The transition to blended e-learning. Changing the focus of educational delivery in children’s pain management

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**ARTICLE INFO**

**Article history:**
Accepted 25 January 2009

**Keywords:**
Blended e-learning
Life-long learning
Nursing
Children
Pain

**SUMMARY**

Many health professionals within the UK experience difficulty in accessing further education due to increased workload, reduction in budgets and personal commitments. This paper discusses the redevelopment of a children’s pain management (CPM) module to blended e-learning in response to changing workforce needs.

The rationale for changing the pedagogy which underpinned the mode of delivery of the module was associated with a number of factors. Reduction in student numbers, difficulties with nurses being released from their practice setting and a desire from stakeholders to maintain pain management education.

An on-line questionnaire was utilised to undertake a module evaluation which formed part of the University teaching and learning strategy. Evaluations were generally positive, however, some ethical and professional issues emerged surrounding a lack of study time and level of computer expertise amongst the students.

Negotiation is being undertaken with stakeholders to ensure future students are provided with protected study time. Further development with electronic assignment submission will enable the module to be accessible to a wider national and international audience.

Change of module delivery to blended e-learning has assisted the health professional to learn in a manner that is adaptable to their workplace and promotes life-long learning by development of independent learning skills.

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**Introduction**

Technology is influencing the way students learn within the University setting in the UK. Many Universities have focused on the introduction of blended e-learning in an attempt to meet the changing needs of students and their employers. This move towards a more flexible method of delivery reflects national and international trends for life-long learning and continuing professional development. The majority of health professionals accessing post qualifying education are employed in a full-time capacity and have to overcome significant work and family commitments when engaging in life-long learning opportunities. These health professionals frequently experience difficulty accessing further education due to increased workload and a reduction in National Health Service (NHS) educational funding (RCN, 2007). As a result of these pressures many institutions of higher education are experiencing difficulties with recruitment and retention of students on their post qualifying programmes. The aim of this paper is to present the rationale for adopting a blended e-learning approach when re-designing a children’s pain management (CPM) module. Discussion will focus on the process undertaken to achieve this transition and the strategy used to evaluate the student’s experience.

Declining student applications challenged the CPM module team to a radical rethink and a need to adapt to the changing circumstances of the NHS. The School of Nursing were committed to finding a solution but also wanted to improve the students learning experience, whilst meeting the demands of employers (DOH, 2002a; NHS NWG, 2006; Jones et al., 2006; RCN, 2006). The module team held a shared belief that children had the right to receive optimum pain relief wherever they accessed the healthcare system. The team wanted to ensure that this pain education continued to be accessible to registered healthcare practitioners.

Originally module access was restricted to registered children’s nurses but in considering the health personnel involved in children’s pain management, an action plan was initiated to widen the entry criteria to include other healthcare professionals. As the aim of the module was to engage with the students in the development of their knowledge and skills, outcomes were mapped against the core principles of the Knowledge Skills Framework (KSF) which dovetailed with staff appraisal systems, thus providing robust evidence of life-long learning (DOH, 2004).
Modules within the University were required to be cost effective and this impacted on any modules which attracted less than 15 students. In an attempt to resolve this dilemma whilst meeting the professional development needs of post-registration nurses, different educational strategies needed to be considered. Blended e-learning was one such strategy. E-learning does not simply imply total distance learning, a combination of face-to-face and online teaching can provide a blended learning approach (Littlejohn and Higgison, 2003). This blended approach was adopted because the University was undergoing a major overhaul of their Information Technology (IT) services, systems were not fully integrated with examination departments to allow on-line assignment submission.

