-face teaching and learning. E-learning was reported as missing face-to-face interaction with the lecturer because of lack of immediate feedback and direction. The following anecdote captures the essence of the difference found between e-learning and face-to-face teaching:

In the lecture, sometimes 80% of students or 100% don't do anything; only sit and listen, but with e-learning, everyone must work for her/himself.

Table 3 Differences between e-learning and face-to-face teaching and learning (N=41)

Differences between e-learning and face-to-face teaching and learning	n	(%)
Human interaction missing	6	(15)
Evidence of work submitted to lecturer (delivery not confirmed)	4	(10)
No difference	8	(20)

Discussion

Blythe (2001) emphasises the importance of research into the usefulness of technology among prospective users before designing or implementing the technology. The design should be based on research and not selected outside the research context. Designers of e-learning programmes, in addition to designing the layout and the tools of the programme, should also focus on the appropriateness of the language in the design of the programme as part of a socially constructed language game. The practical knowledge and values of the users / learners needs to be honoured when designing an interactive programme. The challenge here is how best to take advantage of the users' knowledge and skills when creating the e-learning programme. This then requires the designer to consider the cross-cultural factors in the design of interactive learning environments (Morgan, 2000). This includes the careful selection of the symbols in icons and the use of directional symbols. These can have different meanings to people from different cultural groups or geographic areas.

The cultural, social, and ethnic background of the learner may influence many aspects of their behaviour: how they interpret the world, their responses to environmental stimuli, how they process information (Morgan, 2000). It was evident in the study that some students did not have an accurate understanding of e-learning in spite of being exposed to training on the use of the programme.

Constructivists believe that learners are important in constructing their own knowledge as they interact with the natural world. Learners are active participants in the learning process and are responsible for the result of this process. They integrate new ideas with prior knowledge in order to make meaning of the experience. The prior knowledge of the learner becomes a filter and a facilitator of new information and experiences, which will then become transformed and further, expanded during the learning process (Gravett & Geyser, 2004). Because learners have different learning styles and are active participants in the learning process, it is therefore important that nurse educators utilise interactive instructional media in the learning environment. On-line teaching and learning has been reported to improve interactive communication as the students are forced to engage with their group members during group discussions (Harden, 2003; Millis & Hrubetz, 2001).

The response rate was very low but some students experienced the on-line education as beneficial. Some students prefer the conventional way of face to face teaching and lack the human interaction.

This was explained as the lack of immediate response from the lecturer regarding the receipt of their individual assignments. A feedback mechanism needs to be designed to provide this immediate acknowledgement of receipt of information from the students.

Conclusion

The responses from the students confirmed that students need to adapt to new learning environments such as e-learning. KNG has benefits, but the students faced some challenges that need to be addressed. Although some students struggled initially with the programme, the majority succeeded finally in mastering e-learning and regarded the experience as valuable and beneficial enough to be recommended to other students.

The information obtained from this study has been used to formulate a structured questionnaire which has been used with the second cohort of students in the Primary Mental Health Module. This questionnaire will also be used with the other groups of students involved with e-learning within the school.

Limitation

The poor response from the students to complete the questionnaire could have influenced the results.

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