



Norwegian Nurses' Experiences with Blended Learning: An Evaluation Study

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Abstract

An increasing number of nurses undertake continuing education via information and communication technologies. Development of best practice, based on students' own experiences, is vital in order to create the most effective learning environment. This paper describes the challenges to and facilitators of learning for a group of Norwegian nurses enrolled in a postgraduate course in wound management delivered by blended learning, which combines face-to-face and online components. Data was gathered through a focus group interview and inductive content analysis was used to identify themes emerging from the data. A number of both personal and academic facilitators, and challenges impacted on these adult learners. Technical and academic problems combined with a lack of time created a steep learning curve for these adult students. Valuable feedback, IT support at home and an increased competence eventually gave them a foundation for lifelong learning. Blended learning is an important way to offer postgraduate courses to give adults access to continuing educational programmes independent of geographical location. Both academic and personal challenges and facilitators should be taken into account when educators design blended learning courses in order to facilitate an effective learning environment for adults through the best blend of face-to-face and online learning.

Keywords: Blended learning, electronic learning, adult students, academic discourse, deep learning approach, lifelong learning, evidence based nursing

Introduction

Nurses comprise the largest group of health care professionals in Norway (Statistics Norway, 2004). Given this fact, the provision of quality health care services depends to a considerable extent on the knowledge and skills of nurses, individually and collectively. It is essential, therefore, that nurses maintain currency with respect to their field of practice (Eason, 2010).

Over the last two decades an important influence on nursing practice and education has been evidence-based practice which has seen “an explosion in the amount of best practice evidence available to nurses” (Kedge & Appleby, 2009 p. 635). Accompanying this has been a focus on nurses as independent lifelong learners (Eason, 2010; Kedge & Appleby, 2009; Roberts, 2011), which to be effective requires a deep approach to learning (Cowan, Roberts, Fitzpatrick & While, 2004), information literacy, writing skills (Tarrant, Dodgson & Law, 2008) and evidence-based nursing (Eason, 2010). This has resulted in nurses in many parts of the world having to undertake continuing education in order to maintain licensure or registration.

In a country such as Norway which has a relatively small population of 4.9 million people (Statistics Norway, 2011) dispersed over a wide and geographically diverse area it can be difficult for nurses to engage in continuous learning when they may live at some distance from an appropriate educational institution. As well, lack of employer support and family commitments can prevent attendance at professional development opportunities at institutions of higher learning. Given these factors, e-learning has been embraced by many as means to provide opportunities for engagement in on-going learning. E-learning is a key component of what has become known as ‘flexible learning’, where the underlying principle is being able to study without the requirement to attend classes at a specified time or place (Kliger & Pfeiffer, 2011).

As an increasing number of nurses world-wide are undertaking continuing education via information and communication technologies (ICT) there is a concomitant imperative to understand what constitutes effective implementation and design of courses using flexible learning (Atack, 2003; Cook, Garside, Levinson, Dupras & Montori, 2010; Levett-Jones et al., 2009). One approach to flexible learning is that of ‘blended learning’, which combines face-to-face and online learning (Singh, 2003).

Quality education and student satisfaction is important for success (Brown & Mazzarol, 2009; Gruber, Fuß, Voss & Gläser-Zikuda, 2010) and to ensure quality in higher nursing education it is important to listen to stakeholders’ experiences (Reames, 2010). Effective course design should be a continuous process taking into account ongoing changes within the health care sector as well as students’ experiences related to facilitators and challenges to learning. Even though e-learning has been widely embraced it is surprising to learn, as a number of authors assert, that little is known about students’ experiences and attitudes towards flexible learning in higher education (Atack, 2003; Atack & Rankin, 2002; Bekele, 2010; Moule, Ward & Lockyer, 2010; Yu & Yang, 2006). Studies of satisfaction and motivation in internet-supported learning are dominated by quantitative research (Bekele, 2010) and this study addresses the gap in qualitative research by investigating the experience of a cohort of Norwegian Registered Nurses undertaking a postgraduate course in wound management through blended learning.

The aim of the study was to reveal those factors which either challenged or facilitated participants’ learning.