Background

Pain management as a priority

Children access healthcare services via a variety of adult based routes including accident and emergency, NHS walk-in centres and general medical practices. Indeed Coulling (2005) identifies that healthcare professionals are the key providers of acute pain management in hospital settings. These practitioners do not always have the knowledge of child development required to assess pain in children and lack of knowledge in this vital subject area can negatively impact on the healthcare children receive. Seers et al. (2006) argues that inadequate nursing knowledge pertaining to children’s pain management continues to be problematic, despite the emphasis placed on the importance of ongoing education within the Children’s National Service Framework (DOH, 2003). Ellis et al. (2007) suggests that professionals caring for sick children are required to work flexibly across healthcare boundaries, which require the development of enhanced skills to meet the needs of children in their care. Finley et al. (2007) presents a more global view of the problem identifying that world governments affirm that children have the right to the best pain management possible and advise organisations to develop mechanisms which ensure that pain research findings are a feature of daily practice.

Stakeholders

There is increased expectation from government and employers that Higher Educational Institutions (HEI) will develop more flexible approaches to continued professional development of healthcare practitioners. The implementation of the KSf within the United Kingdom (UK) NHS system (DOH, 2004) has accelerated this demand for up-to-date knowledge and skills related to healthcare roles. This framework supports personal development and career progression for health professionals within the NHS with the exception of doctor and dentists. Indeed Kenworthy and Dearnley (2001) argue that although there is a demand within nursing for life-long learning there is a tension between providing safe and effective patient care whilst also meeting staff development needs.

The NHS Modernisation Agenda within the UK (DOH, 2002b) reinforced the need to widen access to educational development opportunities for the whole workforce. The vision enshrined within the modernisation agenda was one of collaborative learning aimed at enhancing the quality of the patient’s journey at every stage. Applying this vision to children who receive care delivered by adult trained practitioners, strengthened the argument for a coordinated approach to pain assessment and management. Mindful of this modernisation agenda the CPM module content was revised to address the development needs of the multi-professional team (Barr, 2002) however the focus of pain management and the child remained firmly at the centre of the module redesign.

Communication with key stakeholders established that there was still a need for this type of module, which was important as the majority of students accessing the module were funded from Non-medical Education and Training (NMET) budgets. Mallett (2006, p. 8) argues that whilst the NMET budget is supposed to be ring fenced and only used for the purpose originally intended “it has come under increasing pressure in recent years. ……… to assist the financial balance of local health economies”. Cook et al. (2004) suggested that a national shortage of qualified nurses was one of the reasons for changes in educational delivery but recent shortages of educational funding within the NHS due to budget overspends has resulted in limited staff being released for study (Timmins, 2007; RCN, 2007). Chambers (2007) and Ellis et al. (2007) highlighted the problem of students being allocated finances to attend academic programmes of study but then due to staffing pressures being unable to take study leave, these issues impact on student retention. Mindful of the conflict between hospital financial pressures and student life-long learning, the module team needed to devise a strategy that met the needs of both parties. Having decided to adopt a blended e-learning approach students enrolled on the Bsc. nursing programme were consulted on the proposed changes. Feedback revealed that students considered the change of module delivery would provide them with the opportunity to study the important topic of pain management at a pace and time individual to their own learning need. In addition written communication from the local NHS employers welcomed this change and appreciated that this opportunity would provide educational development for the health professionals whilst ensuring the needs of the patients were met.

Redevelopment process

When engaged in the process of module redesign the module team considered recommendations from the United Kingdom Quality Assurance Agency (QAA, 2002) health studies benchmark. This states that students should have access to life-long learning opportunities which promote independent learning; blended e-learning is seen as an ideal vehicle to meet these benchmarks.

Blended e-learning was considered by the team as having the potential to increase the quality and flexibility of educational content offered within the module and could alleviate pressure on practice managers to release staff on specific days. It could reduce the pressure on existing resources including infra structure (classrooms, parking and catering), whilst widening access to ongoing education (Littlejohn and Higgison, 2003; Ellis et al., 2007). Blended e-learning can be seen as a concrete concept, however, in reality it can represent a flexible term that means different things to different people. The danger is that some see it as an easy way of joining together classroom teaching and e-learning, but it is more than this.

