Promoting the students practicum: A CD ROM for nursing preceptors

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Abstract

Students who undertake a degree that leads to a professional qualification, such as nursing, are often required to undertake a practical component in their course of study. This frequently involves the use of industry to support, mentor and assess student progress. Such a role is vitally important if the student is to achieve successful learning outcomes. In order to facilitate learning opportunities and evaluate student progress, the industry educators require knowledge to undertake the role with confidence and effectiveness. Using nursing as a case study, but acknowledging that this process is applicable to a variety of disciplines, this paper showcases an effective use of different media for supporting industry educators in nursing, termed preceptors of nursing students. This paper discusses the production of a CD ROM with a focus on the educational issues that formed its development. Further, the authors briefly discuss an evaluation of the CD ROM by users and future development.

Introduction

In professional degrees which have a practice component, such as medicine, physiotherapy, teaching, engineering and nursing, the tertiary sector recognises the role that industry plays in the practical preparation of undergraduate students. To use nursing as an example, the clinical component and learning associated with the practical experience are fundamental to the success of the student within the undergraduate program. Without practical experience the student simply cannot graduate to become an accredited registered nurse. Phenomenological nurse researchers (Benner & Tanner, 1987; Benner & Wrubel, 1989) have identified the importance of practical experience. Further to this Mahat (1998) argues that industry experience in health care facilities enables students to have opportunity for development of their skills, applying scientific principles in providing patient care and to make clinical judgments in real situations.

In nursing, the industry educator model of the 'preceptor' involves the student working on a one-to-one basis with an experienced registered nurse. A preceptor in the nursing arena can be defined as a registered nurse who guides, supports, mentors and identifies learning opportunities for the less experienced nurse, namely the graduate nurse or the undergraduate nursing student. The preceptor model acknowledges that student learning is enhanced by the use of such individuals who are considered competent in the clinical setting (Paterson, 1997).

In the research undertaken by Nehls, Rather, and Guyette (1997), students identified that they valued spending time with a practicing nurse and that the preceptor model of instruction provided them with more time to learn. Their role has many components including orientation, support, teaching and sharing of clinical experience (Bain, 1999). Whilst assuming the role of a preceptor in health care settings, these individuals also manage patient care loads. As a result there can be a demand on preceptors which can impact their ability to be prepared for students resulting in both disorganised learning environments and preceptors who are not aware of students' learning needs. This is significant in terms of the reliance on them to facilitate learning opportunities for students as the clinical learning experiences students encounter are so fundamental for their preparation as graduate registered nurses.

The importance of the preceptor's role cannot be overemphasised and to enhance the confidence and thus effectiveness of this position, the person fulfilling the role is entitled to adequate preparation. Nehls et al. (1997) suggest that given the importance of clinical education there is a need for an examination of innovative approaches to clinical instruction. Beattie (1998) further argues that faculty must be aware of the increasing demand on preceptors so that they may develop appropriate support programs and quality preparation for preceptors. At Central Queensland University the question of how best to prepare preceptors using innovative approaches had been discussed over many years. In 1999 the idea of a resource in the form of a CD ROM that could meet preceptors' needs, was interesting to peruse, had multimedia elements within and could be convenient for preceptors to access at any time and location, was conceived.

A background to preceptor support

Prior to the conception of the CD ROM, the preparation of preceptors by the School of Nursing and Health Studies at Central Queensland University had been through the supply of voluminous hard copy resources and conducting of workshops at the University campuses or hospitals in the metropolitan regions, which meant expensive travel costs for the preceptors in distant locations and/or university staff. Additionally, campus based academic staff were utilised as support persons to students and preceptors. Their role was to liaise by phone, email and in person, with preceptors and students during the clinical experience. This traditional model seemingly worked well for preceptors within the metropolitan regions due to close proximity to a University campus but for those in regional, rural and remote locations, cost of travel and time away from the wards, meant that they were not always able to attend workshops nor could academic staff conduct site visits. This resulted in reduced support and education for preceptors outside the metropolitan regions creating a concern to faculty about how prepared they were. The concept of distance and equity thus needed to be considered by faculty in developing resources for preceptors to prepare them for their role. In essence the resources needed to go to them rather than the preceptor coming to the educational centre such as the University.