Description of the Wound Management course

Chronic wounds are a significant health problem and are generally caused by diabetes, arterial and/or venous disease, pressure or cancer (Kranke, Bennett, Debus, Roeckl-Wiedmann & Schnabel, 2009). The true incidence and impact of chronic wounds are difficult to assess (Kranke et al., 2009), but prolonged life expectancy and the occurrence of life style diseases is expected to raise the incidence. Effective prevention and treatment requires specialist expertise and the blended delivery course investigated in this study was developed in 2007/2008 at a Norwegian University College following a request from the Norwegian Wound Management Association. As there was no national educational standard for nurses working with chronic wounds in Norway up until 2007 it was recognised that there was a need for formal education to address the impact of chronic wounds on the Norwegian population. The course used blended learning to provide Norwegian nurses an opportunity to attain, independent of geographical location, a formal qualification in chronic wound management.

According to Picciano (2009), a generally accepted definition of blended learning does not exist; however, at a fundamental level it involves a combination of face-to-face and online learning (Singh, 2003). What is not clear is the ratio of online learning to face-to-face learning that constitutes an effective blended learning environment (Garrison & Kanuka, 2004). In this example, decisions on course design, content and delivery are underpinned by the work of Salmon (2004), Salmon & Edirisingha (2008), Thornhill, Asensio & Young (2002), the “Norwegian Diamond”¹ (Bjørndal & Lieberg, 1978), previous students’ feedback and the authors’ experiences as nurse educators. This course combined: (1) four face-to-face meetings; (2) four clinically relevant assignments; (3) podcasts; (4) discussion boards; and (5) use of e-mail. The e-learning platform that was used for these disparate components was Fronter. During the 5 ½ month duration of the course there were 13 days of face-to-face meetings. As argued by Stølen (2008) adult students benefit from well organised studies in order to successfully combine study, work and home life, therefore a study guide was developed, which detailed the timelines, assignments, assessment criteria, recommended readings, and contact information.

It is essential that the pedagogy, not the technical aspects, determine the structure and content of e-learning (Adams, 2004) and this course was underpinned by constructivist and sociocultural approaches to learning. Constructivist theory emphasises peer-to-peer interaction to develop multiple perspectives (Anderson, 2004); students were therefore expected to collaborate on written assignments and to provide feedback to their peers. The overall aim was to facilitate nurses capable of learning-to-learn, problem solve and develop critical understanding (Medel-Anonuevo, Ohsaka & Mauch, 2001). A deep learning approach promotes self-directed learning which is synonymous with effective lifelong learning (Jarvis, 1987). Deep learning might be facilitated through interactive dialogue in learning (Garrison & Kanuka, 2004) with the use of practice-related problems being beneficial for facilitating lifelong learning (Jarvis, 1987). Therefore, two of the four clinically focused assignments required collaboration between 3-4 students. Relevant tasks are likely to promote deep learning (Entwistle, 1986); therefore, the assignments were situated in the students’ everyday work experiences. The main aim of many postgraduate courses is to reflect on existing practice and use available literature to master or improve existing practice (Danielsen, 2008) and in this example the students’ assignments were based in reflection on existing practice and literature searches for new, improved or “best practice”.

The first face-to-face meeting at the University College introduced the course and provided the students with essential knowledge on how to access and

navigate Fronter, the learning platform, and the library databases. The four face-to-face meetings were predominantly dominated by lectures and workshops. The workshops were either partly instructional, focusing on practical skills in wound care or were problem solving sessions in which students collaborated on clinical scenarios. The philosophy was that combining face-to-face meetings, clinically relevant assignments, information literacy, academic skills and competence in evidence-based practice prepared students for lifelong learning.

The online learning component involved the use of Fronter for communication, discussion, posting assignments, responding to peers and accessing course material. For students to become familiar with, and master, simple tasks in Fronter they provided a picture of themselves with short textual description as an initial task. The idea was derived from the five-stage model of online teaching and learning developed by Salmon (2004). Fronter was constructed so that the groups of 3-4 students had a private area within Fronter, in addition to the common area all students could access. The first assignment was an individual written task which was shared only between group members who provided feedback to one another. This was done in order to minimise stress for these adult students who might have had little experience in writing academic papers or who had not been engaged in higher education since their undergraduate studies. Additionally, the private domain within Fronter was available to students for communication and collaboration around the assignments which was later shared with the whole cohort for reading and peer response.