Whilst e-learning provides easier access to educational programmes and allows learners to grow despite busy work schedules, it lacks the opportunity for face-to-face communication (Ally, 2004). In an attempt to address these dilemmas Whitelock and Jelfs (2003) argue that blended e-learning simultaneously integrates traditional learning methods with e-learning approaches and enhances the consumer’s experience. Adams (2004) proposes three components to e-learning, hardware, software and ‘under-ware’, the latter being the pedagogy that underpins the curriculum development and engages the students in learning. Seale and Rius-Riu (2001), Fetherston (2001), and Glen (2005) argue it is the pedagogical underpinning that drives the design and then the integration of technology, not the other way round. The module team therefore explored Twigg’s (2003) paradigm model of blended learning as a suitable educational framework on which to base the module redevelopment. The theoretical underpinnings
of the framework emphasised the relationship between the student, the facilitator, the student's learning style and the 'learning space', (which can be physical or virtual).

One of the drivers for the module change was based on reduced student uptake and cost-versus-benefit approach from the University perspective. However it was important that revisions made to the mode of delivery needed to be tailored to meet individual student needs. The interactive learning resources needed to enable students to build on their existing knowledge and utilise the modular style to enhance their clinical practice. Indeed Brodsky (2003) suggests that blended e-learning facilitates the integration of knowledge and performance; a successful path will only occur if you balance e-learning with all the other elements. In choosing to adopt this approach the module team had to blend formal and informal methods of learning, seeking to break down barriers associated with the student's previous style of learning and knowledge acquisition. From an ethical perspective students were familiar with face-to-face teaching methods which offered the opportunity to raise questions and queries. Within blended e-learning this aspect of enquiry was address by the use of discussions boards and on-line evaluation of each session with the module team.

Changing teaching style

Lecturers are often charged with adapting existing work into a different format, Campbell (2001) argues that this involves lecturers engaging in the active process of rethinking their teaching style. The module team had to rethink and adapt their teaching philosophy from classroom learning to cyber teaching to function effectively in this new environment. The drivers that determined the development of the module resources were influenced by both operational and pedagogical issues (Garing, 2002). Whilst considering the transition from traditional methods of teaching it was important to maintain the quality of the teaching and from the student's perspective, ensure that the learning experience was a positive one. This involved a significant organisational rethink in terms of the resources required to underpin this mode of delivery. Whilst there was a significant proportion of archived material for the module on the topic of children's pain it nevertheless needed adapting and altering so that it could be delivered via computer assisted learning. This involved the lecturers training in a number of computer software products. Module development has been traditionally seen as the lecturer's role and a dilemma existed in that time allocated to e-learning content development was not recognised as part of the lecturer's workload until the project was completed. The team's own experience reflected research by Cook et al. (2004) and Green et al. (2006) who found that development of materials for virtual learning environment (VLE) was labour intensive with additional technical difficulties and staff were often expected to develop skills with little or no experience of what was needed. MacLeod (2004) suggests that changing to e-learning is not just about putting lecture notes on-line overnight, it takes many hours of preparation time to convert the materials. There were times during development to e-learning that the team felt frustration as they struggled to come to terms with this new technology, torn between existing teaching and supervision responsibilities and meeting the faculty curriculum deadlines. Garing (2002) suggests that development of blended e-learning courses always involves a trade-off between operational constraints and pedagogical values.

Information technology (IT) is an essential strategy in enhancing subject knowledge and develops transferable yet essential IT skills useful for future education thus supporting practice within the workplace (Haigh, 2004; RCN, 2006). However moving the module forward demanded additional resources and inter-professional collaboration with University IT services. A funding stream was identified by the institution for the development of the blended e-learning module. Once IT support was secured, programme content developed rapidly, Warburton (2006) supports these actions and identifies that success occurs where lecturers are well supported by learning technologists and software developers. Prior to the module commencing accessibility was piloted within NHS practice settings. Problems were encountered with NHS computer security systems, internet firewalls (which prevent unauthorised network intrusion) blocked some of the on-line content however these were resolved through collaboration between University and NHS Trust IT strategists.

