‘Moving with the times’ taking a glocal approach: A qualitative study of African student nurse views of e learning

Karen Barker a,⁎, Grace Omoni b,1, Sabina Wakasiaka c,1, James Watiti d,2, Matthews Mathai c, Tina Lavender a,3

a Jean McFarlane Building, University of Manchester, Manchester, M139PL, UK
b School of Nursing Sciences, University of Nairobi, P.O. Box 19676-00202, Nairobi, Kenya
c University of Nairobi, P.O. Box 19676-00202, Nairobi, Kenya
d Research, Information and Advocacy, East, Central and Southern African Health Community Plot No. 157 Oloirien, Njiro Road, P.O. Box 1009 Arusha, Tanzania
e Epidemiology, Monitoring and Evaluation, Department of Maternal, Newborn, Child and Adolescent Health, World Health Organization, 1211 Geneva 27, Switzerland

ARTICLE INFO

Article history:
Accepted 7 January 2013
Available online xxxx

Keywords:
E-learning
Student
Nurse
Midwife

SUMMARY

Background: Information technology is a rapidly increasing means of communication in education and healthcare. This is also true in low resource settings, where electronic communication provides an opportunity for sharing information about health and wellbeing and enhancing learning for healthcare professionals.

Methods: A qualitative study whereby 51 year 3 and 4 student nurses at the University of Nairobi participated in 5 focus group discussions. Data were recorded, transcribed verbatim and analyzed using a framework approach.

Results: Four main themes were identified, ‘moving with the times’, ‘global networking’, ‘inequity as a barrier’ and ‘transfer of internet learning into practice’.

Conclusions: Information technology is already integral to students’ lives both personally and professionally and the students had a strong desire to find out what is happening globally. The familiarity of the internet contributes to the acceptance of e-learning programs as part of educational curricula. Students felt that e-learning ‘is here to stay’ and wanted to ‘embrace the concept.’ E-learning was generally welcomed however students suggested that it should be ‘supplementary’ to face-to-face learning. In order to incorporate e-learning ethically in low resource settings, resources should be sustainable, for example CDROMs and DVDs which are not dependant on internet access. Researching the views of qualified midwives might be the next step in promoting this valuable teaching method.

Crown Copyright © 2013 Published by Elsevier Ltd. All rights reserved.

Introduction

What is Already Known About this Topic?

- Information technology remains one of the fastest growing means of communication.
- Online learning in healthcare is welcomed but cannot completely replace face to face teaching.

What this Paper Adds

- Identifies the need to have a ‘glocal’ approach to new projects within health care settings.

Background

Information technology (IT) is increasing in higher educational institutions as a means of communication and knowledge sharing (Muirhead, 2007). This ranges from simple web based searches to entirely computer based education programs. The internet facilitates access to numerous sources of electronic information such as books, journals and research papers (Ani, 2009) which can support student learning. According to Nwezeh (2009) when used appropriately IT and the internet ‘fosters and enhances teaching and learning’ (pg. 1) and technologies such as virtual learning environments are now widely used (Moule et al., 2010). Other new opportunities such as wiki’s, podcasts and weblogs are also being used although use is reported to be ‘patchy’ (Moule et al., 2010 pg. 3) and this is particularly true in Africa. E-learning is one method of delivering ‘online’ instruction and relates to web/computer based programs and virtual learning environments (Manochehr, 2006). These can be delivered using different media
sources (CD-ROMs, DVDs) and can either be student or instructor led. A number of advantages have been proposed for e-learning (The Higher Education Funding Council for Education [HEFCE], 2005), including meeting the greater diversity of student needs; increasing the flexibility of provision; enhancing the integration of study with work and leisure; and meeting individual needs. Additionally, e-learning has the potential to improve access to, and reduce the cost of education (Alexander, 2001); a factor of vital importance in low resource settings.

