

Challenges Faced by e-Learners at Ndola School of Nursing; Basis for Evaluation of e-Learning Program in Zambia

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Introduction

The study aims at establishing challenges experienced by e-learning student nurses at Ndola school of nursing. e-Learning is a platform for learning which uses various electronic appliances which includes computers, internet facilities and other appliances for collection, processing, storage and dissemination of information world over. e-Learning is defined as technology supported learning and the delivery of content via all electric media (1). e-learning is the teaching and learning where students are not required to be physically present at a specific location during the term as the process of providing instructions when students and instructors are separated by physical distance, time or both, e mail and web are used for initiation of life-long learning in educational process lead to new forms of education and education programs (2).

In Kenya Amref Health Africa trained over 7,000 Kenyan nurses through e-learning in 2011, while in Tanzania Amref Health Africa intend to train 1000 nurses by the end of the program (3). In Zambia e-learning to train nurses was launched on 13th February 2014, in partnership with Child fund international to help accelerate their training in line with the 21st century technology. The first intake of trainee nurses' e learners was enrolled in July 2014 in four schools namely; Ndola, Kitwe, Mufulira, and Livingstone and the programme is conducted in nursing colleges managed by ministry of health only. To ensure smooth implementation of this programme child fund in conjunction with general nursing council trained 16 principle tutors in curriculum adaptation, 30 tutors in development of content materials and 20 tutors in review of e content before training commenced. Child fund international also donated 80 computers to supplement on existing equipment in these training institutions. The aim of this project is to train 6,000 nurses in the next five years in 16 ministries of health training schools, with each registered nursing school training not less than 50 students initially and increase eventually as they gain experience (4). A blended approach of e-learning has been is a mix of the traditional and online methodologies where some of the learning that is required to achieve a learning objective is undertaken in the traditional classroom environment but the use of eLearning technologies and methods is also applied to the learning that is undertaken. This method of training nurses has a lot of advantages compared to the traditional method.

Advantages of e-learning include:

- Improved quality education process
- Improved the presentation of nursing problems
- Enhanced creativity, motivation and quality of work of students in nursing care.
- Enlarged the accessibility of educational contents regardless of time and place.
- Enhanced the student's ability for analyzing, synthesis and critical thinking (8).

Despite these advantages, it has limitation which may range from challenges with technology and understanding the e-content. Review of records revealed that Ndola school of nursing recruited 50 students for e-learning, however, only 43 students reported and of these some dropped out, currently there are 39 students in training. On the other hand e-content was not accessed by students from their homes and had to come to school to access the content.

During face to face the traditional method of teaching was being used due to challenges with internet connectivity.

Literature review

This chapter reviews the literature related to e-learning in nursing. The literature review provides the leader with an overview of major academic works done by other academicians. An electronic search on key words published only in Journal articles and key informants were reviewed to compile the main body of literature.

Challenges experienced by e-learning student nurses

A study done by El Mansour on students' experience revealed that online courses can result in a 'feeling lost in cyberspace' and feeling frustrated by technical problems and course management system (5). This means that at times, technical problems may result into delay or failure to meet deadlines, which is a barrier to effective learning. However, a study done on e-learning in Maribor and John Hopkins University on nurses revealed lack of knowledge as a major challenge accounting 58% at SON, lack of contact was 73.6% at UCNS, access to internet was 27.4% SON, while UCNS was 11.7% and fear of technology was 28.7%, while SON was 16.4% (6). A study conducted in South in Africa revealed that clinical supervision contributes positively to the academic, professional and personal development of students. The results also showed that some clinical supervisors were not adequately prepared for their roles and responsibilities (7).

According to a study done by Tiwari revealed that students clinical practice is affected to large extent on how they perceive the assessment tasks as learning is focused on passing there examinations, (rote learning), unlike learning. (4) A study done on effectiveness of online learning revealed that perceived effectiveness of online learning was relatively low, though numerous studies have found online learning effective in terms of learning outcomes (9). The major challenge in adopting the online learning mode is to enhance human interaction so as to provide a facilitative environment for establishing peer support, developing academic dialogue and socialization (8). Despite these challenges, AMREF reported that e learning has been tried and tested and proved to be a successful model for training health workers (3). A study done on perception of nurses towards e learning revealed that nurses have positive perception about online learning ($x = 3.86$; $SD = 0.48$) (6). Another study revealed that attitude of student nurses towards e-learning has been very positive and supportive towards online instructions (11). Students' perspectives are important to study because their perspectives of e-learning environment are not always consistent with perspectives of course developers or instructors (12). Therefore the investigator would like to explore problems experienced by e learning student nurses at Ndola school of nursing.

