

Challenges and opportunities related to postgraduate evidence-based practice module using blended learning

JM Frantz, S Himalowa, W Karuguti, A Kumurenzi, D Mulenga, M Sakala

Department of Physiotherapy, Univeristy of the Western Cape

Correspondence to: Professor JM Frantz (jfrantz@uwc.ac.za)

Abstract

The use of information and communications technology (ICT) has become integral to health professions education worldwide. The incorporation of online facilities and maintaining of the face-to-face element make blended learning the 'best of both worlds'. Blogs can be used to create a relatively learner-centred environment that allows students to learn at their own pace. Though blended learning has been proved to be appropriate in higher learning institutions, it comes with challenges and opportunities. Our study intended to highlight the challenges and identify opportunities encountered by an evidence-based practice (EBP) postgraduate class who used the blended learning model of learning. An action-based research methodology was utilised in this study. This involved data gathering, action planning, action taking and action evaluation. Data were gathered through the use of a blog that was accessed by all participants. They made comments which were reflecting their perceptions on the model that was used for the course. The students gave consent to participate while permission from the physiotherapy head of department was also acquired. Deductive analysis was used for data analysis. The information from the blog was extracted and converted into text files. Coding and analysis into opportunities and challenges as expressed by the participants was performed. Theoretical saturation through every reviewer's agreement and satisfaction about the information was included. The data consisted of 94 postings made of primary postings (22) and responses (72). All the authors acted as reviewers. Certainty

was achieved by discussing any ambiguity in coding. Any necessary amendments were made. The participants reported to have experienced some challenges pertaining to blended learning. The blog that was used as a media between students and the facilitator was inefficient in some way. Some students could not access it when required and some resources in the blog were inaccessible. The wireless internet connection mainly used in this model was not reliable. However, there were opportunities experienced by the learners. These included easy interaction between the learners and the facilitator at any time. The model also reduced instructor dependence and made the learners more responsible of their work. The blog appeared as a resource base for skills development. Timely feedback involving solving the problems students encountered during the course improved the communication skills between the students and the facilitator. However, technology constraints involving the blog and the internet connection were overwhelming among the students while writing up the tasks allocated to them. Despite the fact that students faced some challenges, facilitators of blended learning such as the interaction between the students and the facilitator of the course were motivating to keep the course interesting. While students experienced some opportunities about blended learning, its future rests on averting the challenges associated with it more, especially in developing countries. If the challenges reported would be addressed in developing countries, blended learning can be effective in building students' engagement and relieving of overcrowded classrooms in higher learning institutions.

Introduction

The need to develop reflective practitioners in physiotherapy should in part be the role of higher education institutions. Various methods of learning can be used to promote this. According to Merrill¹ there are four distinct phases of learning for a student that are evident in all methods of learning and these include 'activation of prior experience, demonstration of skills, application of skills, and the integration of these skills into real-world activities'. As part of the constructivist perspective of learning, more emphasis should be placed on the learner, thus allowing knowledge to be built by the learner and not only given by the instructor.

Self-directed learning (SDL) is a method of instruction used increasingly in adult education within higher education institutions.² The authors define self-directed learning in terms of 'the amount of responsibility the learner accepts for his or her own learning'. However, within this current era, there is another challenge for the educator. The generational differences will definitely influence the approach to learning. The development of ICT has allowed for new approaches for delivering instruction in institutions of higher education. Thus we need to consider opportunities for learning using social media and e-learning. Students also demand

that our teaching presentations have structure and that the content being taught is evidence based.

Within the broad definition of self-directed learning, the self-directed learner needs to take control and accept the freedom to learn what they view as important for themselves. The degree of control the learner is willing to take over their own learning will depend on their attitude, abilities and personality characteristics.² Postgraduate students are considered adult learners and should be encouraged to become self-directed learners as part of their training. This active guided learning tends to remain in memory and can be more easily recalled by the learner.³ However, in becoming self-directed learners, there is a need to understand the role of the facilitator as well as the role of the learner.