Discussion boards were created and moderated by the course leader, to provide quick responses to questions and a supportive forum for course members. One discussion board was open to all questions, a so-called "student room" or "coffe-shop". Students were encouraged to post any conceivable question here as both the questions and the course leader's answers might be relevant to all participants. Other discussion boards were created for particular assignments and peer feedback, or to specific workshops and related questions. Private questions for the course leader were posed by e-mail or telephone. Podcasts, combining audio and text, were available on Fronter to assist students with academic writing. Some focused on generic academic skills while others addressed issues pertaining to specific assignments. Podcasts showing real-world examples of patient assessment and management by wound care specialists were also available. One of these podcasts contained an interview with a patient on his experience of living with a chronic wound and the services he received. The close collaboration between clinicians and faculty staff made these recordings and productions of real-life podcasts possible. The third type of podcast was short lectures, which combined audio, video and slides. These were available prior to face-to-face meetings to provide students with foundational material for the interactive workshops. The online lectures were designed for clarity and conciseness and were less than 5 minutes in length to avoid providing nothing more than "talking heads". Both clinicians and academic staff were present at the workshops to ensure interaction, and clinical and academic feedback. The close collaboration between clinicians and academic staff allowed students to receive feedback jointly on two of the four assignments.

Method

Participants

A total of 22 female nurses, aged 32 – 59, were enrolled in the Wound Management course. The nurses came from a geographically spread out area of Norway and were employed in hospital outpatient clinics and wards, nursing homes, community care and by suppliers of wound care products. All

the participants in the course were invited to take part in the study. Written and verbal information about the study's purpose and how it would be undertaken was provided. It was originally planned to undertake purposive sampling from those who agreed to participate in order to have a group that represented the age, workplace and geographical diversity of those enrolled in the course of study. As only six students agreed to participate in the study they were all included in the study. They did, however, come from a geographically widespread area within the country and from a variety of work settings which included outpatients' departments, suppliers of wound products, a veterinary surgery and district nursing. All were female, with an age range of 32 -54 years.

Ethics

Prior to student recruitment, the study was approved by the Norwegian Social Science Data Services. Written information, outlining the study and its aim, was given to students two months prior to the interview by the first author at a face-to-face meeting. The same information was sent by e-mail to all students one month prior to the interview to remind them of the opportunity to participate in the study. Participation was voluntary and participants were guaranteed anonymity, and signed, informed consent was collected.

Data collection

A descriptive design was used asking semi-structured questions to a focus group in February 2011. Focus group interviewing was chosen as (1) the method fits well when the aim is to improve practice (Lerdal, 2008) and (2) the course emphasises collaborative learning and peer response, so experiences with collaboration might be uncovered through group discussion. The questions used to guide the interview were: (1) Tell us about your experiences with the course, for example, the design, technology, your work environment and the support you have received?; (2) What was helpful for your learning?; (3) What was challenging?; (4) Can you describe your experiences with collaboration and communication with both peers and teachers?; (5) How did your ICT competence develop during the course?; and (6) What suggestions do you have for further improvements?

To facilitate participation it was conducted on the students' last face-to-face meeting at the College. The interview lasted 90 minutes. Two of the researchers undertook the focus group with one leading the interview and the second keeping field notes. At the outset their roles were clarified for the participants. The first author (EJ) conducted the interview. She was also the course administrator, a lecturer and the principal moderator of the e-learning environment. Field notes were made by the third author (TML) who was also a lecturer on the course.

At the beginning of the focus group lunch was provided and the participants were thanked for their participation. The study's purpose was reiterated and the themes to be explored were described. Emphasis was placed on there being no right or wrong answers and that everyone's experiences and opinions were valuable. The focus group was audio taped and transcribed by an external transcriber.

Analysis

The transcribed data was subject to inductive content analysis where the outcome of the analysis is to extract categories and themes to describe the phenomenon (Elo & Kyngäs, 2008; King & Horrocks, 2010). The data from the focus group was analysed independently by the first and the second authors. The second author (TH) had not been present at the interview and therefore his undertaking the analysis provided neutrality and increased dependability (Plummer-D' Amato, 2008) as the interview moderator was closely linked to the students and the course itself. The use of the second researcher for the analysis potentially reduces bias and enhances trustworthiness (Plummer-D'

Amato, 2008). Categories and themes from the independent analyses were discussed and a consensus was reached by the first and second author. Categories and themes were discussed with the third author to verify the findings.