Statement of the problem

The study aims at establishing challenges experienced by e – learning student nurses at Ndola school of nursing. In Kenya e –learning programme for nurses increased access to training by 1,400% by training more than 7000 nurses in five years. In Zambia e – learning training program was started in July 2014 and 39 students are currently in training doing their second year. The investigator would like to establish problems being experienced by e-learning student nurses and identify supportive measure to address their problems. Currently there are no studies that have been done in Zambia. Hence the research question; what problems do e – learning student nurses experience while in training? What supportive measures do the e-learning student nurses require to address their problems?

Justification of the study

The study finding will be able to highlight program needs, provide strategic direction for future programs by ensuring that best approaches are explored and used to refine the implementation process of e-learning in Zambia. Also the findings may be incorporated into

policy process to ensure that interventions that are effective are implemented. At the same time this study will generate first hand data based on lived local experiences and this will strengthen planning and implementation of e – learning program. It is believed that from this project, policy makers like GNC, service providers like lecturers and the student community at large will understand some of these problems and address them.

In view of the above the investigator would like to establish challenges experienced by e-learners at Ndola school of nursing, so that supportive measures can be implemented to enhance successful learning process.

Research objectives

General objective

To determine challenges experienced by e – learning student nurses with training?

Specific objective

1. To establish, factors influencing e learners' training?
2. To identify solutions to e – learning problems experienced?

Research question

1. What problems do the e – learning student nurses experience while in training?
2. What supportive measures do the e-learning student nurses require to address their problems?

Operational definitions

2.4.1 e-Learning: refer to online learning

2.4.2 Challenge: refer to difficulties/problems experienced

2.4.3 E-Learning Student nurse is a trainee nurse who is still undergoing training using computers as a platform of learning.

Methodology

Methods

An exploratory study was conducted at Ndola school of nursing involving second year e-learning students. Ndola School of Nursing which is located in Copperbelt province in Zambia. Ndola school of nursing was purposively selected as it is one of the pilot training institutions offering E-learning Registered Nursing program for pre service in Zambia. The study was conducted from 14th to 18th July 2015. A population study was conducted comprising of all (39) e-learning second year student nurses at Ndola school of nursing who were currently in second year at Ndola school of nursing and this was a population study, however only 38 students were available during the study. The sample size was not calculated as it was a population study. Convenient sampling method was used as it involves the use of research subjects at the research site. Semi-Structured questionnaire modified from other research studies on e-learning to gather information on student nurses' challenges on e – learning program.

Inclusion criteria: All second year e-learning student nurses at Ndola school of nursing.

Exclusion criteria: All second year e-learning student nurses who are not students at Ndola school of nursing.

Validity

This study will use a semi-structured interview schedule. To ensure validity of data collection tool, pre-testing of the instrument was done at Ndola school of nursing among second year general student nurses to ensure clarity, precision and consistency of questions and where necessary adjustments were made on content and sequencing of questions.

Reliability

The tool was modified from other research study questionnaires that had similar methodology. Reliability of the instrument was achieved by conducting a pre-test study in order to test the degree of accuracy with which the tools measured e – learning student nurses’ challenges with training. After the evaluations of the pilot test to assess the extent to which the original questionnaire would grant us reliability, the researcher had an opportunity to perfect the questionnaire to the research instrument and their willingness to answer the questions. Deficiencies in the tool were overcome by making necessary changes where there are gaps. Also use of open ended questions helped to bring out in-depth information so that all issues relating to challenges were discussed. The pilot testing also helped to determine how much time needed to administer the questionnaire and to analyse it. The lessons learnt from the pre-test, helped the researcher to develop a reliable and locally focussed modified questionnaire.