Various studies have indicated the use of self-directed learning and education among health professionals such as doctors,⁴ dentists and nurses.⁵ In order to implement a programme or module using the self-directed learning framework one needs to understand the role of the facilitator. Literature has highlighted the role of a facilitator in education and clearly identified that one of the six main roles of the teacher is to be a facilitator.⁶ According to Schwartz,⁷ a facilitator's purpose is to

increase a group's effectiveness by helping it to improve its processes and structures. The facilitator assists the learning process of the student and the experience is intended to be collaborative. With the facilitator, learning shifts from 'passive' learning to 'active' learning. The facilitator must understand that the student comes with prior knowledge and the method of instruction by the facilitator should guide the student to 'the goal of interdependence'.⁸ In addition, the facilitator realises that 'effective learning is possible when the role of the teacher is not that of a controller and deliverer of pre-packed knowledge'.⁹ Thus the shift from the teacher-centred to student-centred instruction is being encouraged. The challenge that arises is: What are the guidelines for the shift from lecturing to facilitating learning?

Even though university requirements at postgraduate level allows for learning to exist, actual personal learning is controlled by, and dependent on the individual according to adult learning principles.¹⁰ These principles highlight that real learning occurs in self-directed and problem-oriented processes for adults, and each individual has to realise a 'need to know' and be intrinsically motivated to learn. This motivation needs to be nurtured, and Knowles¹⁰ highlights six factors as sources of motivation; these include social relationships, external expectations, social welfare, personal advancement, stimulation and cognitive interest. To be a life-long learning health professional, self-directed learning should be an essential factor for effective learning. In self-directed learning the individual's practical experience motivates and stimulates learning and can be linked to the process of evidence-based practice. This poses a challenge to the facilitator in ensuring that the four critical elements of learning are adequately incorporated. These elements include motivation, reinforcement, retention and transference. Limited information could be found linking self-directed learning, evidence-based practice and physiotherapists.

A postgraduate course in evidence-based practice was revised from the use of face-to-face instruction to a more blended learning approach which utilised face-to-face instruction, online discussions as well as other social media technologies. A blog was used to allow students to share knowledge, reflect and debate. Blogs can be used to facilitate 'small virtual groupings of individuals interested in co-constructing knowledge around a common topic within a community of practice'.¹¹ Refshauge & Higgs¹² describe an experiential learning framework that employs peer-assisted learning as one that allows the learners to relay their experiences, discuss their reflections and make conclusions after considering their own and their peers' inputs before finally forming an improved view of the experience.

Thus the aim of this study was to highlight the challenges and opportunities experienced by the students regarding the incorporation self-directed learning as a framework for learning the skills and methods of collecting and analysing the best evidence available to support practice.

Methods

The study involved five full-time MSc students undertaking an Evidence-Based Practice (EBP) Module as part of their degree programme. All students registered for the module participated in the study, and the lecturer acted as a facilitator. The students involved in the study were adult learners, with a BSc Honours in physiotherapy, and who had returned to higher education after having had a gap of at least 2 years of physiotherapy practice. The mean years of clinical experience in the group were 6 years.

This study was a cross-sectional qualitative study. The comments on the blog served as a reflective journal throughout the module. The data consisted of 22 blogs (primary postings) and 72 blog comments (respon-

es to primary postings); these were added together to represent a total of 94 blog postings.

Although the course was designed to make use of didactic teaching, a blended learning approach was used which included didactic teaching, group discussions and online activities. This was a small-scale study with a qualitative approach because the aim was to gather rich, detailed information reflecting the participants' viewpoints. This can be compared with the personal diary mode of data gathering in qualitative studies. Informed verbal consent of willingness to participate in the study was obtained. Permission was obtained from the head of department in which the students were registered and the registrar of the training institution. Liberty to withdraw from the study by not contributing to the blog activities was not granted but contributions of those individuals would be excluded if so desired. However, in the current study, all blog posts were made available for use in the publication.

Data analysis

Deductive analysis was chosen to analyse the data obtained from the blog. The blogs were extracted from the web and converted into text files. According to Tere,¹³ for an appropriate data analysis, one has to put the data in a format that will be easily analysed. Coding and analysis of the blog continued according to the challenges and opportunities mentioned by the participants. Theoretical saturation was achieved after every reviewer was satisfied with what he/she had included and agreed on by the other reviewers. All the authors acted as reviewers and any ambiguities in coding between investigators were discussed, reviewed and amended where necessary till certainty was achieved.

Results

The aim of this study was to highlight the challenges and opportunities experienced by postgraduate students in incorporating self-directed learning as a framework for learning the skills and methods of collecting and analysing the best evidence available to support practice. The information in the blog focused on various tasks and the results will be presented according to themes guided by the conceptual model of understanding self-directed learning. According to Song & Hill,¹⁴ 'the online learning context impacts on self-directed learning personal attributes of resource use, strategy use, and motivation'. Within all of this there are opportunities and challenges as highlighted by the following quotes.