In low resource settings, mobile ('M') telephone technology is one of the fastest growing methods of communication (Vital Wave Consulting, 2009). This could be integral to the sharing of healthcare services and information. A number of projects have been introduced using such technology. For example, one study used text messaging to encourage HIV testing in areas such as Africa where the disease is most prevalent (Economist, 2009). Bon Tempo (2011) describes a simpler way in which the use of a telephone could save lives. A newly qualified nurse in Kenya attended a birth but required some support as she lacked confidence in her newly acquired skills. She called her mother, also a nurse, for advice and support which, given remotely assisted in a positive outcome for all concerned (Bon Tempo, 2011). Information technology, however, might not be a panacea for all ills; as Lucas (2008) suggests, it can fall foul of corrupt healthcare systems and pilot studies might not be supported in the long term. Ibrahim (2009) highlights the ‘promise and challenge’ of some pilot studies whereby the benefits of technology are ‘blunted’ by cost, sustainability and the difficulty of integration into healthcare systems (pg. 2). This can be due to the chaotic systems in some hospitals in parts of Africa, the intentional dispersing of treatments because they are provided by traditional healers or being made available only in areas where they would be profitable (Lucas, 2008).

Although e-learning has been criticized for being prescriptive and being developed using a ‘top down’ approach (Murhead, 2007), recent advances allow for an increasing student participation and the development of independent learning (HEFCE, 2005). Students globally, use the internet for social networking and seeking contemporary information and now expect to be able to access learning online. The development of sustainable online materials requires knowledge and skills and should be underpinned with learning theory (Clarke, 2009) that is relevant and meets the needs of the students.

Although ‘slow and disparate’, healthcare workers are increasingly using technology (Liddell et al., 2008, p 2) in the clinical setting in relation to record keeping and communication. For busy practitioners e-learning could be used for mandatory updating and to ensure that practices are kept up to date; a statutory requirement in the United Kingdom (NMC, 2008).

Most healthcare professionals would agree, however, that online learning cannot replace all teaching, as communication and team working are essential parts of the role. There are also disadvantages; e-learning does not suit all learning styles. As this study suggests unmotivated or disorganized students may fail to keep up with their lessons, may miss the social interaction and access to efficiency of computers may be an issue. Certainly the move away from traditional andragogic approaches means that students drive the learning (Harrison, 2010) which may not meet all student learning styles.

In health systems with limited resources, putting evidence into practice can be problematic, although it is not fully understood why (Siddiqi et al., 2005). It could be that traditional teaching methods are costly and attendance is challenging for those living and working in rural areas. This use of technology may go some way to addressing the challenges by providing isolated providers with professional networks to remain current and seek advice (Jerome-D’Emilia and Merwin, 2010). It may also help reduce the cost of education, improve communication and provide increased collaboration opportunities (Sife et al., 2007).

In Africa, where this study was undertaken, the demand for e-learning is high. However, for the majority, access is often limited by financial constraints, especially in midwifery units, which generally are low priority in budgetary allocations.

The Study

Aims

This study aimed to explore student’s views and experiences of e-learning as potential options for inclusion in a midwifery training package.

Design

A qualitative interpretive approach was used.

Setting

The study was carried out at the School of Nursing Sciences, University of Nairobi and two affiliated hospitals. The University is situated in a fast growing city with a population of over 3.5 million and a life expectancy of 52 years for men and 55 years for women (WHO, 2011). The college of health sciences is situated on the Kenyatta Hospital campus, this is the largest referral and teaching hospital in the country, having a capacity of 1800 beds and over 6000 staff member (Anon, 2011). The other site is a private, not for profit institution that provides tertiary and secondary level health care services.

Ethical Considerations

The research was given full ethical approval from the participating Universities of Nairobi and Manchester in order to protect the students and nurse/midwives from harm and ensure that their dignity and rights were upheld. The participants were also assured that confidentiality would be maintained and codes were used in place of their names. Their right to decline or withdraw at any time was conveyed to them by a lecturer, who was not associated with their training but was from the same cultural background.