Ethical consideration

Consent was obtained from respondents and Ndola school of nursing school management. Respondents were in a natural setting and hence were not exposed to emotional or physical harm. Confidentiality and anonymity was maintained to all questionnaires as their names did not appear on the questionnaires, instead the serial number were used. Privacy was maintained as all questionnaires were kept under lock and key after each review.

Data process and analysis

Introduction

A total of 38 respondents were interviewed and there was a 97% response rate. There were 39 e-learning student and only 38 were interviewed as one (1) did not report back to school after the holiday. Content analysis was used to analyze qualitative data and quantitative data was analyzed using a data master sheet on challenges experienced by e –learning student nurses towards e-learning. 95% confidence interval was set together with estimates. Cut off point for significance was set at 5%. Statistical significance achieved if P value is 0.05 or less, thereby rejecting the null hypothesis. The data was analyzed using content analysis, then by univariate analysis to make frequency tables, then bivariate analysis to make cross tabulations. The data was presented using tables for easy communication.

Section A: Demographic data

Sex	Frequency	Percentage
M	10	26.3%
F	28	73.6%
Total	38	100%

1. Table 1. Sex n=38

The table above shows that majority of the respondents 73% are female, while 26.3% were males.

1 st year	2 nd year	3 rd year
0 (0%)	38 (100%)	0 (0%)

2. Table 2: Level of training n=38

This table shows that all the respondents 100% are second years

18-30 years	31 -40 years	41-50 years
38 (100%)	0 (0%)	0 (0%)

3. Table 3: Age range n= 38

Table 3 shows that all (100%) respondents were between the age range of 18 to 30 years.

Section B: Challenges with e-learning program.

SEX	Yes	No
Male	0 (0%)	10 (26.3%)
Female	5 (13.1%)	23 (60.5%)
Total	4 (13.1%)	3 (86.8%)

4. Table 4: Problems with clinical practice? n= 38

Table 4 shows that majority 86.8% of the respondents said that they have no problems with clinical practice, while 13.1% have problems.

Recommended action to improve clinical practice	Percentage
Qualified staff to stop doing short cuts when doing sterile procedures on patients for risk of infections	2 (5.2%)
Attitude of qualified staff should improve	2 (5.2%)
Some nurses are not willing to help when asked, it's like bothering them, need to talk to them.	1 (2.6%)

5. Table 5: Suggested measures to improve clinical practice. n=38

Table 5 shows varied responses given by respondents who said that qualified staff should stop doing short cuts when doing sterile procedures 5.2%, improve attitude 5.2% and need to be talked to 2.6%.

Sex	Yes	No
Male	4 (10.5%)	6 (15.7%)
Female	18 (47.3%)	10 (26.3%)
Total	22 (57.8%)	16 (42.1%)

6. Table 6: Experienced problems in understanding e-content n= 38

Table 6 shows that more than half 57% of the respondents have problems in understanding e-content, of which 47.3% were females, while 42.1% had no problems understanding e-content.

Recommendations to improve e-content	Percentage
Introduce simulators in form of audio- visual aids to know how to pronounce certain words. Having practical video lectures on e-content.	7 (31.8%)
Content must be accessible when away from school	2 (9.0%)
Some content is too summarized and needs explanation	5 (22.7%)
Organizers need to be serious with e-content as this is just by word.	1 (4.5%)
Second year e-content need to be provided as it has never been provided	2 (9.0%)
Improve internet service	4 (18.1%)
Need to open computer room all day	3 (13.6%)
Improve accessibility to computer laboratory	3 (13.6%)
Introduce orientation workshop on e-content before lectures begin	1 (4.5%)
Tutors must go through all content during face to face	3 (13.6%)

7. Recommendations to improve e-content. n=38

Table 7 shows varied reasons on improvement of e-content most significant being, Introduce simulators in form of audio- visual aids to know how to pronounce certain words. Having practical video lectures on e – content 31.8%; some content is too summarized and needs explanation 22.7%; Improve internet service 18.1%; Need to open computer room all day 13.6%; and tutors must go through all content during face to face 13.6%.

Problems	Frequency	Percentage
Yes	33	86.8%
No	5	13.1%
Total	38	100%

8. Problems with accessibility to computer lab & skills lab for practice. n= 38

Table 8 shows that majority 86.8% have problems in accessing the computer laboratory and skills laboratory.

