Research and evidence based practice: Using a blended approach to teaching and learning in undergraduate nurse education


The Robert Gordon University, Health and Social Care, Garthdee Road, Scotland, Aberdeen, Aberdeen City AB10 7QP, UK

University of Göttingen, Göttingen, Germany

SUMMARY

Aim: The following paper provides insights into the challenges of teaching research and evidence based practice to undergraduate student nurses. It provides a critical discussion as to the factors driving the inclusion of this subject area in pre-registration nurse education curricula as well as the reported challenges in teaching research at this level. The authors of this paper offer their own approaches to overcoming such barriers and as such provide some innovative means by which student engagement and interest can be enhanced.

Approach: Work to date which looks at evaluating approaches to teaching and learning in the field of research and evidence based practice has offered a number of approaches, which address traditional problems relating to student attitudes toward the subject, knowledge and understanding and appreciating the application of evidence in practice. However, from theories of teaching and learning it is known that solutions to these problems are not straightforward and educationalists must develop content and delivery carefully to encompass the needs of what is often a heterogeneous group of learners.

Conclusions: The paper concludes that the application of a blended approach to teaching and learning may offer a solution to the reported problems to date.

Introduction

This paper discusses the innovative use of a blended approach to teaching and learning in undergraduate nurse and midwifery education. The paper presents a discussion of one module team’s experience of working in a Higher Education Institution within the UK, teaching research and evidence based practice to year two undergraduate nursing and midwifery students. It describes the journey taken by the team in its efforts to enhance the student experience of learning about research.

Background – research and evidence based practice in nurse education

As long ago as 1972, Briggs stated that “nursing should become a research-based profession”. Even prior to this, it had long been recognised that one key attribute of a “profession” is that of possessing a knowledge base i.e. one which is grounded in research (Greenwood, 1957). Although it has been suggested that few nurses will actually undertake research during their working lives (Gerrish et al., 2006), an awareness of research is important and several stakeholders support the view that this should start in pre-registration education provision (Department of Health, 1998; UKCC, 1999; Department of Health, 2006).

Nursing and Midwifery education should enable students, in their understanding of the basics of the research process, to appreciate the importance of evidence-based nursing practice (Lacey, 1996; Blenkinsop, 2003; Callister et al., 2005). Currently within the setting of this module, pre-registration nursing and midwifery education courses comprised three year undergraduate programmes. With this move into higher education, teaching research has assumed higher priority (Lacey, 1996). This emphasis on learning for application in practice is echoed in the guiding principles of the Nursing and Midwifery Council (NMC, 2004). In its standards of proficiency for education for pre-registration nursing and midwifery programmes, ‘fitness for practice’ incorporates ‘evidence-based practice and learning’. It also recognises that in a constantly changing and complex health care environment, it is essential that practice is informed by the best available evidence. The research specific proficiencies which must be incorporated throughout all programmes of preparation include the ability to search the evidence base, to analyse practice, to critique and utilise research and other forms of evidence in practice, along with the dissemination of findings and ultimately adapting practice where appropriate.
Whilst considerable progress has been made in the field of nursing and midwifery research in the last thirty years it is widely acknowledged that much remains to be done in this area (Blenkinsop, 2003). In terms of educational preparation, one must consider approaches to teaching and learning.

Approaches to teaching and learning research and evidence based practice

As nursing and midwifery students progress through their educational programmes, they are expected to improve critical thinking and problem-solving skills, which will assist them in making decisions in the clinical area. Within nursing and midwifery education there had been an emphasis on the teacher-centred, content-driven approach, but this is not seen as the best way to enhance these higher level learning skills (Race, 2001). There has been a shift in this way of thinking and new ways of learning such as problem and enquiry-based learning have become popular in the education for health professions. These have components of practice-based learning, relevant to professional practice (Jarvis, 2004). These methods place the lecturer in a facilitator role, allowing students to direct their own learning.

Attitudes and the motivation to learn are inextricably linked (Oppenheim, 1992; Race, 2001). Therefore, in teaching research, there is a need to ensure that these two components are considered. From the experiences of the authors of this paper such a perspective is imperative in considering how the chosen approaches to learning are designed in such a way so as to change attitudes toward research and encourage students to engage with this subject at undergraduate level. The methods used in teaching and learning can, therefore, have an effect on students’ attitudes toward research. To date these methods can be categorised into three areas each reporting varying degrees of success:

- learning by doing i.e. encouraging participation in a real research study, (Reed, 1995; Lacey, 1996; Rolfe, 1999; Blenkinsop, 2003);
- facilitating awareness e.g. raising awareness of research methods (Lacey, 1996; Burrows and Baillie, 1997; Moule et al., 1998);
- a combination of these approaches.