Participants

The participants are students undertaking the Bachelor of Science Nursing course which incorporates a 12 week placement in maternity care but which does not always run alongside the theoretical unit. Theory related to maternity care is taught by a traditional, didactic method to large cohorts of students. There is currently no e-learning provision within the program.

Unlike in many parts of the world, midwifery training is not a distinct course in Africa and nursing students undertake a theoretical module and have a three month clinical practice related to maternity care. Once qualified this allows them to work as ‘midwives’ in all settings.

The participants were either year 3 or year 4 (final year) students on the nursing degree program. Students were informed about the study and invited to participate, the study size being determined by their availability within the study period. A purposive sample of students was invited based on whether they had already undertaken their maternity experience or where about to do so; participants were therefore well placed to evaluate e-learning in relation to midwifery care.

Methods

Data were collected using audio taped focus group discussions (FGD). This method was chosen as the students were homogenous groups who could be considered vulnerable due to their status in the University and clinical practice (for example if they were critical of clinicians) and could therefore support each other. The groups were facilitated by a lecturer who did not teach the students so that they would feel able to speak freely about any theoretical limitations.
The facilitator was also from Nairobi so was familiar with the terms students might use and the local settings, she was able to easily build a rapport with the students.

FGD typically have small numbers of between 8 and 10 which allow all participants to become involved, for the facilitator to reveal a depth of data and due to the possibility of sensitive issues to be discussed (Ritchie and Lewis, 2007). Four of the groups within this study comprised of 10 students and one group of 11 to enable all students attending to participate. At the beginning of the interviews introductions were made and the details of the study recapped, the students being reminded that they could withdraw at any time. Discussions were initiated using a series of prompts in order to keep the students focused on the topic area and to ensure that all groups followed the same format.

### Data Analysis

The data were transcribed verbatim by two researchers (KB, TL) using an interpretive approach. The framework approach, which was developed by researchers exploring the aspects of society (Furber, 2010) was selected for data analysis (Ritchie and Spencer, 1994; Ritchie and Lewis, 2003). This frequently used method of qualitative analysis (Furber, 2010) is used to identify themes from the data whilst ensuring true accounts are represented (Smith and Firth, 2011). This method also provides an efficient and comprehensive process that enables interpretation which remains true to the original data (Smith and Firth, 2011).

Analysis using the framework method proceeds from familiarization of the data, through the identification of a thematic framework, indexing, and charting of the data and finally mapping and interpretation of the emergent themes. From these initial categories, a draft theoretical framework was identified. The theoretical framework was further refined during the indexing phase.

Indexing — here the categories in the theoretical framework were explored against the data in the transcripts (Furber, 2010). This stage enabled the two researchers carrying out data analysis to discuss the initial categories further alongside the relevant data, and also within the context of the whole transcript. This discussion resulted in some initial categories being merged into broader themes (Smith and Firth, 2011).

Charting — finally, the emergent categories were linked to the participants own words in a chart. The charts provided a means of summarizing the data within each category on the theoretical framework in an easily visible format. Tables were designed using Microsoft Word 2007 software (Furber, 2010).

Mapping and interpretation — the final stage of the framework process involved mapping and interpretation of the data summarized in the charts in order to synthesize the data as a whole (Ritchie and Lewis, 2003). The researchers reviewed the chart information and compared and contrasted the themes with each other. The summarized data were re-examined and compared again with the original transcript data. This involved further merging of categories. Eventually, the final themes in the theoretical framework were agreed by both researchers. This ‘forward and backward’ movement between the data and developing analysis ensured that the themes remained true to the participant’s accounts (Smith and Firth, 2011).

An example of one of the categories from the final theoretical framework is highlighted in Box 1 as ‘Global Networking’.