Skills development

EBP module has allowed me to develop skills regarding the process of evidence-based practice as well as reflecting on what I do and how I do it. (Opportunity)

Blended learning has been very interesting to me at the same time challenging. For me it is the ultimate learning process in the 21st century. While I appreciate the research skills that I've learnt through blended learning, the question that I keep on asking myself is: how are we going to transform this beautiful learning process back home? (Challenge)

Improved learning

This course (EBP) came at a time when our knowledge on research was a key higher. However, our writing knowledge has been refined; our aspiration for further writing has been inspired ... I was able to learn, read and contribute at my own pace. (Opportunity)

Understanding and finding the correct tools to score the methodological quality [of an article] was another challenge as most of the tools aimed at assessing RCTs though there are limited tools that critically appraise other study designs which is commonly found in health professionals research ... others found this task easier and I felt pressured to complete the task in order to contribute. (Challenge)

Resources

The students were able to access each other's ideas and perspectives on various topics through the blog. However, the blog had both challenges and opportunities as a resource.

To my utter disappointment, it wasn't to be because I was never able to log in. This was at times devastating because I was not able to post anything I wanted to share 'my experiences' with my colleagues. It made me trail behind sometimes and this was never good at all. (Challenge)

The fact that we could share our ideas, opinions, challenges, information and knowledge made it far more important and worthwhile than what I see on Facebook ... I could refer back to the comments and additional resources place on the blog. (Opportunity)

Strategies

Students made use of the blog as well as face to face discussions to improve their skills. In addition the importance of the facilitator and feedback was also highlighted.

This process was somehow challenging, where sometimes I would write up any part of the article and feel I have done great but the facilitation and feedback from the lecturer really helped a lot. This assisted me in understanding immediately where necessary. (Opportunity)

I also like the fact that we had to share our challenges throughout the way because one would feel that he/she is not the only one facing the challenges. Support from others helped me cope with the challenges. (Opportunity)

The blog could at times keep the posted comments pending and therefore denying the bloggers the opportunity to read and respond on time. This was frustrating as I wanted immediate responses. (Challenge)

Task context

Students reported challenges and opportunities within the process of evidence-based practice and finding information supporting their research question.

Very little literature around Africa was found. This hampered my progress regarding the desired tasks. (Challenge)

Some articles were difficult to review since there was a limitation in drawing out the specific conclusions of the study and research design. I struggled with this. (Challenge)

The methodology phase has made me realise that teaching the theory relating to tools and techniques is not as effective as providing the students with the opportunity to apply the tools themselves. (Opportunity)

I found being able to refer to the outline of the tasks on the blog and the comments from others associated with it good as I could go back all the time when I did not understand. (Opportunity)

Discussion

Blended learning is a combination of any form of technology-facilitated learning and face-to-face instructor-led training.¹⁵ The traditional models of learning are being replaced by the emergence of new advanced technologies that provide the facilitators with an exceptional opportunity, creating blended learning environments that are highly interactive, meaningful and learner-centred.¹⁶ EBP is a movement within health professions education that allows professionals to identify, disseminate and promote the adoption of practices based on research. Designing a postgraduate EBP module is challenging, as it would be expected that the evidence base expands from pure intervention studies and RCTs to including evidence on contextual factors using qualitative research. How to best teach EBP has become a major point of discussion in many health professions but teaching concepts of EBP remains a challenge in professional education.¹³ In exploring effective pedagogies, educators have emphasised the benefits of applying the principles of adult learning theory to EBP modules.

In the current study students highlighted the challenges and opportunities faced when allowed to incorporate the principles of self-directed learning in a module. The use of information and communications technology (ICT) has become integral to health professions education worldwide. Blogs can be used to create a relatively learner-centred environment that allows students to learn at their own pace. This was evident in the current study when participants reflected on their experiences and indicated that they could continuously refer back to comments and tasks on the blog. In addition, participants also indicated that they could 'learn, read and respond' at their own pace. However, research has highlighted that there are concerns that developing countries lack the relevant infrastructure and skill base to effectively incorporate ICT in education.¹⁷ Although learners of today have tried to embrace technologies like blogging to enhance their learning in institutions, the students in the current study also highlighted their concern of how they would be able to effectively implement this method of teaching and learning in their home countries in Africa. Currently this challenge is also being highlighted in medical education in Africa.¹⁸