Northway et al. (2001) described two of these approaches in pre-registration nurse education; facilitation of an awareness of research in practice and active involvement of students in the research process itself. Indeed, the authors in presenting a framework for the inclusion of students in research activity advocate strongly for the opportunity for students to participate in research projects undertaken by educational staff. Locally, from the author’s perspective, this has been complicated by institutional ethical constraints.

Barriers in terms of resources do not seem the only problem facing educationalists actively seeking to raise research awareness amongst students. There appears also, to be cultural and conceptual barriers with which to contend.

For example, Ax and Kincaid (2001) found that pre-registration nursing students perceived research as important to their development but that they faced difficulties in applying this knowledge in the workplace and in challenging practice. Furthermore, most students disagreed with research methods being taught early in their programmes, as they did not feel it appropriate to that stage of study where they felt more practical psychomotor skills should be focused upon. Another issue emerging from this study is that students saw additional problems with teaching methods such as large class sizes, unrealistic expectations from lecturers and research taught at a perceived ‘high’ level. It is suggested that there may be a number of additional challenges in teaching research and evidence based practice:

- student nurses’ imagery of practice often being in conflict with the theoretical basis of their educational preparation (Spouse, 2001);
- uncertainty regarding the outcome of teaching research and evidence based practice (Gilmore, 1999);
- knowledge and positive attitudes to research not always equating with research utilisation (Pearcey, 1995; Veeramah, 1995; Parahoo, 1999);
- lack of enthusiasm shown by nurse educationalists in relation to the subject (Barton, 1996);
- student opinions of the topic being largely negative, seeing it as difficult, uninteresting and largely theoretical in nature (Owens and Kelly, 1998);
- a lack of evaluative studies looking at the impact of educational preparation on post-registration practice, not only in terms of “instrumental” impact but also “conceptual impact” (Nutley et al., 2002).

These findings are in keeping with the experience of the module team and as such this paper describes an attempt to overcome these reported challenges. In his seminal paper, Knowles (1980) suggests, that learning about research in such a way as to change students’ concept of it, particularly in terms of application to practice, may lead to improvements in attitude towards it. Recent findings from the literature (Owens and Kelly, 1998) reported in this paper would suggest that this viewpoint in relation to nurse and midwifery education is as relevant today.

In considering such issues the authors of this paper re-examined their own philosophies and approaches to teaching research and evidence based practice. In doing so consideration was given to a broad range of perspectives and influencing conceptual theories which resulted in a blended approach to learning. In a manner suggested by Kolb (1984), the authors also had to reflect upon their own experiences in facilitating teaching and learning including a review of knowledge relating to the individual learning styles of students.

Learning styles

Concomitant with the move to higher education in the UK, and the attainment of full student status, came a widening of the entry gates and an increase in the size of intakes. This, together with a more academic curriculum and the formalised teaching methods of Universities, led in turn to lectures and seminars becoming the mainstay of teaching styles adopted in most schools of nursing and midwifery; a format that many students found difficult to adjust to from their secondary school or further education experience (Ghazi and Henshaw, 1998), where they had been used to smaller classes and a smaller teacher to pupil ratio. This challenge was one of many taken into account in the design and running of the new research module. Others included appreciating the range of learning styles (given that the module is host to a diverse student population with varying educational and experiential backgrounds) and the increasing use of information technology for communication (ITC) in education.

Adults learn best when the topic is perceived by them as being of value (Knowles, 1980). Too often subjects such as research are presented as pure theory, which students then interpret as an academic abstraction that has no relevance to the world of practice (Doane and Varcoe, 2005); thus they adopt a surface approach to the subject, sufficient to pass the assessment, but with no real intention of applying it to their working life.
The second problem is that many students have a preconceived notion that research is a ‘difficult’ subject (Owens and Kelly, 1998). This causes anxiety, which, in itself may result in ‘surface’ learning (Fransson, 1977). This type of learning may hinder the learner in using the knowledge gained for any practical purpose.