Suggested areas of improvement in computer and skills laboratory	Frequency
1. Computer laboratory need to be opened to improve accessibility as it is closed most of the time	17 (44.7%)
2. Skills lab to be opened to enable practice	5 (13.1%)
3. ICT man to stop asking for money if we need help	1 (2.6%)
4. Employ a qualified person to work in the computer laboratory who knows what to do.	1 (2.6%)
5. Many servers are needed to avoid congestion	2 (5.2%)
6. IT man not co-operative in computer laboratory, must be co-operative.	1 (2.6%)
7. Computer laboratory has been personalized by IT man; he should be welcoming and helpful when asked.	3 (7.8%)
8. Improve internet services and work on the network	11 (28.9%)
9. IT man should be available, computer lab to be opened and cleaned as it is too dust.	8 (21.0%)
10. Need to put 2 people in charge of computer laboratory to improve availability and reduce on number of passwords for easy access.	3 (7.8%)

9. Recommendations to improve accessibility to computer laboratory and skills laboratory n= 38

The table above shows that respondents gave varied solutions on the areas of improvement on accessibility to computer laboratory. Almost half of the respondents (44.7%) indicated that areas needing improvement were Computer laboratory which need to be opened to improve accessibility as it is closed most of the time. While 28.9% said improve internet services and work on the network. IT man should be available, computer lab to be opened and cleaned as it is too dust 21%. The least suggested solution were the need for ICT man to stop asking for money if we need help 2.6%, to be co-operative 2.6% and need to employ a qualified person to work in the computer laboratory who knows what to do 2.6%.

Perception	Frequency	percentage
Good	37	97.3%
Bad	1	2.6%
Total	38	100%

10. Perception of e-learning n=38

Table 10; shows that majority 97.3% of the respondents said that they have good perception of e-learning, while 2.6% had bad perception.

Areas of improvement in e-learning	Percentage
Provide lunch and accommodation during face to face	3 (7.8%)
Provide personal laptops/ tablets for easy studying	4 (10.5%)
Provide e-content on time to enable us study before face to face.	24 (63.1%)
Create a good learning platform and ensure everything is available	2 (5.2%)
Ensure availability of learning materials as you start academic year.	8 (21.0%)
Improve computer lab accessibility, which must be accessible at any time	12 (31.5%)
Improve internet connectivity and network system	4 (10.5%)
The IT person working in the lab need to be removed as he does not help us.	1 (2.6%)
Provide visual and audio tutorials on e-content with students, which can be used during self study.	2 (5.2%)
Create a good learning platform and ensure everything is available	2 (5.2%)
Face to face should be maintained at 3 weeks as extension disturbs our study.	1 (2.6%)
Build strong foundation and commitment from both tutors and students	1 (2.6%)
Improve methods of teaching	1 (2.6%)

11. Recommendations to improve e – learning. n=38

Table 11, shows various recommendations provided by respondents and the most significant was e-content should be provided on time to enable them study before face to face 63.1% and that computer lab accessibility should be improved 31.5%, provide personal laptops or tablets and improve internet connectivity 10.5% respectively.

Discussion of findings and conclusion

Introduction

The main objective of the study was to determine challenges experienced by e – learning student nurses with training at Ndola School of nursing. This chapter discusses the findings in line with the research question. In this study themes that represent the key research questions have been used to discuss the findings and these are;

1. What problems do e – learners experience while in training?
2. What supportive measures do the e-learning student nurses require to address their problems?

Demographic characteristics of e-Learners

In this study majority of the respondents 73% were female, while 26.3% were males and that all the respondents 100% were second years. In terms of age range, all the respondents were between 18- 30 years. The age range is associated with modern technology and therefore could have little challenges in accessing e – content and browsing the internet.

Problems Experienced by e-Learners and Solutions to their problems

The findings revealed that majority 86.8% of the respondents said that they have no problems with clinical practice, while 13.1% said they have problems. This further compliments the findings by WHO 2015 who reported that of the studies that evaluated differences in skill acquisition, eight (62%) found significantly greater skill acquisition among students assigned to eLearning compared to those assigned to traditional learning (18). To address the problems associated with clinical practice, the respondents said that qualified staff should stop doing short cuts when doing sterile procedures and improve attitude 5.2%

and need to be talked to 2.6%. A study done in South Africa showed that some clinical supervisors were not adequately prepared for their roles and responsibilities (7). This could affect the e-learning students negatively, as they may learn wrong attitude towards nursing practice.