The analysis was guided by the process described by King and Horrocks (2010). The first step of the analysis required close reading and re-reading of the transcripts. Those sections of the transcripts that appeared to provide understanding of the students' experiences were highlighted, written down as self-explanatory descriptive codes and what was of interest was noted. Thereafter, the descriptive codes that seemed to share some common meaning were grouped together to focus the interpretation of meaning. This process involved having both those sections of the transcripts that were of interest, and the descriptive codes, tabulated in order to be able to view all stages of the analysis while keeping the research questions in the forefront. The final step was to elicit the overarching themes (Elo & Kyngäs, 2008; King & Horrocks, 2010).

Findings

The analysis revealed two overarching themes related to these students' experience with blended learning: challenges and facilitators. These two themes there were further able to be subdivided into two related domains: personal challenges or facilitators and academic challenges or facilitators. Associated with each of these were a further nine and ten concepts respectively which facilitated or challenged the students learning. These domains and their subthemes are presented schematically in Figures One and Two.

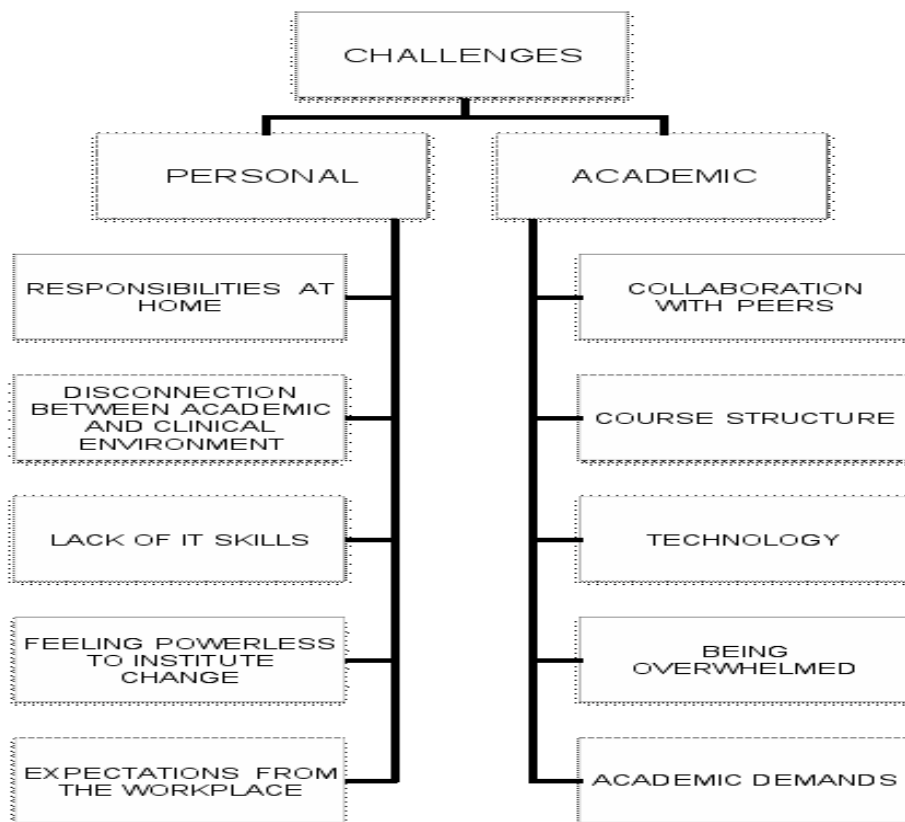


Figure 1: Challenges to learning.