Developing the CD ROM

In brainstorming about the best way to meet the needs of preceptors, it became clear to the developers that the CD ROM was the most effective medium to deliver the content. After all CD ROM discs could hold over 650 megabytes of data, graphics, sound and video, and were portable, durable, and inexpensive to

reproduce (Boulware, Bratina, Holt, & Johnson, 1997). Furthermore, CD ROMS were becoming more widely used for teaching purposes. Jeffries (2001), and Jeffries, Woolf, and Linde (2003) utilised a CD ROM for teaching medication and electrocardiography skills. Additionally, Jefferies identified that students using the CD-ROMs demonstrated significant cognitive gains when compared with a group who participated in lectures only. Shellenbarger (1999) also highlighted the benefits of using both visual and auditory information sources. It should be noted that prior to this point in time, no research had been identified that specifically related to a design of a format to prepare preceptors for their roles.

The design of the CD ROM began in 1999 after the establishment of a team of developers and a content expert. As suggested by Keppell (2000), the design and development of multimedia resources necessitates a team working together with a diverse range of skills and talents to successfully complete all aspects of its development. Defining the roles at the outset of the project was necessary so that conflicts did not emerge. Clearly the content expert would be responsible for the information being included in the resource; however, without a background in the design aspects of multimedia development it was important to include instructional designers who knew the capabilities of what could and could not be included. According to Nelson, Magliano, and Sherman (1988), instructional designers are generally process-oriented individuals because they can apply instructional design principles to a wide range of content areas. As supported by Nelson et al. the instructional designers for this project were essentially responsible for selecting, sequencing, synthesising and summarising the content for instructional purposes.

Keppell (2000) suggests that a bottleneck approach can, however, exist between the content expert and design and development staff as they go about translating the content into a form that embodies sound educational design. In an effort to avoid this, it was also important to articulate at the outset of the project that despite each member having a clear role, the need to work closely with each other and understand one another's responsibilities was paramount.

Once roles were defined the team consisted of a content expert, two multimedia producers, a multimedia developer, an application specialist and a video producer. The content expert, the then Director of Clinical Learning in the School of Nursing and Health Studies, was already responsible for the preparation of nursing preceptors, was a registered nurse herself, and a lecturer with a Masters degree in Clinical Education. During the life of the project, the other members of the team also took on additional roles as actors and conducting voice-overs for the multimedia elements of the CD ROM.

It was realised that the project would be time consuming and thus a two-year time frame was planned as realistic. As a key support mechanism for students, this work was identified as complying with the criteria for full multimedia support from the Multimedia Design Centre, Central Queensland University. The cost of consumables was considered outside this brief and was supported by the School of Nursing and Health Studies. In evaluating the consumable costs associated with production of the print alternative, it was evident that the CD ROM option would in fact reduce expenses for the School. The development time, however, equated to over 485 designer/developer hours. The implication of this is that projects of this type will prove to be very costly, with development and production time being a major expense. From a novice's perspective it became apparent that multimedia development is time consuming due to the complexity of the process and more thought should be given to initial planning at the outset to help manage this expense.

The conceptual framework for a CD ROM, which could be self directed, self paced, and could be used by preceptors in both remote, rural and metropolitan regions, was derived. This occurred after reviewing existing resources, seeking peer input, reviewing preceptor feedback, and reviewing the literature on preceptor needs. The concept of being self paced was in an effort to consider how this medium could cater for a variety of learner types. Being self paced meant that the preceptors, as learners, could proceed through the program at a self-determined speed that would be most conducive for their own style of learning. They could repeat any section of the program to reinforce the skills they desired to improve or develop and the information could be conveniently accessed at any time and as often as necessary. This is in contrast to having the information delivered via a lecture, such as that which occurred in preceptor workshops. In a lecture there is little provision for individualisation of the pace and rate of information delivery (Grobe, 1984, cited in Saba, Reider, & Pocklington, 1989). Without individualisation of the pace, the resultant effect can be frustration for the more capable and less capable learner with the information pace best serving only one third of the audience (Grobe, 1984, cited in Saba, Reider, & Pocklington, 1989).