### Box 1

**Charting.**

<table>
<thead>
<tr>
<th>Global networking</th>
<th>Wider views</th>
<th>Widens your thinking… you just read (google) and come out with your own conclusion (211–212)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political awareness</td>
<td>Have a wider general view of knowledge maybe political aspects because it is related to health (213–214)</td>
<td></td>
</tr>
<tr>
<td>Standardizing care</td>
<td>The internet helps you to know what other people outside there are discovering (216)</td>
<td></td>
</tr>
</tbody>
</table>

### Results

Fifty-one students participated in 5 focus groups (year 3, n = 20, year 4 n = 31). The median age of students was 22 years (range 20–24). Twenty-two male and 29 female students participated.

Using the framework approach, four main themes were identified and have been presented in order of importance as established by the analysis of the FGD.

- Moving with the times
- Global networking
- Inequity as a barrier
- Transfer of information into practice.

### Moving with the Times

The students all had access to the internet either at the University or at home using computers, laptops and telephones and this was seen as an essential part of modern life. Connection varied, especially in the more rural areas where this type of communication was particularly important. Students always tried to find a means of finding access for example ‘in urban settings we have cyber cafes (FGD 2 line 145).’

The students were well acquainted with the internet in their social lives. They felt that a wide range of information was readily and instantly available in a number of formats. If they became tired of reading they could find a video clip of an exercise class to watch or chat to someone via social networking sites. They liked to seek clarification on what they were hearing or reading or to just purely find out more on the topic. One student described that ‘on the net you click on a particular thing and it comes (information) (FGD 3 Lines 181–182)’ whilst another student added that ‘there is no boredom on the internet, you can change and do something else (FGD 3 Line 190).’

The students were keen to incorporate e-learning into their studies and to some extent already used it to access supplementary and up to date material. Books and journals were seen as being out of date or for the ‘older generation’. They identified that times were changing, not only for them but worldwide, and they saw that it was important to move with them. ‘I practically use it everyday on assignments (FGD 2 line 149)’ and for students placed in more rural settings ‘if I can access a lecture (online) I don’t have to wake up at six to prepare for class (FGD 5 line 222)’. They were keen also to illustrate how eager they were to try new learning methods ‘I would take any course (via the internet) I don’t have to sit in class and I will be flexible and convenient (FGD 2 Lines 160–161)’ another added that all students and qualified staff should ‘accept change with a positive attitude (FGD 5 line 232–233)’. One comment encapsulated the thoughts of many of the group ‘you can’t avoid the e-learning. We need to embrace it (FGD 1 Lines 359–360).’
Global Networking

Students identified and appreciated the power the internet has to reach beyond their own country for information. They were intrigued by the differences in training students receive globally and the resources available to them.

It was felt that the internet has offered great opportunities for the sharing of information for those working in low resource settings who were keen to try to look for best practices worldwide. One student commented that ‘the internet can be used to increase knowledge. ... Something has changed I can easily go and check globally (FGD 1 lines 328–329)’.

It was also important to them to be responsive to changes in healthcare based on wider issues such as the political climate, resource challenges and again what was changing worldwide. Some sites were noted to be more reliable than others when seeking information, especially those with a global focus. Social networking sites were mentioned frequently throughout the discussions being used for personal and professional reasons, enabling students to ‘have a wider general view of knowledge maybe political aspects because it is related to health (FGD 1 lines 213–214)’.

Inequity as a Barrier

Inequities were a common theme throughout the discussions which related to theoretical study, clinical practice and lifestyle. Students were extremely honest in relation to this matter, highlighting their dedication and commitment to undertaking their studies which are costly and often mean living away from their families. They were specifically asked about access to, and any challenges to computer use.

The number and availability of computers were obvious issues. There were limited resources, some computers were exclusively available for students on specific programs of study but left unused and unavailable to others. ‘The number of computers does not meet the needs of students (FGD 1 line209)’.

The inequity between poorer and more affluent geographical areas was raised as a challenge — the students being aware that not everyone had access to the internet. Some of the students were from disadvantaged backgrounds themselves and it was clear that they were keen to ensure that resources were available to all, for example ‘in Kenya we are advantaged because we can access the information but... may be difficult in other areas (237–238)’. This reflected the placements that students might have away from Nairobi where they had difficulties accessing the internet.

