

Title of paper: Using Video Technologies in Teacher Preparation: benefits and challenges

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Abstract

The steady growth of technology usage in classroom teaching and learning has been of enormous benefit to teachers and students. Information Communications Technologies (ICTs), which embrace technologies that span across audio visuals to computers and internet continue to unfold a host of technologically-based learning initiatives. Videos, as one such tool, can communicate complex information to students by creating a motivating, memorable and an inclusive learning experience. The process of producing videos to support teaching and learning can be a complex one that may involve the expertise of a number of people. The interaction among these people and the need to keep the purpose of the video in mind are two important factors that can determine the value of the product. This paper highlights the experiences involved in the production of videos/CD-ROMs as an educational resource in a postgraduate distance education programme at the University of Education, Winneba, a teacher preparation institution. The video/CD-ROMs are short clips of real-life demonstrations based on TESSA open educational resources (OER) that offer easy-to-understand tutorials on some teaching strategies, counseling sessions and mentoring scenarios for teacher-mentor trainees. The video clips are used as part of texts interfacing with each other to create a virtual classroom for the teacher-mentor and the mentee. The paper also looks at some potential benefits and challenges associated with preparing the video materials in teaching and learning at a distance.

Introduction

In recent times, there has been a lot of emerging ways of delivering education and training to students, particularly, distance education students. The combination of teaching, delivery assessment and communication components that are used in producing effective instructional and support process are evolving. These elements are termed teaching strategy. For example, the contact between Distance Education (DE) institution and students can be made by fax, emails, videoconferencing and teleconferencing and most recently, the internet (online). With videoconferencing, teleconferencing, specific times are agreed with students to get together

for effective tutorial work. Assignments are then discussed on regular bases with videoconferencing. Thus, DE has the opportunity/potential to use a resource-based instructional methodology where effectiveness depends a lot on the quality of the resources for learning and the appropriateness of the delivery media. Further, the choice of media in DE has more to do with the nature of the learning task involved than the availability of media or technology. The situation is such that the media that will enable students to gain the required skills, knowledge and experience efficiently and effectively are what is considered and selected. In this regard, the best option is worked out with the assistance of an instructional designer and the tutor or subject matter expert (SME), analyzing the learning task to select the form of media appropriate to the objectives of the course/programme. Thus, when planning DE instructional strategy, the advice given is to:

- a. gather together the materials currently in use to support the teaching of the programme
 - b. examine them and compare them with the learning objectives of the programme.
- (Towers, 2007)

Then, a decision about media selection could be made based on the above. Clearly, the constructivist practice of mobilizing experts to ensure that the end product is of a high quality is promoted.

Background

The evolution of video-based case studies as tools for teaching and learning has its roots in theories including reflective practice and case methodologies. Donald Schön (1987) in his book, 'Educating the reflective practitioner: toward a new design for teaching and learning in the professions' suggested the use of video for reflective practice analysis to enhance practice. Similarly, Perry and Talley's (2001) paper on 'Online video case studies and teacher education' noted that case study methodology has become a powerful tool for bringing the complexities of the classroom into focus and supporting pre-service teachers in connecting knowledge and practice. Case study methodology may be seen as drawing on situated cognitive theory; where the experts recommend situating the video case studies in real-world classroom experiences and events. Shulman (1992 in Perry and Talley, 2001) also suggests case methodology as an effective tool to create a bridge between principle and practice in an 'engaging, more demanding, more intellectually exciting and stimulating' way.

It needs to be said that the benefits of using video in teaching and learning contexts are enormous and have been well documented in the literature. For instance, it is documented that videos provide natural medium for enhancing the sense of context and realism in case studies. It can capture the complexities of classroom interactions and allow students/learners to replay events and thus see important features that escaped them on their first viewing. Videos also provide vast amounts of rich detail usage of images and sound that capture the immediate real classroom and authentic learning experiences. These and many more are the benefits of using videos in teaching and learning.

However, one needs to be reminded and to realize that video by itself is not a curriculum, rather it is a medium which can be developed into a resource and used in specific ways to enhance learning and teaching. Videos have become part of the curriculum for learning if designed to be used in intentional ways towards intentional learning goals. There are examples of authentic classroom teaching scenarios used to supplement lectures and provide more exposure to real teachers in the act of teaching. But, the expense and complexities of the technologies required for the development of such videos are yet to be considered. For example, besides the subject matter experts and pedagogical instructional tutors, there are other items such as multiple microphones, cameras, wires stretching across classrooms and a team of operators and editors to make the videos a reality.

Also, videos need to be embedded within a process of inquiry about practice and sound instructional approaches. Learners must be guided through an inquiry process when using the materials for the case studies to become valuable learning experiences. In this regard, there is the need to consider pre- viewing, viewing and post-viewing tasks or activities for the student/learner.