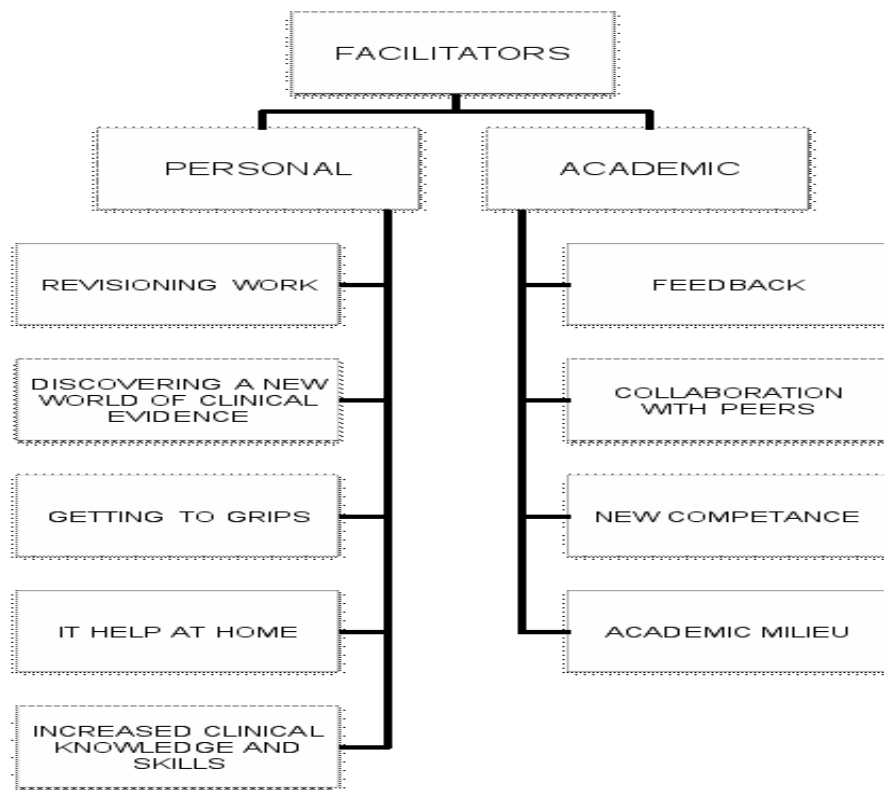


Figure 2: Facilitators to learning.

In the discussion that follows text from the participants is translated from Norwegian and denoted by use of quotation marks or indented excerpts.

Discussion

Being overwhelmed

A major theme was how overwhelmed these adult students were at the start of the course. The challenges were manifold but essentially were related to the academic environment and its demands, and the personal demands they experienced at both work and at home. These two domains, the personal and the academic challenges, intersected so that the students felt overwhelmed by competing demands and saw themselves as ‘time poor’, balancing study, work and home life. Other authors have noted that adult students’ experiences are centred on this balance and meeting conflicting demands (For example: Loureiro-Koechlin & Allan, 2010; Lowe & Gayle, 2007; O’Connor & Cordova, 2010). In their study, Lowe and Gayle (2007) found that adult learners spend as much as 59-71 hours per week combining work and study.

Most participants in this study spent a lot of time on computer related problems, and on writing the assignments according to academic requirements. A lack of time could therefore partly be explained by technical and academic challenges that absorbed the limited time available to these students. The fact that most also held a full-time job as well might also contribute to the challenging start to their studies. As one participant commented, “I was a little out of my depth, I think. I really didn’t have as much time as I thought.”

A lack of time for study, which was identified by most of the participants, coupled with a perceived lack of IT competence created a potent barrier to online learning. This finding has been documented elsewhere (For example: Atack & Rankin, 2002) and has led to some nurses dropping out of their studies altogether. Indeed, the second time this course ran one participant's colleague withdrew citing frustration with the time required by the IT components:

I had a colleague – he started here last year or the year before – he left the course because he couldn't open the audiofiles and so on, so he just gave up.

Honey (2004) found that a lack of time hindered nurses' using the internet for learning because a lack of skills lead to online activities being time consuming. In this study, one said "I have spent so much time on the written assignments, so to avoid using extra time on Fronter, I just skipped it".

It would have been easy to ascribe lack of computer skills to the age of those enrolled in the course and their previous learning experiences. For example, as one said "when I went to nursing school, we certainly wrote assignments by hand. So I felt completely high and dry in relation to computers"; however, having IT competence may not be predictive of whether or not students adapt to the blended learning environment (Wilkinson et al., 2004). The so-called digital natives – those born 1980 onward – were technically experienced with a high degree of computer literacy but had limited understanding of how to apply the technology for learning (Margaryan, Littlejohn & Vojt, 2011). It would appear, therefore, that being a younger age or having competent general computer skills are not necessarily predictors for success in blended learning. Even with 'everyday' computer literacy the use of computers for writing assignments correctly and participating in an online learning environment can be challenging. As noted by one, "from my perspective the learning curve was quite steep - especially with respect to using a computer. I work with computers a lot every day, but not in the way we use it for course work". It seems the everyday computer skills of these nurses are insufficient with respect to searching databases or other e-learning related activities.