Individuals learn differently and it may seem difficult for teachers to take into consideration all the possible learning styles of their learners. The question is: is it necessary to provide all of the content so it matches all learning styles? Condie and Livingston (2007) have presented new models of learning and teaching. Traditionally it was the main task to teach “secure knowledge”, facts were relatively stable and could be taught from one generation to the other. For example in the UK, there has been a move away from an apprentice style model of preparation of nursing and midwifery students to a broader, academic educational preparation. Recent facts are more transient and views and theories develop and change. The rapid changing of what we know about the world makes life-long learning more important. So the task of teachers is to enable students to learn how to learn and to be responsible for their own learning. Condie and Livingston (2007), p. 339 describe this as having the ability to create ‘effective learning environments that enable the active engagement of students in the learning process thus developing a sense of ‘ownership of the learning process’.

Pask (1976) identifies two basic learning strategies which he describes as “serialistic” and “holistic”. While serialists learn step by step and abstractions develop out of concretions, holists tend to form more complex hypotheses and alternate between concretion and abstraction. Some learners use both strategies in a “versatile” approach. Pask experienced that serialistic learners can rarely cope with holistic learning environments, whereas holistic learners can cope with serialistic environments. Such knowledge may be used in designing learning programmes through offering multiple ways for learning to match the needs of both ‘serialists’ and ‘holists’. Haller (2002) describes how this model could be adapted to design a learning programme, which is fit for purpose. It should be possible for serialists to learn “step by step” and “bottom-up-oriented” and likewise it should also be possible for holists to have an overview about the whole field and to learn “top-down-oriented”. This approach shows that it is possible for teachers to take different learning styles into consideration within one learning environment. This adaptation was useful to the module team in developing a blended approach to learning. The team used a blended approach to address the varied learning styles that students bring to the module. It is suggested here that such an approach can:

- Make the content of the module meaningful;
- Link theory and practice;
- Make the module more accessible to a variety of learning styles.

Developing the module using a blended learning approach

The challenge then is to help students to engage with the subject; reduce anxiety about the complexity of its nature, and minimise the distance between theory and practice whilst remaining cognisant to differing learning styles and methods of facilitating knowledge, understanding and application. Blended learning would seem to have much to offer in helping to achieve this, as it offers a variety of formats, combining ‘face-to-face instruction with computer-mediated instruction’ (Bonk and Graham, 2006). This will tie in with the preferred learning style of the individual student, while others will provide them with challenges, in the context of a supportive environment; a situation in which more creative learning may take place (Quinn, 2007).

### Table 1

| Module aim | To enable the student to develop an awareness of research methods and reports in order to assess their significance to practice. |
| Learning outcomes | On completion of this module, students are expected to be able to: |
| | (1) Explain quantitative and qualitative approaches to research |
| | (2) Differentiate between research methods used within the two approaches |
| | (3) Explain the appropriateness of the research design used |
| | (4) Discuss the impact of research on evidence based practice |

Given the content of the module descriptor as shown in Table 1, the team acknowledged the indicative content was in keeping with students’ requirements for their stage of learning. However they felt that the mode of delivery needed to be addressed.

At the same time as the original module was under review, The University was in the process of introducing computer assisted assessment for students. This provided an excellent opportunity to explore an alternative mode of delivery for at least one component of the module. The assessment in the existing module – a 2500 word essay critiquing research articles – was changed to a series of semi-structured questions a sample of which are shown in Table 2.

By changing the way students were assessed, their knowledge and understanding of research concepts were being examined in a way that prevented surface learning. Students who invested little effort in reading around the subject could be classified as surface learners, generally received borderline pass grades or failed the assessment. There were however, students who worked extremely hard but found the concepts difficult to understand in the short time that the module was delivered. For these students it was anticipated that changes to the way the module was taught may enhance their learning and in turn their understanding of research.

The balance of large lectures to small group teaching within the module was reversed over time, with fewer lectures and more small workshops being the current format. In addition, students...
now also have the opportunity to take part in online discussions and challenge themselves with formative quizzes (as shown in Table 3) on the university ‘Virtual Campus’.

The current format of the module comprises a blend of traditional and e-learning teaching styles (see Fig. 1). With the blended learning approach students experience a wide range of learning and teaching methods. In addition to lectures, the students have the possibility to examine concepts and theories in small group tutorials and seminars with an appointed academic tutor. Students design their own projects and present their learning in the form of a research proposal which means that they have to use the methods and rules that they have learnt in the lectures. Another component is the Virtual Campus (e-learning environment) where all necessary materials (presentations from the lectures, references, articles) and continuative information (links and hints) are available.