Student support

The literature regarding student support mechanisms presents a mixed picture with some authors suggesting that support within e-learning can improve the flexibility and quality of learning (Hewitt-Taylor, 2003; Littlejohn and Higgison, 2003; Abramczyk et al., 2005). The learning environment is a key factor in the provision of student centred learning and should facilitate student's taking responsibility for their own learning. Sit et al. (2005) studied nursing students and reported that the e-learning format required them to hold a higher level of accountability for their own learning and as a result became more independent learners. However Seale and Rius-Riu (2001) suggest that even independent student learning needs to be guided and supported, by access to lecturers and through the organisation and design of supportive resources. Lambe and Clarke (2003) found that a high level of lecturer feedback in the early stages of the course resulted in greater student participation as the course progressed.

The team philosophy encouraged students to proactively seek feedback and guidance but it was important from the outset to establish boundaries. The students needed clear advice on how to access tutorial support and whilst this support was flexible in accordance with the individual student needs, guidelines were developed surrounding engagement.

Embarking on a blended e-learning programme of study can be bewildering and an induction into the University systems allows the student to establish a learning relationship with their host University. On-line registration was not available so prior to formal registration students received letters informing them of the technical skills and IT resources they would require to access the learning materials on the VLE, information on a University on-line VLE tutorial was also given. A one day induction was facilitated to coincide with the students attending for registration. A total of 18 students enrolled on the first module from a variety of locations across the UK and all participated in the induction day. The team considered that it was important for the students to have this opportunity of meeting face-to-face which according to Garing (2002) enhances the learning experience. The induction day followed a model similar to that proposed by Forrester et al. (2004), and incorporated an informal meeting of the module team and students enrolled on the module. Activities included familiarisation with University policies, navigation of the VLE and basic rules of ‘netiquette’ (Kallos, 2004), discussion of assessments and participation in electronic literature searching exercises. This informal approach provided a supportive environment for students to discuss any concerns.

Module content and structure

Development of the modular content was shared amongst the module team, however the role of lecturer/practitioner within the module ensured that the content was applicable to practice. This practitioner involvement in the redesign of the module's curricular content provided a clear focus on the multi-professional
learning needs of future students. As the volume of research related to children's pain was increasing, it was important that the module content reflected the evidence which underpinned all aspects of the student's clinical practice. These actions aimed to make the content relevant to the multi-professional student and encourage critical thinking pertaining to their decision making surrounding the quality of care delivered to the child and their family.

A planned outline of the module content was placed on the VLE indicating to students when content would be released. This outline provided guidance of the approximate time required to complete individual components. Content surrounding physiology of pain was developed using interactive websites to help the student understand this complex aspect of pain management. The team felt strongly that if the student failed to grasp the physiological underpinning early in the module, they would struggle to synthesise the remaining module content. However despite all these actions several students communicated difficulties with this aspect of their learning, echoing findings by Clancy et al. (2000) that qualified nurses are not confident of their biological knowledge base.

All content included links to useful websites, research articles, video media and Nuggets (Nunnington et al., 2006). A number of sessions incorporated short non-assessed quizzes to help the student to self assess their knowledge acquisition. Literature suggests that students find on-line tests highly motivational and useful to check their level of understanding and will often make repeated attempts until they succeed (Bostock, 2004; Nichol and Milligan, 2006).

One of the negative aspects of blended e-learning surrounds student isolation and lack of peer interaction. The discussion boards aimed to promote an environment where students could engage in supportive discussion surrounding their learning. It was envisaged that this would enhance the students ability to construct new ideas, undertake activities and receive feedback through dialogue with their lecturer and peers.