It is argued that the integration of technology into teaching and learning has caused a paradigm shift in educational practice (Desai, Hart & Richards, 2008; Stanley & Dougherty, 2010). In addition to the technology and academic requirements is familiarisation with the blended learning environment and a course designed upon constructivist and collaborative principles: quite different pedagogical constructs than those to which they may have previously been exposed. There has been a shift from teacher-centred to student-centred learning within higher education (Stanley & Dougherty, 2010) with Virtual Learning Environments (VLE's) used to support learning. As one participant commented, "it is like a new world to me, I didn't know that I could look for knowledge like this. To realize that "Oh my God, I can use my computer to find loads of information about things I have actually been wondering about".

This new academic environment, which has moved away from didactic learning practices centred around lectures and tutorials can be both time-consuming and stressful (Holley & Dobson, 2011). For adults, already stressed by the competing demands of study, work and home life the new learning environment might be one challenge too many:

To go into the forum in Fronter has been totally out of the question for me. I simply don't dare. It isn't my thing.

Although the technology which supports online interaction and dialogue might be unfamiliar, this type of learning is usually appreciated by adult learners (Desai, Hart & Richards, 2008).

E-learning can promote deep learning (Desai, Hart & Richards, 2008) which involves relating ideas and evidence to previous knowledge and experience to develop conclusions (Entwhistle, 1994; Newble & Entwhistle, 1986). It is an approach that is synonymous with lifelong learning (Jarvis, 1987). Nevertheless, online activity and interaction might be hindered by technical problems and unfamiliarity with the pedagogy.

Academic demands

Another theme that emerged clearly from the transcripts was the demands of academia, particularly with respect to writing assignments. The requirements of academic writing and scholarship have little in common with the day-to-day written requirements in nursing practice. This lack of congruence with their everyday, lived reality was for one almost 'insurmountable': "What have I got myself into? This is not going to turn out well. Writing assignments, how do I do it? How do I follow the rules and requirements? It appeared completely insurmountable".

The nurses undertaking a postgraduate course in Tarrant et al's (2008) study also expressed concern about academic writing. As well, literacy competency can vary markedly among students undertaking further education, with the academic requirements, such as referencing styles, becoming more challenging than the learning itself (Fowler, 2008). Those who are more likely to succeed in higher education are those who have already participated in higher education and have confidence in their skills to produce scholarly, academically rigorous, reflective writing (Ryan, 2011). This finding was borne out by the experience of one of the interviewees who disagreed with the others with respect to the burden of academic writing. Her academic confidence was related to having participated almost continuously in higher education since graduating as a nurse. Technical problems, the time consumed by searching the literature and limited writing skills can be obstacles to adult students demonstrating their critical thinking skills (Bekele, 2009). It is argued that assessment methodology requires a paradigm shift to incorporate work-engaged learning (Mantz, 2011), yet the most common assessment form continues to be academic essays with academic staff valuing grammar, spelling and punctuation over critical thinking in these assignments (Kreth, Crawford, Taylor & Brockman, 2010).

Evidence-based practice is an important component of contemporary nursing education and alongside information literacy this Wound Management course incorporated this aspect as a key factor to facilitate developing competency for lifelong learning. Information technology skills are essential for finding the evidence for best practice (Tarrant, Dodgson & Law, 2008) and the participants in this study were not hampered in this respect solely by limited information literacy or lack of computer skills but also by the fact that a significant proportion of nursing research is published in English. For adult learners already struggling with the demands of technology, academia, work and home life this was an additional obstacle to their participation and success in the course.

E-learning requires more collaboration and interaction compared to 'traditional' teaching and learning (Desai, Hart & Richards, 2008); this proved to be challenging for some participants. Although, some enjoyed the experience and saw the value of group work to develop a wider perspective they found that there were difficulties inherent in this style of assignment. There were problems with allocation of the work between the group members, lack of clarity with respect to the optimal size of the groups and ambivalence was expressed as to whether the assignment topic was conducive to group work when the participants were from diverse work places. According to one:

If you don't have any experience with how home care is organized, it can be difficult to write about improvements [of practice]. We knew a little and it gave us enough insight to cope with it. It went pretty well, but it was tough and difficult.