From the conceptual framework it was decided that the CD ROM would incorporate multi media elements such as video and audio components to portray different student-preceptor situations. The content in the CD ROM was aimed at assisting preceptors to develop effective teaching and learning strategies by giving them exposure to specific information and demonstration of key issues through the use of role play as captured on the videos. The CD ROM also needed to be compatible with existing computers in the health care organisations, incorporate links to the University and other relevant professional bodies, and needed development so that relevant components could be printed as required.

After many months a site plan was developed. This proved to be a time consuming process because it became apparent that many of the ideas for content were repetitive, irrelevant or needed further development. The time, and associated expense, required for tasks such as this had not been anticipated by the content expert inexperienced in Multimedia development. The development of a site plan was eventually achieved and then distributed to staff in the School of Nursing and Health Studies for review. After feedback, further changes occurred and the development phase began. This development phase involved a rewrite of the content from existing paper-based preceptor resources to suit the CD ROM medium. The final content of this innovative resource is outlined in Table 1 below.

Table 1: Contents of the CD ROM

Section 1
• clarification of the role
• time management strategies
• parameters surrounding student's clinical hours
• a sequential plan to facilitate student learning
• collaborative approaches to clinical education
• contacts for help and support

Section 2
• content specific to the beginning relationship. strategies for breaking the ice
• clarifying expectations
• preceptor's right and responsibilities
• an explanation of the clinical learning cycle (Cox, 1993)

Section 3
• regular recording of documentation
• meeting the student's learning needs
• allocating the student's responsibility surrounding patient care

Section 4
• student assessment
• challenges of assessment
• providing feedback

Section 5
• accident and incident management
• managing the challenging student

Section 6
• support
• web links
• resources

Process

The finalisation of content led to the compilation of a storyboard and the selection of multimedia elements to best address the content of each section. Print versions of the content were developed screen by screen with significant editorial changes. Scripts were prepared for the audio and video elements of the CD ROM. Whilst this is a standard process, from a novice's perspective it was extraordinary. Difficulty was experienced in terms of understanding how long the process took as well as 'letting go' of what one had considered important information. It became apparent that content had to be succinct which meant culling verbose documents.

The recording of the audio and visual elements was personally challenging. What had not been anticipated was the need to carefully select people for the acting and audio roles. Using the content expert seemed all very well in terms of being able to put forward the idea; however, frustration emerged in trying to 'act' out the roles. Additionally when handing over the 'acting' to others, frustration also became apparent from the content expert, because of misunderstanding in what messages

were trying to be portrayed. The learning which occurred from this was that such roles must be carefully planned and scripted as they were a challenging aspect of the process.

In addition to the content, links were made through the identification of key words which would link to other platforms as well relevant Internet sites. These sites could provide further information for the preceptors to access from their personal or work based computers. Sites included professional nursing bodies; however, the developers were careful to allow users to go only to the first page of the web site so as to avoid any copyright issues. The authoring product Flash Micro Media was selected by the designers for its ease of use across all platforms and its support for all media elements.

All elements of the CD ROM were compiled onto a prototype CD ROM and the product-testing phase began. Quality checking and feedback was sought from peers in both the tertiary setting and the health care organisations. As a result of this feedback further changes were made to the design of the CD ROM. Once changes were finalised copyright was sought from authors and publishers whose information had been referred to in the CD ROM. Inherent in obtaining copyright that needs to be highlight is the notion that copyright is time limited when one is dealing with professional bodies such as the Royal College of Nursing Australia. What this means is either renegotiating continual copyright or updating the resource.

Prior to the final refinement stage, the CD ROM was presented at national and international conferences. This proved worthwhile as feedback allowed for additional refinement. Such feedback highlighted the need for the development of a more generic CD ROM. It was suggested that the content should be replicated but with the removal of Central Queensland University specific information so as to make it more widely applicable. Further to this it is recommended that a team approach be undertaken when presenting at conferences. This would enhance the presenters' ability to answer audience questions which have ranged from specifics about computer requirements and platforms to pure content.