UEW videos for teacher preparation

Preparing pre-service and in-service teachers at a distance is one of the mandates of the University of Education, Winneba (UEW). These teachers should be able to select or assemble and use appropriate learning resources, including technology to address the learning

needs of students. In the light of this objective, preparing quality teachers implies using different methodologies such as discussed above to meet their needs. TESSA materials, which are online educational resources (OER) have been found to be useful for both students and lecturers in their methodology lessons. This is because TESSA materials have activities and case studies that are key resources which could be used for practice. The TESSA website (www.tessafrica.net) can be seen as a useful one in enhancing and improving the quality of teaching in schools and the training of teachers. We, at UEW, have therefore selected some case methodologies, developed them into simple video clips in real life environments to enhance the learning that we desire students to have. In this paper, I discuss some experiences involved in the development and production of these short clip demonstrations based on TESSA web resources for our distance education students. The goal of the clips is to emphasize certain techniques, skills and strategies that the texts of some modules have described but showing real-life demonstrations would help to reinforce the knowledge gained.

The Video Development Process

With the focus of the videos on distance learners, the end users, certain factors had to be taken into consideration and therefore needed the expertise of technical personnel or technical crew during the planning and development of the videos. Learners' characteristics such as: age, interests, abilities, cultural backgrounds and educational levels were crucial for consideration. Among the technical experts engaged to do the task included instructional technologists, videographers/directors, camera men and subject matter experts (SMEs). These people were brought together at a workshop to fashion out what needed to be done. The reason for bringing these experts together is because for educational videos, it is necessary to bring to focus certain instructional considerations. For instance, what the goals and objectives of the videos are? Who are the learners? What exactly the content of the video will be addressing and many more questions. The objectives being what exactly the group wanted to achieve with the videos and what the learners are expected to be able to do better after watching the videos.

Design and Planning stage

There are four stages involved in the design and production of multimedia CD-ROMs for teaching and learning. These are; content developers or SMEs selecting content to be

captured, shooting script development, video production and interactive multimedia CD-ROM production. For the start, subject matter experts (SMEs) had to identify aspects in their written modules that had to be captured on video to give a better understanding of a concept or technique or skill being discussed. These aspects were labeled as ‘hot spots’ or ‘sign post’. At the workshop, participants were taken through the details of planning and shooting of these ‘hot spots’.

Template Development: Following the identification of the ‘hot spots’ is the script writing exercise. The SMEs had to vividly described scenes or visuals that the videographer could capture even in their absence. In this regard, a script writing template was designed. This is shown below in table 1.

Table 1: An example of a script writing template

Module Title: ... Counselling in Teacher Education

Episode:Non verbal communication

Name of SME*: Mr./Mrs./Miss/Dr/Prof

No	Synopsis Video Clip	Visual Description	Narration	Notes
	This Video depicts some basic types of non verbal communication a. Kinetic b. Facial expression c. Gesture	Counsellor sits with back leaning against the chair and elbows on the chair Counsellor smiles broadly Counsellor squeezes the face and moves head from side to side. Counsellor puts finger on lips with the sound “shhh”	This clip shows real life examples of non verbal communication of Unit 2, section 1 and Activity 3 of your course book This counsellor is seated in a relaxed position. These are examples of different facial expressions. What do you think this person is doing? He is calling for silence.	Refer to Unit 2, section 1 and Activity 3 of your course book

SME* =Subject Matter Expert

If music is to be added to the script or an emphasis is needed in the description, it is indicated under the notes column. Again, if a narrator's voice is also needed, it is added to the script under the narration column.

This outline is supposed to help the videographer visualize what needs to be captured and the kind of narration accompanying each clip. The video synopsis and visual description columns provide the explanations and commands of the shots and any other special effect or feature to be captured. With the narration, the emphasis is on what needs to be learnt and what learners ought to pay particular attention to. There could be an audio section such as music (if any) and the tone, how loud or low or fades up as narration is in progress, could be added to the notes column as well.

Pre-production stage: With our target group being teacher trainees, the issue of how much they know about the topics and their educational level, age and socioeconomic status, and attention span as adult learners have to be taken into consideration in the capturing. Therefore, we planned the clips to last for 3 to 5 minutes, with emphasis on the skill, technique or strategy that we want the trainees to acquire. Other effects of the clips that SMEs considered necessary and adopted were: 'on-screen-text' to support what is said. For example, if the video clip is about the different types of communication skills, the types are immediately written on the screen as narrator calls them out and talks about them. It is believed that the text screen will also assist the learners to retain information better. The experts team further agreed that music should be used as special effects to indicate the changing over of topics or from one clip to the other. As much as possible, the clips were to be kept simple and the narration also kept between 30 – 45 seconds per clip. For the sake of clarity and quality, the scripts were peer reviewed before shooting to make sure that they were exactly what were needed.