This approach both addresses the issues of differing learning styles and attitudes toward research (Ireland et al., 2009). It also meets the demands of policy drivers in higher education by utilising technology assisted learning. There are a number of drivers behind the integration of technology in health education (Dearing, 1997; Department for Education and Employment, 2003; Department of Health, 2004), which emphasise the need for increased use of information technology (IT) in educational institutions, the need to address the growing digital economy and the modernisation of the National Health Service. Coupled with this are societal changes such as globalisation, changing technologies, a knowledge revolution and the restructuring of institutions and work related practices (Glen and Cox, 2006). In relation to nurse and midwifery education and considering the context of this paper, there were a number of challenges that the authors were cognisant toward in embedding e-learning within a blended approach to teaching and learning research:

- Facilitating a shift in culture between both teacher and student in utilising technology (Twomey, 2004; Haigh, 2004; Farrell, 2006);
- Encouraging motivation to learn using technology (Lowry and Johnson, 1999);
- Student IT literacy (Haigh, 2004);
- Student ability to use technology and technical difficulties (Dawes and Handscombe, 2002).

These challenges were embraced with what has been reported to date in terms of the benefits of using technology assisted learning. For example, Salmon (2002) reports on the potential of creating a virtual learning community in motivating students, providing flexible access and in encouraging socialisation. Lowry and Johnson (1999) found that the use of technology enabled flexible access to materials and enabled learners to work through course content at their own pace. Consideration to content delivery and module planning utilising a blended approach has, enabled the facilitation of a variety of learning styles as well as improved students understanding, application and interest in research.

For example, in lectures the students gain the theoretical knowledge about research and evidence based practice. The module team consists of five teachers who each deliver one lecture on an aspect of the module learning outcomes e.g. research process, approaches, methods, ethics and guidelines.

In workshops the students choose a topic they want to focus on. They exercise the theoretical knowledge through using it in a concrete case and are supported by an academic tutor, if necessary. The students develop their own research proposal, which includes defining a research question, searching the literature and formulate appropriate methods. This culminates in a poster presentation to tutors and peers which is formatively assessed.

On the University Virtual Campus all the materials which are presented during the lectures are available for the students. They have also the possibility to discuss relevant topics with colleagues and teachers in a discussion forum. Articles and references are provided as well as links to continuative information to stimulate and encourage the autonomous learning of the students. A diversity of educational materials is provided on the Virtual Campus, such as text, links and video. The module team created a video with a simulation of an ethics committee. In it, a ‘researcher’ presents proposed research to the committee thus giving the viewer the opportunity to “see and hear” how relevant topics related to the design of the study are discussed.

With the variety in the module, the contents are provided in many different ways and the students have the possibility to choose their ways of learning. According to Pask (1976), serialists and holists have the opportunity to use their preferred means of learning, because the design of the module allows them to learn “bottom-up-oriented” as well as “top-down-oriented”. With the blended learning approach in the research methods module different learning styles are taken into consideration through didactical variety and the use of modern technologies.

### Recommendations and future directions

It would appear from the literature, (Ireland et al., 2009), that the use of a blended approach to teaching and learning can be beneficial to the nurse learner in a variety of ways if careful consideration is given to the use of technology, the learning styles of the student and access to technology (particularly at a distance).
Therefore a new approach to learning should be sought given the relative positives and negatives outlined; an environment which combines the advantages of online environments with traditional didactic approaches i.e. blended approaches. “What works” is a blended approach to e-learning with the primary conscious planned integration of robust research into student learning i.e. interactive learning, asynchronous and synchronous chat, problem solving or active learning from real life situations. Given the reported difficulties in teaching research to undergraduate nurses to date, it is argued here that the use of blended approaches serves to enhance the student experience as well as starting to address the varied abilities and learning styles in nurse education. What must now be considered is a careful evaluation of such approaches. Scott (2003) emphasises the need for ongoing evaluation i.e. integration of technology in a way that builds upon past success, catering for the development of staff and students rather than a one step change of approach. This fits with the development of the research module in that the team continuously reviews student evaluation as well as the staff experience in developing and delivering the module content. The challenge for those teaching research and evidence based practice is not only how to embed this into their pedagogy but indeed to think more carefully toward the evaluation of the range impacts educational input can have on practice based outcomes.

References