While another noted:

On the other hand, perhaps it is rather important to have different point of views when writing an assignment, as not everybody works in home care ... but perhaps the assignments could have a different design ... because I think that perhaps one of the most important things in continuous education is to see all the functions of the health care system. Both the hospital, wards, home care, general practice surgeries, wound supplies – everything that actually surrounds the patient with a wound.

The problems with collaboration could be related to the academic challenges, distance and having to use Fronter between face-to-face meetings when they wrote the assignments. Another explanation could be that collaboration simply was time-consuming in an already pressured situation of combining work, home life and study. Finally, the participants may not have agreed on rules for collaboration and lacked the negotiation skills required for successful collaboration.

Feeling powerless to institute change

These students discovered a new world of knowledge with increased information literacy, new skills in how to reflect on existing practice and search databases for information which in turn impacted on their experience of their work places. Although, they found themselves in a position of holding new skills and knowledge, they were lacking work colleagues with whom to discuss their new understandings, while at the same time they found themselves feeling powerless to influence changes in clinical practice. One expressed the discomfort this created for her:

I think there are so many things which aren't working right. I feel so hurt inside. Oh my God, there is so much one could do. And this course makes us wake up a little and realise that we have so much to put straight. But it is clear there are so many obstacles.

Getting to grips with technology and academic demands

Despite the overwhelming start the participants stated that they eventually got to grips with both the technology and academic demands. According to one, "the initial period was the worst. And then it lightened".

Getting to grips with the academic and technological demands was certainly important for these students to move beyond the initial feelings of being overburdened and on a "steep learning curve" as one put it. Another significant factor in the development of self-confidence was receiving positive feedback on their assignments. The feedback on the first assignment was provided by both academic staff and clinicians, and this seemed to not only be valuable information to guide them further but also instilled confidence and motivation to continue. One described the initial fears and the settling influence of positive feedback had:

But I got a grip, strangely enough. After the first assignment when I got feedback which told me that something actually was correct.

Despite the demands of academic writing and the time required for the assignments, the students thought they were important to their learning:

It is the assignments. To be pushed to read and do what you need to do.
Yes, the assignments.

Although initially daunting the focus group revealed that the students valued the assignments because they perceived them as realistic, relevant and providing the opportunity to reflect on their own practice.

IT help at home

Lowe and Gayle (2007) found that while work and family life could produce negative consequences for part-time adult students, there could also be positive effects. In this study, it was evident that having somebody at home to help with IT was a source of relief. As one said, "I must admit that I got some help from my husband when my computer crashed. I don't know what I would have done without him". All the participants in this study were female and this may have played a factor in the positive influence of the home environment with respect to the IT component of the course. This has been found elsewhere, for example Chu (2010) found that female adult students relied more on practical help from family members to increase their internet self-efficacy compared to men. The limited number of participants in this study does not allow exploration as to whether this is a gender difference or related to the age of the participants.

Academic milieu

Even though it was a challenging process with many obstacles they still enjoyed the course. A number of factors intersected with respect to their new found ability to cope with the demands: family support, feedback, new competencies and enjoyment of the academic milieu.

The students were really thankful that they had the opportunity to participate in the course and one described it as a "huge privilege" to be accepted onto the course, while another described her excitement with respect to online education, "I really looked forward to starting school. I have been waiting for this internet education for many years – and finally it arrived!" To study without being fixed to a certain time or place seems important for participation and might be related to commitments at home, work or geographical distance from the University College.

These students were highly motivated to undertake further education and despite the challenges and frustrations they all spoke positively of the experience, the lecturers, course administrators, and the support they received from the IT Department at the University.

Fantastic lecturers, fantastic. They are really the masters in wound care.
It has somehow been the best of the best. New competence and discovering a new world of evidence.

The transcripts reveal a sense of personal growth and increased self-confidence in their abilities, from being on "swaying ground many times" to "having justifiable recommendations" to questions raised by colleagues in the field of practice. Evidence-based practice is facilitated through the assignments where the students search the literature for new, improved or "best practice":

But it is through the assignments that I have gained enormous knowledge. We have dived into the knowledge. To learn how to search for articles has been especially useful.

For another, to be able to search for evidence:

Is a new world for me, because I didn't know that I could search for knowledge. To understand that, oh my God, I can use my computer to find answers to my questions. Because I have questions all the time, I will now use many more articles to find answers to them.

