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Considering video production? Lessons learned from the production of a blood pressure measurement video

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Accepted 13 April 2005

KEYWORDS

Video production;
Nurse education;
Multimedia;
Teaching and learning;
Innovations

Summary It is important that innovative tools that are created to enhance student learning are efficient and effective. Satisfying both criteria presents many challenges to contemporary nurse educators who wish to embark on creating alternative media to augment student nurse education. This paper is based on the author's own experience of producing a teaching video with the assistance of two multimedia students. This project was made possible by a university teaching and learning grant. Some recommendations are made arising from the 'lessons learned' from this project are highlighted. These are broadly categorised into pre-production, production and post-production considerations. In general, a good working relationship within the production team was beneficial in clarifying discrepancies between multimedia perspectives and nurse educator perspectives. It is hoped that this paper will be helpful to prospective nurse educators intending to produce similar video material. © 2005 Elsevier Ltd. All rights reserved.

Introduction

The impetus to develop innovations that facilitate flexible student nurse education has been widely acknowledged (Minardi and Ritter, 1999; Carnwell, 2000; Garrett and Callear, 2001). In Ireland, the identification of the need to utilise a variety of teaching and learning strategies is also evident.

This is primarily due to the implementation of a four-year degree-level programme for those who wish to study nursing which began in 2002 (Nursing Education Forum, 2000). Students who enter this programme of study are likely to be experiencing large class sizes of up to 220. This creates a real challenge for contemporary nurse educators. In teaching fundamental clinical nursing skills such as blood pressure, pulse and respiration measurement, class size is naturally reduced. In these cases, quite often the responsibility for teaching these classes rests with more than one instructor,

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which presents a challenge in ensuring consistency of content.

The creation of innovative strategies to assist student nurse learning offers exciting possibilities in ensuring that there is consistency of content amongst multiple student groups. Equally, the use of a medium such as video has the potential to be an interesting resource for students, offering an alternative to traditional nursing manuals and handbooks. The project described in this paper was funded by a Dublin City University teaching and learning grant. Digital video technology was used to capture and edit the raw data. This was then rendered and transferred to VHS tape, a resource which most students could easily take home and use.

It is important that careful consideration is used both in the development and use of such teaching and learning strategies. Hewitt-Taylor (2003) advocates "The judicious use of technology" in creating resources (such as video material) to augment student learning. This paper seeks to enlighten nurse educators about the amount of involvement and considerations which are required to produce video material to augment student nurse teaching and learning.

Background

This project sought to develop a high quality teaching material, which would offer students a more flexible way of developing and refining their clinical skills. In consultation with communication experts, the medium of videotape was chosen. It was felt that the medium of videotape was more broadly accessible, available (and user friendly) than other multimedia resources as students would not require to have a home computer to use this tool. As stated previously, the aim of the project was to produce material that students could take home and revise. Because the School of Nursing, in consultation with the practice setting produced the video, it was envisaged that students would have an accurate resource tailored to suit their needs.

Literature review

Recognition of the usefulness of video has long been recognised (McSweeney, 1986; Burnard, 1991; Fowler, 1993; Chau et al., 2001). However, less is written about the efficacy of such materials. Minardi and Ritter (1999) found the medium of videotaped

recordings to be a positive adjunct to skill development amongst a population of nursing students and nurse lecturers. No significant differences in performance were identified by Guy and Frisby (1992) who compared traditional skills demonstrations with interactive videodiscs amongst a population of medical students. In the nursing literature, teacher confidence in using video technologies has been identified as a factor inhibiting its use (and subsequent evaluation) in student nurse education (Rizzolo, 1990; Fowler, 1993; Minardi and Ritter, 1999). The importance of planning (pre-production) in similar projects is also evident in the literature (Chang, 1994; Ryan, 1999; Currie, 2003).

In relation to fundamental nursing skills, some multimedia resources are already available for purchase. The advantage with these products clearly lies in their availability. However, the disadvantages of buying such resources are primarily related to their cost and portability. Quite often, these packages come with single user licence agreements and are restricted to use within the teaching institution. Similarly, it is not possible to tailor these packages to meet the needs of a particular student group.

The video production project

Two third year undergraduate multimedia students from the university were recruited to assist on a full time basis with this project. The timeframe for the project was 12 weeks. The skill of blood pressure measurement was chosen as the topic of the video. This was because it was felt to be a skill, which is sometimes difficult to grasp first time round. Because of this, it was expected that a supporting video would be useful to students in refining the skill of blood pressure measurement. It was the first time that video production had been attempted within this School of Nursing. This new venture presented a challenge from which many lessons were learned. These are further described below.

Generally, good collaboration and communication between the production team was something, which underpinned the whole process of video production. This was highlighted as such because on numerous occasions, there was discrepancy between demands for artistic licence (on the part of the multimedia side) and demands for consistency and accurate content from a nursing perspective. The non-nurse multimedia students sometimes had difficulty in appreciating the need for a shot of something (for example, of a patient taking off a cardigan to illustrate the need to remove bulky

clothing on the arm prior to blood pressure measurement). However, this was overcome easily by clear communication and explanation on the part of the producer. Equally, production suggestions were equally well received from the multimedia students in relation to lighting, timing, continuity, and screen features such as fadeout. On the whole, the video production process could be viewed as a learning curve which was interesting (although time consuming) and enjoyable. As highlighted earlier, many issues arose throughout the video production process. There are three main phases associated with film and video production, pre-production (planning), production (filming) and post-production (editing). The issues which emerged in the blood pressure video project are discussed in the following sections. These are broken down into issues which emerged during pre-production and post-production.