The findings further revealed that more than half 57% of the respondents had problems in understanding e-content, of these 47.3% were females, while 42.1% had no problems understanding e-content. To address the challenges with e-content respondents suggested varied reasons on improvement of e-content, most significant being, Introduction of simulators in form of audio- visual aids to know how to pronounce certain words. Having practical video lectures on e – content 31.8%. This complements findings done by John Hopkins University who said that major challenge in adopting the online learning mode is to enhance human interaction so as to provide a facilitative environment for establishing peer support, developing academic dialogue and socialization (8). However, some educational experts observed that online courses were more interactive in nature than the traditional ones (15, 16). The reason offered by these researchers was that online education made it easier for slow learners, who more response may need time to participate (17). The respondents also said that some content is too summarized and needs explanation 22.7%; the respondents further suggested that there was need to improve internet service 18.1%. This is in line with the study done in South Africa which revealed that access to technology has been identified as a major challenge for the implementation of technology enhanced teaching in developing countries (19); Computer room must be opened the whole day 13.6%; and tutors must go through all content during face to face 13.6%. This could imply that the e-learners experience difficulties understanding the e-content and may contribute to poor performance.

The study findings revealed that majority 86.8% of respondents have problems in accessing the computer laboratory and skills laboratory. This hinders their learning practice during self study. To address this problem, the e-learners suggest the following solutions to improve accessibility to the computer and skills laboratory. The findings revealed that almost half of the respondents 44.7% indicated that areas needing improvement was the Computer laboratory which need to be opened to improve accessibility as it is closed most of the time. While 28.9% said improve internet services and work on the network. Others said that the IT man should be available, computer lab to be cleaned as it is too dust 21%. The least suggested solution were the need for ICT man to stop asking for money if we need help 2.6%, to be co-operative 2.6% and need to employ a qualified person to work in the computer laboratory who knows what to do 2.6%.

The study findings also revealed that majority 97.3% of the respondents said that they have good perception of e-learning, while 2.6% said had bad perception. These findings are in line with the study done at Kansas University which revealed that attitude of student nurses towards e-learning has been very positive and supportive towards online instructions (11, 6). However, reasons given by the 2.6% should not be ignored, and must be addressed. In view of this, I can say that e-learning is the best platform of nursing education as the learner is in control of her studies and promotes critical thinking and decision making.

Support needed to address challenges faced by e-Learning student nurses

The study findings revealed various recommendations provided by respondents who said that e-content should be provided on time to enable them study before face to face 63.1% and that computer lab accessibility should be improved 31.5%. Ensure availability of learning materials as you start academic year 21%. Provide personal laptops/ tablets for easy studying 10.5%. Improve internet connectivity and network system 10.5%, Provide lunch and accommodation during face to face 7.8%, Create a good learning platform and ensure everything is available 5.2%, Provide visual and audio tutorials on e-content with students, which can be used during self study 5.2%; The IT person working in the lab need to be removed as he does not help us 2.6%; Face to face should be maintained at 3 weeks as extension disturbs our study period 2.6%; Build strong foundation and commitment from both

tutors and students 2.6%; and Improve methods of teaching 2.6%. In view of these findings, there is need to address these challenges in order to promote good learning environment.

Limitation of the study

Lack of adequate resources such, as funds and the time frame, in which the capstone project was to be completed, was the major limitation. Ndola school of nursing has been selected for convenience purposes.

Strength of the study

This was a population study and the characteristics of the respondents are similar to those in other registered nursing schools in Zambia conducting e-learning and are using the same curriculum, therefore the findings can be generalized. Also the findings will be used to strengthen e-learning program and for policy prescription to address challenges experienced by students.

Dissemination of findings

The study findings of this project will be disseminated to ministry of health in Zambia, the General nursing council of Zambia, 3rd international e-conference and Ndola school of nursing management.