Shooting of video

The shooting stage brought together the cameramen with their light and the videographer. Before the shooting, ten volunteer teachers were selected from a nearby school to participate in the exercise. The head teacher was contacted to make the appeal and those who accepted the offer were coached on the type of skill or strategy they were expected to role-play for capturing. This was done with their full consent. Outlines of the different strategies of

teaching were obtained from the TESSA website (tessa.africanet.com). The teachers were given the scripts in advance to study and prepare their classroom settings accordingly. Different schedules were agreed upon with the shooting team for capturing. At least 2 shootings were done a day. It needs to be mentioned that though extensive preparations were made before the days and times of shooting, a lot had to be done at each site on the day of shooting. There were a lot of re-arrangements and time spent during the shooting. One clip could have about 6-10 shots. In addition, shooting was done in batches. After each field visit or shooting, some editing and observation had to be done by the videographer and the editor and later with the SME concerned. Thus, activities of the video production stage include: scriptwriting and storyboard, acquiring permissions, securing location, acquiring equipment and materials, shooting.

Video Production: This stage is the actual video making stage. It is the time that the footage is actually shot on location. Inevitably, more than one person is involved. A three-member crew is involved in this activity at UEW. They are the videographer and two camera men. The SME is on location to assist the videographer to transform his course content into a video.

Post production stage: This is where all the editing of the video clips is done and where the various effects are put together into one coherent and comprehensive clip. Again, this is a huge time consuming stage. But because the University already has a studio and the videographer and editor are members of staff, they could spend hours un-end at the studio editing. This is also the time that sound dubbing and special effects take place. The literature states that for a one minute of finished video, it takes at least one hour (60 minutes) of editing time. So for a 10 minute clip you should expect a minimum of 10 hours editing time to complete it. Even that, depending on the number of special effects required, that amount of time may be exceeded. At this stage, the master pieces are what have been produced. If all goes well, there is no need for a re-shoot of any footage otherwise they will have to be repeated. And for bulk production, the master pieces would have to be duplicated on options range from VHS, CD-ROM and DVD or the clips could be put on a web page.

Interactive multimedia DVD/CD-ROMs: This is the stage of turning the courseware into a multimedia DVD/CD-ROM. Multimedia refers to objects that are a mix of text, images, audio, video, animation and other elements.

Challenges in the Production of Video Clips for teaching

As discussed above, the ability to combine moving pictures and sound as videos is a powerful medium for communication and effective for information delivery. Video use is widespread particularly, in the developed world for educational purposes. For example,

- Video clips are used in PowerPoint presentations
- Video clips on CD-ROMs or web sites are used to supplement educational programmes
- Video tapes of experts or guest brought to a lesson
- Virtual tour of a location otherwise inaccessible by an entire class.

However, producing videos for educational purposes need certain understanding of the process. Some of the main challenges are as follows:

1. Time: time consumption is a major challenge to the whole process. It might seem simple that a script is written so when the videographer and the cameraman are out in the field it is easy to capture the scenes but that is not so. It takes a lot of trials for the correct technique needed to be captured. The SME should be in the team to get the correct scene set before capturing. Often the teachers in this exercise had to re-enact scenes over and over again before the right thing was captured.
2. The planning and preparation time is also another time consuming stage
3. As mentioned earlier, the editing is the most time-demanding stage of the whole development. The SMEs and the videographer plus the editor have to stay up for several hours to come out with what is required. So just imagine if any of the team members was sick or indisposed? The whole process comes to a halt.
- 4 Development of the Tapes: one issue in the development of the video clips is the choice of teachers to enact the scenarios for capturing. In this instance, though the idea was whole heartedly embraced by the teachers, it was followed by letters seeking their informed consent and voluntary participation. Even that, two participating teachers in the group later felt inadequate about people noticing their shortcomings in the videos so opted out. The others had to be reassured and convinced that it was only on an aspect of the teaching that would be captured and not the whole teaching

session. Moreover, they will be coached and guided by the team. After capturing, the tapes were reviewed by the project team and some uncomfortable results were erased whilst others were re-captured.

- 5 Because regular classroom scenes were desired, capturing was done with portable equipment in a variety of classroom settings. It was quite tedious cutting back and forth between classroom and the studio several times when scenes captured were not desirable.
- 6 Project team members, by the nature of their work as either head of department or units they had other demanding roles and responsibilities. Therefore, getting them to meet as a team to review the work was a challenge. This is because their busy schedules hindered the project work. On several occasions project meetings had to be postponed.

Concluding, it is clear that distance education may be delivered through the use of various learning and teaching resources and supported by teachers using a variety of means of communication. Presently, there is a growing need for better, more accurate and effective multimedia production in the teaching and learning world. Every good teacher wants as much as possible to present information and ideas to stimulate his or her students by using such techniques, which have become a universal remedy for communication, teaching and learning. It is steadily becoming more complex with the emergence of the Internet and the World Wide Web (www). However, the technical aspect of creating video materials and the stages of developing them can be demanding. Even though you might not have the technical knowledge and experience in developing one by yourself, there are professional organizations that could be hired to do so. But the caution is that different kinds of expertise are required and the development process is time consuming. But when ultimately it is produced, the products are worth using by distance learning students as a flexible instructional strategy.

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