Pre-production

Pre-production refers to any of the activities that occur at the planning stage prior to any filming. The following section highlights the lessons learned by the project team at this stage.

Scriptwriting was, by far, the most important consideration and is something that future nurse educators should consider carefully. Never having written a script before, the estimation of time required to complete this was seriously underestimated. The development of the script can be likened to the blueprint of a building. Consideration for even the smallest factor should be made at this stage as constant reference is made to the script throughout the project. Some factors, which needed consideration when writing a script for clinical teaching, included, video length, source material, timing and sequencing. I found that using a scriptwriting table similar to the one outlined

below (Table 1) was helpful in illustrating the content and timing of the production simultaneously.

In relation to writing the script, careful attention was required to ensure that the content was accurate and also up to date. The sources of information accessed in writing the script included journals, books and key informants in the practice setting. I included the date of production along with displaying the references to these sources at the end of the video. This had a dual benefit in dating the video and its sources, and providing students with the references relating to the procedure of blood pressure measurement should they wish to undertake further reading. When the script was written, differences between the language style used in writing and that of normal conversation were noted. This meant that the style and language of the script had to be reviewed several times so that the final product would result in voiceovers and conversations in the video, which were both accurate and easy to understand.

Effects such as digital images and flashcards (text which appears on screen to introduce the next phase of film) were agreed in advance prior to the production. The multimedia students were invaluable in providing examples of the scope of such effects and their applicability in particular sections of the video. Some three-dimensional effects were developed which incidentally involved four full days of computer work.

Recruiting actors, interestingly, proved to be a real challenge. Because of the nature of the video (blood pressure measurement), it was felt that a staff nurse would be the most realistic person to speak about and demonstrate the act of blood pressure measurement. However, despite an E-mail recruitment campaign sent to over 1000 nurses in one particular hospital, we could not find a nurse who was willing to speak in the film. Eventually, through informal contacts, a nurse who was willing to demonstrate (but not speak) was recruited along

Table 1 Excerpt of scriptwriting table devised for blood pressure measurement video

Voiceover dialogue	Film footage	Footage dialogue (voice to camera)	Other effects
The measurement of blood pressure is an essential nursing skill, which is of great importance to the assessment of a patient in the healthcare setting	General health/lifestyle footage – music	None	
Blood pressure can be measured for a variety of reasons. It is often taken when a patient is first admitted to a healthcare setting	Hospital footage. Footage of nurse taking patients b/p in the healthcare setting		Fadeout to black at end of sequence

with an individual willing to act as a patient. Both nurse and patient were paid for their time.

The video was shot in the Nursing Skills Centre contained in the university. This was helpful as there were few disturbances (in comparison with a busy general hospital). The equipment necessary for the actual demonstration was easily secured beforehand. However, securing cameras, lighting and sound recording equipment was not as easy. Fortunately there was a rental facility within this university, which, while providing cheaper access, was still costly. Digital images particularly film sequences occupy a lot of computer storage space. Separate hard drive storage was also required to accommodate the data relating to this project.

Production

Production refers to all activities, which involve actual recording of audio-visual material. In comparison to the pre-production stage, this stage was relatively unproblematic. Arranging the set took approximately 2 h each day of filming. This included organising lighting, camera angles and positioning of the actors. Shots were filmed using two separate cameras. This meant that important parts of blood pressure measurement could be filmed close up and from a distance simultaneously thereby breaking the monotony of a single shot film sequence. Each day, the material was replayed and reviewed. Every sequence involved approximately three re-takes with some scenes taking up to eight. During the re-takes, it was important to ensure continuity. For example, it was necessary that the actor remained in the same position in the bed and wore the same nightwear. The production phase lasted four days. During this time, the team also obtained permission to film general hospital activity which was used as additional footage within the video. This was aimed at giving students a realistic setting in which to frame the video. Voice-overs were recorded in a sound recording studio shortly afterwards.

Post-production

Most of the initial work in the post-production period involved evaluating and editing the filmed material. The material (video, audio and 3D animation clips) were compiled into a master digital video draft using Final Cut Pro, Cinema 4D, Macromedia Flash and Adobe PhotoShop. The multimedia students performed all of the digital video editing work. From a producers (and nurse educator's) perspective, it was important to be

meticulous in reviewing the content and aesthetic nature of the video given that it was an instructional video for nursing students. It was imperative that the end product was clear, correct and easy to follow. This involved making decisions to re-shoot some sections in some cases. The video drafts were shown to a sample of fellow nurse educators and practitioners for informal review. Any comments and recommendations they had were acknowledged and amalgamated into the final product. In order to facilitate the students in borrowing the videotape, a number of copies were made and added to the university library collection.

Discussion

The outcome of this project resulted in the creation of a 24 min teaching video, based on the skill of blood pressure measurement. This was achieved through collaboration with nurse educators, practitioners and multimedia students. Whilst efforts to develop innovative ways to facilitate student nurse education are advocated ([Nursing Education Forum, 2000](#)), the effort required to produce such innovations is not to be underestimated. This paper sought to highlight considerations, based on the experiences gained in this project, which should be made by fellow nurse educators thinking about undertaking similar projects. Despite the relative dearth of comparable literature in this area, it is reassuring that similar experiences were apparent ([Burnard, 1991](#); [Ryan, 1999](#); [Currie, 2003](#)).

The true test of the success of this project lies in its usefulness to the population, which it was intended for. Evaluation of this tool is currently underway with a population of student nurses. Initial analysis finds that 55.2% of the group 'agree' that the tool is appropriate to take home as a learning tool, with 28.2% 'strongly agree' its appropriateness ($n = 163$). However, more detailed analysis of the efficacy of the videos is undoubtedly required. This is expected in the near future.

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