Transfer of Information into Practice

Concepts within this theme related to the influence the internet had on clinical practice and specifically in relation to midwifery care. Students, as we have seen already, use the internet for learning and are keen to ‘embrace’ this new technology. Teaching in Africa tends towards a traditional didactic style, which prior to the advent of e-learning was probably best suited to large group teaching. Students however find that this is not appropriate for all sessions and feel that some information is lost due to the number of students explaining that ‘if we are 60 students with one teacher holding up partograph and all required to see it it’s difficult (FGD 2 lines146–147)’.

They did acknowledge that online learning in nursing and midwifery could not replace actual ‘hands on’ or simulated experience but that some online learning would be welcomed. On occasions theory was taught some months in advance of the related practice. This meant that the students had forgotten the content of the sessions and had only notes to assist them. One of the benefits of online learning is that students can revisit material as many times as they need to. One student remarked that ‘about half the aspects you need to be in class... you can't tell me you can learn how to dress a wound from the internet (FGD 2 lines162–164)’.

Students also wanted to have a variety of approaches to learning such as videos and CDs in their own language which assisted them in completing the partogram. Again they reinforced the fact that information on the internet was readily available and ‘instant’ noting that ‘when it’s the progress of labour, if you have a video, you can see what is happening (FGD 1 lines 242–243)’.

Students were mostly in favor of new ways of learning, already using the internet for personal and professional information. They did however observe that it cannot replace the face-to-face communication that health care professionals need to develop or be a substitute for study noting that ‘it (the internet) can make you lazy... know a lot theoretically but what about practically (FGD 3 lines 185–186)’.

Discussion

This study aimed to explore student’s views and experiences of e-learning as a potential option for inclusion in a midwifery training package. Students stated that they used the internet to supplement taught sessions, that they liked the variety of delivery modes and would use it for personal as well as professional purposes. They did appreciate that some internet sites were more reliable than others which supports Long and Greenberg (2003) discussions that the web is an unregulated forum to exchange information and that the same critical and evaluative skills applied to research should be used to ensure reliability of data on the world wide web.

The term e-learning varies in the literature and studies have acknowledged the vast number of terms and definitions provided in relation to e-learning (Moule et al., 2011; Ellaway, 2011). E-learning utilizes information and communication technology (ICT) to facilitate learning via a flexible and student friendly means and can include a variety of media such as the television, audio tapes, and for online sessions the CD-rom.

A useful definition for e-learning in relation to medical education is provided by Ellaway (2011) pg. 456 ‘e-learning encompasses a pedagogical approach that typically aspires to be flexible, engaging and learner-centred, one that encourages interaction and collaboration and communication’. This supports the comments of students that they liked the use of video, chat rooms and accessing websites that help them understand what is happening globally. Interaction and communication however were more limited. Some forms of e-learning such as tapes, CD ROM’s and DVD’s which do not require the internet would be useful in low resource settings.

Interactive methods are essential for students to engage actively in e-learning. According to Moule et al. (2011) e-learning is mainly at an instructivist level whereby students do not play a proactive role and information is provided by the teacher for them to access. Developments should be made to encourage a constructivist level of learning that is student focused (Moule et al., 2010). These might include Wikis and blogs. Facebook and other social networking sites were used frequently by students in Africa which will play some part in developing these skills and might, in the future be used in virtual learning environments.

A number of drivers have advocated the use of e-learning both in Higher Education Institutions and the National Health Service (HEFCE, 2009). The concept of the lifelong learner and the flexibility that e-learning offers would be appealing to those working in the healthcare professions. There are many innovations in this area for example e-learning modules related to anatomy and physiology in the medical curriculum (Khogali et al., 2011). The results of the Khogali et al. (2011) study suggest that students responded well to the interactive activities provided and liked the flexibility it offered. Myrick et al. (2011) included preceptors/mentors in their study which found that offering the normal face to face conference as an online option provided mentors with the information they required but also extended their ICT skills. It is important to establish if the skills learnt in the HEI have a positive effect in the workplace. Bembridge
et al. (2010) performed a qualitative study which suggested that this is dependent upon a number of influences such as educational and organizational factors for example a lack of access to computers and recommends that curricula provide opportunities to develop ICT. The lack of resources is echoed by the students in this study who found that computers were not always available and that access to the internet was sometimes limited.