Laourillard (2002) stresses the importance of this dialogue/feedback in the promotion of higher levels of learning facilitating the linking of theory to practice. Such learning can be used to enhance and influence individual practice, immediate feedback helps students understand their own learning and help foster self-regulation, reflection and developmental plans for the future (Gibbs, 1999; Yorke, 2003). Students were encouraged to share reference sources with their peers promoting the vision of a shared but supportive learning community.

Assessment of learning

The development of robust assessment strategies was a major concern of the team, indeed assessment can determine how and what the student learns. Work-based students are more likely to immerse themselves in assessments that have immediate relevance and application to their practice (Rowntree, 1997). Adopting a variety of assessment methods to assess knowledge and skills acquisition achieves more balanced results and produces more rounded employable health professionals. The assessment strategy consisted of a 20 min oral presentation related to a named anaglisc product. The aim was to assess the student's ability to incorporate published literature pertaining to their topic area, whilst developing the key skills of communication, IT and problem solving (DOH, 2004).

In addition the students were assessed through a written summative assignment applicable to the student's area of practice and related to their client group. The assignment facilitated the application of theory to practice which was congruent with the learning theory. Reflective activities within the on-line material provided a framework for students to reflect on their learning and apply this to their practice, thus developing higher level critical thinking skills (Janes, 2006).

Reflexivity and lessons learned from student evaluations

The ethical aspects of student evaluation required careful consideration by the module team in maintaining student anonymity pertaining to their on-line evaluations. All modules offered by the University are subject to evaluation in accordance with QAA (2002) recommendations. Indeed the evaluation process seeks to review and improve the quality of teaching and learning across all programmes. A standardised evaluation tool (questionnaire) is used by all Schools within the University. Student guidance on completion of the questionnaire advises consideration of student anonymity module structure, assessment, teaching and learning resources, library and computing, the role of the module team in providing guidance and support. Mixtures of qualitative and quantitative questions are posed within the questionnaire to gain a constructive and meaningful evaluation which will influence future module planning. It is argued by Prosser (2005) and Rogers (1998) that using results of student evaluation questionnaires as ratings of satisfaction are unlikely to result in improvements for this group of students, however they will be of benefit to students enrolled on future modules. The student evaluations presented within this paper focus on the qualitative aspects of the questionnaire. By using the terms “like” and “dislike” emphasis is placed on the student's personal experience. These evaluations assisted the module team in gaining a deeper insight into the student's perceptions of blended e-learning as well as the student's overall satisfaction with the module and University. The questionnaire was delivered via the VLE using Questionmark™ Perception™ (1995) software. This facilitated on-line completion of the evaluation questionnaire and provided anonymity as the responses were submitted to an independent member of the administrative staff for collation. The introduction email also stated that some of the evaluation responses would be used to inform future practice through publication but it would not be possible to identify individual students in any way from the responses. All students were reminded twice by email to access the on-line evaluations, 13 responses were received. The evaluations were examined by the module team and six themes were identified.

Theme 1. Limited IT skills

Assumptions were made by the team that the student had chosen to undertake the blended e-learning module as they were IT literate; in reality a number had undertaken the module for the topic content not the mode of delivery. The evaluation identified that 4 students initially struggled with basic IT skills such as opening documents and attaching emails.

A key factor for effectiveness of e-learning is accessibility and affordability of up-to-date computer hardware and software as well as speed and stability of internet access, Cragg et al. (2003). Five of the students stated that they were competing at home for computer space with family members. Two other students found that the computer systems in their own NHS Trust were inadequate for the module, in that they were often too slow to open documents. One student hired a computer through the University 'rent-a-computer' scheme as she had limited computer access at work and none at home.