Conclusion

e-Learning is very critical as information technology is now being widely adapted to local curricula and infrastructure to improve both health service delivery and the training of health professionals across the continent. In Zambia e-Learning is an emerging trend for training of nurses and is going through teething problems and these challenges can hinder successful implementation of the programme if not addressed promptly. Effective and efficient training of these trainees will help them acquire the necessary skills to become competent nurses upon graduation. Therefore innovative approaches must be implemented to bridge the gap between the traditional method of training nurses and online education. Despite the shortcomings of e-learners' experience, they have a positive attitude towards e-learning, and therefore they need management support to address these challenges. Creating conducive learning environment is cardinal in the success of e-learning programme in nursing.

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References

- [1] Billings DM: A framework for assessing outcomes and practices in web- based courses in Nursing: Journal of NSG Education 2000, 39 (2): 60-67. Pubmed Abstract.
- [2] Correspondence: Vivian Mwiinga, Ndola School Of Nursing, Postal Agency, Ndola. Zambia
- [3] Chang, CS (2000). The effect of attitude and self efficacy and college student performance on online instruction. In PHD Thesis, University of Kansas.
- [4] Czerniewicz L, Brown C. (2005)The uses of information and communication (ICT) in teaching and learning in South African higher education practices in the Western Cape. *Perspect Educ.* 2005; 23(4):1-18.
- [5] Elango, R. Gudep, V. K. and Selvam, M. "Quality of e-Learning: An Analysis Based on e-Learners' Perception of eLearning." *The Electronic Journal of e-Learning* Volume 6 Issue 1, pp. 31 - 44, available online at www.ejel.org
- [6] Gerkin KL, Taylor TH, Weatherby FM; The perception of Learning and Satisfaction of nurses in the online Environment. *Journal for Nurses in staff development* 2009, 25 (1): 8-13
- [7] ICT facts and figures 2013. The world in 2013. Geneva: International Telecommunication Union; 2013 <http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013-e.pdf>, accessed 3 October 2014).
- [8] Imel, S (2000), e-Learning: Trends and issues alert. Office of Educational research and Improvement, Washington DC.

- [9] L Mansour, B (2007, P4) Student positive and negative experiences in hybrid and online classes, college student journal, 41 (1), 242-248.
- [10] Martens, R Bastiaens, T and Kirschner, P. (2007). New learning design in distance education: The Impact on student perception and motivation. Distance Education, 28 (1), 81-93.
- [11] Mangan, K. S. (2001) "Expectations evaporate for online MBA programs", Chronicle of Higher Education, 48(6), p31.
- [12] Peter Kokol, Helena Blazon, Dusanka Micetic-Turk, Patricia, Abbott. University of Maribor, University College of Nsg studies, Zuma ulica 15, Slovenia, John Hopkins University, School of Nursing. USA.
- [13] Pillay, P and Mtshali NG (2008), Clinical Supervision and support for bridging programme students in Greater Durban area.
- [14] Rosenbaum, D. B. (2001) May 28, "E-learning beckons busy professionals", ENR, 246(21), pp 38-42
- [15] Seufart, S: Back, A: Hauster, M (2000), e-Learning Cookbook for internet based learning. Smartbook, Zeurich.
- [16] Selcuk Karaman (2011), Nurses perceptions of online Continuing Education. BMC Medical Education 2011, 11: 86. <http://www.Biomedcentral.com/1472-6920//11/86> accessed on 6/07/15.
- [17] Smith, L. J. (2001) "Content and delivery: A comparison and contrast of electronic and traditional MBA marketing planning courses", Journal of Marketing Education, 23(1), p 35.
- [18] The Post 13 Feb, Thursday, 2014: Ministry of health accelerates nurses training using e-Learning programme.
- [19] Tiwari, A: LAM, D: YUEN, KH: CHAN, R: FUNGIT and CHAN, S (2005), Student learning in Clinical Nursing Education: Perception of relationship between assessment and Learning. Nurse Education Today, 25 940 pp 299-308
- [20] Vasquez Bronfman, S. Linking Information Technology and Pedagogical Innovation to enhance mgt education Wirtscraft Universtat. Wien
- [21] World Health Organization (2015) I. Al-Shorbaji, Najeeb. II. Atun, Rifat. III. Car, Josip. IV. Majeed, Azeem. V. Wheeler, Erica. E-Learning for undergraduate health professional education: a systematic review informing a radical transformation of health workforce development. ISBN 978 92 4 150826 1