What began in 1999 was finally completed in 2004 with two CD ROMs being launched, a Central Queensland University specific one which would be free to all health care organisations supporting Central Queensland University students, and a generic version which could be purchased by other health care providers and tertiary organisations.

Evaluation and future developments

To date over 200 Central Queensland University specific CD ROMs have been distributed, and over $20,000 worth of generic CD ROMs have been sold to a variety of health care facilities, TAFE and universities throughout Australia and Internationally. The CD ROM has attracted interest from health related disciplines including, nursing , physiotherapy, social work, mental health, dentistry and medicine. Despite the significant income generation, marketing has come only from conference presentations, an article in the Royal College of Nursing Review and 'word of mouth'. The CD ROM has proven to be a useful medium for preparing preceptors for their role. In 2004, the CD ROM was recognised by Central Queensland University as a resource worthy for nomination to the Australian Awards for University Teaching as an innovative teaching resource. The support for the CD ROM by the university is reflected in the following statement:

> The CD "Generic Preceptoring Nursing Students—a resource to facilitate the process" is an outstanding tool to address the complex relationship in a simple, easy to use format which is available as a single resource both for the preceptor and student. This tool eases the path for both, increasing the willingness of busy professionals to take on the additional duties of the preceptoring relationship and hence increasing the capacity of universities to produce additional graduates to address critical health workforce issues. The CD has already achieved widespread acclaim in the health industry and is a worthy example of an outstanding teaching and learning enhancement project. (Professor E. J. Payne, Dean, Faculty of Arts, Health and Sciences, Central Queensland University)

An evaluation of the CD ROM was undertaken to ascertain its effectiveness. A survey form was distributed to approximately fifty educators with a 51 per cent response rate. An analysis of the survey data indicated a high level of satisfaction with the teaching resource. Users indicated that respondents found the Preceptor CD ROM to be innovative and the content to be useful. From a user's perspective they felt that it was easy to navigate due to the design elements incorporated. Users identified that the multimedia elements were effective making learning more stimulating. Importantly, the evaluation indicated that it was applicable to the organisations in which preceptors were working. Comments from industry users include: "*Great innovative idea, certainly it can be very useful in the induction process of the preceptors/ off campus educators*". "*Fantastic CD … content is excellent with lots of different applications*". "*Great idea as RNs are often preceptors without having any formal education as to what the role of the preceptor is*". "*Very useful to have a resource for future placements*". Responses from conference audiences where this resource has been presented indicate that this resource could have wider applications than just in the nursing. That is, that the principles of this CD ROM could be replicated in another version with the aim to meet a wider audience. The content could be adapted to become more generic and as such be implemented in any industry where undergraduate students require practicum placement. The resource could then be used by any industry educator regardless of the discipline. This will be the next challenge.

Conclusion

Industry educators are valuable and essential assets for any tertiary institution with disciplines requiring some practical industry experience. In the profession of nursing, preceptors are industry educators. They are the role models who have a direct impact on nurses of the future. Preceptors assume a multitude of roles which require adequate preparation by faculty. Without preparation their role in facilitating learning opportunities for undergraduate students could be lost. Recognising the importance of preceptors as industry educators, Central Queensland University took up a challenge to develop an innovative resource in the form of a CD ROM which could be easily used by preceptors, would include multi media elements and could meet preceptor needs in both rural and metropolitan regions.

The development of such a resource required a team approach involving multimedia experts as well as a content expert. During the life of the project the content expert, as a novice in the area of multimedia development, became aware of many of the challenges in such work. For example, for future developments more attention should be paid to all members of the team defining their roles and making each other clear as to what is realistically achievable. It is important that content experts, as novices, be prepared to take advice from the multi media experts as to the parameters of what can be achieved in the time frame given and the financial resources available. It is necessary that the content expert be prepared to 'let go' of content that may not suit the medium. Essentially initial projects should be small and as experience is gained larger projects can be considered with a knowledge of what is achievable.

The resource has gained national and international recognition as being a valid medium for preparing preceptors for their role as industry educators. Future developments will see the principles of this medium being replicated to develop a resource that can be used on a national and international scale.

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