Atack (2003) suggests that for some beginners confronting computer technology can be more stressful and consume more time than the actual learning activity. This is supported by Honey (2004) who found that although 95% of nurses could use email only 75% knew how to send an attachment. However the student evaluations revealed that this was an area with rapid growth and learning, for example students stated:

- Course taught me computer skills.
• Easy to access University blackboard as I did not have many computer skills.
• Learning from home, managing the time better to access teaching packages when I needed.

These findings have resulted in the following actions. Upon receipt of completed application form students are now advised to access the University VLE and undertake an assessment of their home and work IT system to check for compatibility with the University IT systems. Students are contacted by telephone and an informal interview is undertaken to establish the applicants understanding of blended e-learning. In addition students are introduced to the VLE tutorial where they can download any systems needed. It is envisaged that these actions will enhance the student’s learning experience.

Theme 2. Feeling isolated

On-line learning can result in a rich stimulating milieu or can result in a sense of loss and belonging (Farrell and McGrath, 2001; Nichol et al., 2003). Five students stated that they missed their informal interview is undertaken to establish the applicants understanding of blended e-learning. In addition students are introduced to the VLE tutorial where they can download any systems needed. It is envisaged that these actions will enhance the student’s learning experience.

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Theme 5. Reduction in travel costs

Nine students reported positive aspects associated with e-learning in the reduction of travelling time:
• Needed no child care.
• On-line – not having to travel to Manchester every week.
• Distance learning is a terrific idea for a busy working single mum like myself.
• That you could complete module on-line rather than travel to University every week.

From a socioeconomic perspective students benefited in terms of reduced travel, parking cost and reduced travel time to and from University.

Theme 6. Positive academic support for learning

The module site contained staff information which outlined contact details, photos and who to contact should a particular lecturer be unavailable. Four students reported difficulties with electronic supervision, this was associated with clarification surrounding the development of their academic assignment. This is similar to findings from Hyland (2001) where distance learning students often found the lecturers’ comments too generalised and this misled them into making further errors. In these situations the module team encouraged students to access telephone support and this is to be continued in future modules.

The module team themselves were flexible in their approach to student support acknowledging that students were mature learners who also had to place their studies within their work/life priorities. This commitment paid off with these examples indicating overall positive satisfaction from the students,
• . . . e-learning, teacher support was excellent and you were able to access teachers when needed.
• I appreciated being able to contact tutors at any time useful.
• Tutors have been very supportive they have communicated using personal and University emails, they have responded to all questions asked . . .

However the module team had failed to fully consider how the provision of this level of student support impacted upon their work/life balance. Indeed the School of Nursing had also
underestimated this ‘invisible’ lecturer time spent providing online support and monitoring of the VLE, this additional time was not reflected in workload allocation. Our University are not alone in this misconception, many other Universities become too focused upon the benefits of e-learning in terms of supporting a larger number of students with reduction in lecturer time (Ayres and Grisham, 2003; Janes 2006). On-line teaching can slowly eat into lecture time and it is generally expected that lecturers end up logging on in the evening and at weekends just to keep up (Chickering and Ehrmann, 1996; Forman et al., 2002).

Recommendations for future modules are that students would be advised on commencing the module that responses to their correspondence would be addressed within 24 hours of receipt. Feedback work would be presented to faculty teaching and learning committee concerning the potential health issues for staff engaged in the delivery of e-learning modules.

Conclusion

Development of the module to blended e-learning was at times frustrating and time consuming for the lecturers. However the revised CPM module has enabled the health professional to learn in a manner that is adaptable to their workplace, minimises their absence from practice, and promotes life-long learning by developing independent learning skills. In addition, as the NHS becomes more reliant on IT the module has also developed generic IT skills useful for the students’ short term academic studies but also for their long term health careers. As educators of future health professionals it is important that we continue to develop more flexible approaches to post-registration education and tailor our product to the needs of the market and the service providers. Future development to online assessment and electronic submission will enable this important aspect of education to be accessible to a wider geographical audience thus reducing the problem of small student numbers accessing modules.

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