Although students had a strong desire to find out what was happening in healthcare globally they acknowledged the differences in resources and in particular a rich/poor divide. Sife et al. (2007) highlighted the need for a positive attitude, a systematic approach for implementation and adequate resources in order for new technologies to be successful in developing countries. Brown (2003) also cites this lack of an infrastructure as a barrier to information technology suggesting that this is one of the reasons that mobile-technologies, which are more readily available than personal computers ‘are alive and kicking quite strongly in Africa’ (page 8). Projects need to be sustainable and not offering pilot studies that cannot continue long term once funding has dried up. In our study the students were confident and encouraging of e-learning, however the lack of resources is an issue and lower cost methods need to be used, for example CD ROMs are relatively cheap and can be used even where internet access is not available.

It has already been identified that communication technologies are rapidly growing and pivotal in educating a population who would not normally engage in the public health arena (Vital Wave Consulting, 2009; Bon Tempo, 2011). Lucas (2008) suggests that information technology is expensive initially, requires a certain level of skills to produce materials and that healthcare workers might use information on the internet to support non-evidence based treatments. Students identified the need to have a wider view of healthcare in order to improve services in their own country but questioned whether resources and skills would be available to them. Mars and Scott (2010) suggest that a ‘glocal’ approach should be taken (page 238), that is a combination of global and local considerations indicating that each impact on the other. For example decisions made globally may not take into consideration local views which in turn could impede the success of a project. It is evident that the more health technologies advance the wider the disparity between developed and developing countries becomes. It is essential therefore that not only the views of the indigenous population are considered but that the resources are made available to support schemes, long term aimed at improving health. Within this study glocalisation was important as it raised awareness about national guidelines, availability of resources and communication. However views of local students would be imperative to successful implementation.

Students felt that e-learning would help bridge the theory-practice gap and that the information that is ‘just a click’ away on the internet could be useful for revision of classroom sessions and will maintain their attention. This would, it is anticipated ultimately result in improved patient care. It crosses geopolitical and time zones and provides access for the learner to a wealth of resources beyond those which he or she can easily access in his or her home institution’ page 216.

This supports the findings from our study but knowledge, resources and positive attitudes are vital for its success which could be a challenge in low resource settings.

**Limitations**

Information technology and e-learning are rapidly growing in low resource settings and are of obvious interest to students — in their own words the ‘younger generation’. Although this study was undertaken in one University, there were a large number of participants from two cohorts and the information was rich in detail. The findings are likely to resonate with students undertaking other courses in similar settings.

The focus groups were facilitated by a lecturer who did not teach the students directly and was from the area which meant she understood any local expressions or jargon. However the students were aware that some of the researchers were visitors to their institution and they respected our presence. This may have meant that they were more likely to participate in the focus groups or have been aware of our presence making discussions more limited. Reflexivity is said to be an important aspect of research and ultimately in ensuring rigor in the process (Hall and Callery, 2001). Rigor was aimed through the systematic transcribing of interviews, revisiting the data several times until the themes emerged.

It was also important to note that although the interviews took place on the University campus an outlying room was chosen away from any lecturing staff.

**Conclusion**

This study demonstrates that there is a desire for e-learning to supplement current traditional methods of teaching. This would be particularly important for students living and working in more rural areas where it has been acknowledged that information technology and communications are rapidly increasing. E-learning can be readily introduced and is cost effective providing students with sustainable, up to date materials that they long for. However, infrastructures must be in place to support this type of learning and education to ensure that it is used properly to enhance not only the student experience but improve patient care. Learning should also have a ‘glocal’ direction taking into consideration how developing countries can best utilize global resources.

**References**