Conclusion

Although blended learning can be used to adjust to the essential learning methods and overall learning environment of the student, it is still evident that challenges do exist with this method. The challenges related to blended learning that arose during the course include, but not limited to, technology constraints involving the blog and the internet connection. Despite the fact that students faced some challenges, the facilitators such as the interaction of the students and the facilitator providing feedback on students' progress were motivating to keep the course interesting. The blog allowed a greater and timely feedback such as solving the problems the students encountered during the course and improved the communication and IT skills between the students and the facilitator. If the challenges reported would be addressed in developing countries, this type of learning can be effective in building students' engagement in learning, relieving overcrowded classrooms found in most African countries. In all, there was a multitude of success to both the facilitator and students during this course.

Implications for practice

Incorporation of blended learning in physiotherapy will lead to enhancement of learning due to access to literature and reduction of dependency on facilitators, which is a characteristic of didactic learning and improved responsibility and autonomy over the learners' work.

References

1. Merrill D. First principles of instruction. *Educational Technology Research and Development* 2002;50(3):43-59.
2. Fisher M, King J, Tague G. Development of a self-directed learning readiness scale for nursing education. *Nurse Education Today* 2001;21:516-525.
3. Ryan G. Student perceptions about self-directed learning in a professional course implementing problem based learning. *Studies in higher education* 1993;18(1):53-63.
4. Tagawa M. Physician self-directed learning and education. *Kaohsiung Journal of Medical Science* 2008;24(7):380-385.
5. Murad MH, Varkey P. Self-directed learning in health professions education. *Ann Acad Med Singapore* 2008;37:580-590.
6. Harden RM, Crosby J. The good teacher is more than a lecturer -- the twelve roles of the teacher. *AMEE Guide No 20: Medical Teacher* 2000;22(4): 334-347.
7. Schwarz R. Using facilitative skills in different roles. In R. Schwarz, A. Davidson, P. Carlson, & S. McKinney (Eds.), *The Skilled Facilitator Fieldbook: Tips, Tools, and Tested Methods for Consultants, Facilitators, Managers, Trainers, and Coaches*. San Francisco, CA. Jossey-Bass 2005; 27-32.
8. Musinski B. The educator as facilitator. A new kind of leadership. *Nursing Forum* 1999;34(1):23-29.
9. Kwan C. Learning a medical pharmacology via innovation: a personal experience at McMaster and in Asia. *Acta Pharmacologica* 2004;25(9):1186-1194.
10. Johnston AK, Tinning RS. Meeting the challenge of problem-based learning. Developing the facilitators. *Nurse Education Today* 2001;21:161-169.
11. Boulos MNK, Maramba I, Wheeler S. Wikis, blogs and podcasts: a new generation of Web-based tools for virtual collaborative clinical practice and education. *Biomed Central Medical Education* 2006;6:41.
12. Refshauge K Higgs J. Teaching clinical reasoning. In: J. Higgs & M Jones (eds) *Clinical Reasoning in the Health Professions*. Oxford: Butterworth-Heinemann, 2000. 2nd edition, pp141-147.
13. Portney LG. Evidence based practice and clinical decision making: it's not just the research course anymore. *Journal of Physical Therapy Education* 2004;18:46-51.
14. Song L, Hill JR. A conceptual model for understanding self-directed learning in online environments. *Journal of Interactive Online Learning* 2007;6(1):27-42.
15. Moeb S, Weibelzahl, S, Dowling NA. Supporting facilitators of blended learning with guidebooks 2007; Eighth Annual Irish Educational Technology Users' Conference, Dublin, Ireland National College of Ireland. <http://www.easy-hub.org/stephan/moebes-edtech2007.pdf> (Accessed 3 September 2010)
16. Kirkley SE, Kirkley JR. Creating next generation blended learning generation environments using mixed reality, video games and simulations. *Tech Trends* 2005;9(3):42-54.
17. Chandrasekhar CP, Ghosh J. Information and communication technologies and health in low income countries: the potential and the constraints. *Bulletin of World Organization* 2001;79(9):850-855.
18. Williams C, Pitchforth E, O'Callaghan C. Computers: the Internet and medical education in Africa. *Medical Education* 2010;44:485-488.