Future recommendations

It is evident that online and blended learning can provide opportunities for adult learners to engage in reflective practice and critical thinking (Garrison & Kanuka, 2004) as well as the development of other academic and technological competencies. Given the potential for personal and professional growth uncovered in this study it is vital that course designers and facilitators address those issues which promote student satisfaction, motivation and retention. Not only are the majority of online learners adults (Ke & Wie, 2009) but they also are likely to be engaged in paid work (Lowe & Gayle, 2007; Tarrant et al., 2008); therefore, not all the challenges (and facilitators) to learning will be related to the learning environment and activities. It is important then to investigate and understand appropriate course design and those factors which create a positive learning environment. Early focus on supporting the students to develop information literacy, general computer skills and confidence to navigate the VLE will help them become self-directed learners who can focus on the course rather than being overwhelmed and distracted by the technology. As blended learning relies heavily on technology to facilitate access to learning and for the provision of academic support (Honey, 2004), the sooner the students master computer use the quicker they will be able to focus on the learning experiences per se. In this study, one student commented on this aspect:

Someone talked about computers here ... which perhaps relates to me as well. I have used so much more time on it, that I thought, "Darn! I could have read a book here instead!"

Some adult learners are disadvantaged in relation to many younger learners as they are challenged by both general computer use and the technology used in the online learning environment. Atack and Rankin (2002) recommend that the teachers take a pro-active approach at the start of the course and communicate with at risk students; thus, early identification of such students is imperative. A pre-module course to enhance students' technical and academic competencies might also be of use; the design of such courses to meet the adult learners' needs might be complex, but most likely should address local needs (Michaud, 2011). Tarrant et al. (2008) describe how they offer both a pre-module course and ongoing support, arguing that without structured and directed learning experiences adult students might become unduly stressed and anxious while becoming information literate and competent writers. Such courses, to prepare undergraduate entrants for the academic demands of their courses, are increasingly common in higher education. A pre-course should be considered for future students to address the needs revealed in this study.

The applicants for this course were provided with a limited amount of information on the technical skills required and limited support on how to access and use the VLE, and library databases at the first face-to-face meeting. Honey (2004) recommended that postgraduate students in blended learning

environments need to be well informed about the required information literacy at the outset and be provided with opportunities to improve computer, internet and library skills. What is now being considered in the redesign of the course is the adequacy of the information and support provided and how to design this to better support the student and reduce the impact of the 'overwhelming start'. The importance of teaching students how to navigate the VLE is described by Hole, Larsen and Hoem (2010) but time constraints meant that only a short time period at the first face-to-face meeting was put aside for this. Since they are challenged by both general computer use as well as computer use for learning, support on the overall use of computers needs to be taken into account.

Limitations

Generalisation of the findings is not possible due to the qualitative approach and the few respondents but the findings might be meaningful in relation to students with similar characteristics. Since there is no widely accepted definition for blended learning (Picciano, 2009), the study findings should be interpreted in relation to the course design chosen for the Wound Management course. As the focus group interview was conducted by the course administrator and principal e-moderator bias is possible. Nevertheless, the focus group interviews provided an insight into the challenges and facilitators in a blended learning environment for this group of female nurses. The knowledge might assist other educators when designing blended learning courses for a similar group of students.

Conclusion

Blended learning can offer adult students access to continuing education independent of geographical location. Education via ICT, however, may present a number of both personal and academic challenges for adult learners. The students balanced studies, home life and full-time jobs, finding the learning process challenging owing to a lack of basic computer skills and experience in the use of technology for learning. While participants were able to get to grips with the technology and academic requirements, they reported that it was time consuming and demanding in the early stages. From a positive perspective the course encouraged deep learning and the use of evidence based practice which opened up a new world to the participants as they reflected on existing practice and used the computer to find evidence to underpin new, improved or "best practice". Blended learning can facilitate nurses' access to continuing education, and the findings indicate that adult students could benefit from being better informed about the necessary computer requirements and the academic and information literacy skills used. Knowing that many adults do not have those necessary skills, course designers should also assess the need for pre-entry courses with a view to offering the right initial and ongoing technical and academic support to avoid unnecessary stress and facilitate an effective lifelong learning environment.

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ⁱ The so-called “Norwegian Diamond” or “Didactical Model of Relations” consist of six elements that interrelate and influence each in planning, carrying out, evaluating and changing education: aims; content; methods; assessments; operating conditions; and teachers and students prevailing conditions.