

THE USE OF VIDEO AND MULTIMEDIA IN TEACHER EDUCATION

Palmas Anyagre

Sarah Anyagre

Department of Educational Foundations

Centre for Continuing Education

Univ. of Cape Coast

Univ. of Cape Coast

ABSTRACT

Hurst and Reding (2000) indicate that the noun ‘professional’ means ‘a person who does something with great skill’. Trained teachers should therefore exhibit great skill in teaching. Glaser (1993) took these ideas a step further and stated that “getting the job done, even done well, is good enough for nonprofessionals, but continually improving the way the job is done both for themselves and others, is the hall mark of professionals. This should be an apt description for teachers, because as professionals, we should always be looking for better ways to teach.

The educational institution globally is witnessing a shrink in the unproductive teacher talk and repetitive notes taking which accompanied an era of ‘chalk and talk’ teaching supported by the print media. We are now witnessing an expansion in media used for teaching in the classroom. These have been termed ‘multimedia’ sources. Vaughan (2004) has defined multimedia as any combination of text, art, sound, animation and video delivered by computer or other electronic or digitally manipulated means. The power of multimedia lies in its ability to electrify the thought and action centres of peoples minds with the sensual elements of dazzling pictures, engaging sounds and compelling video alongside textual material.

The underlying factors for the growing preference for multimedia include manifest and latent ones. The former include the grand strides made in Technology as well as the physical and emotional attraction that come with it. The latter include the high fidelity and benefit on creativity that go with these modern sources of teaching. The manifest factors have been highly touted as they apply to all users of technology for both pleasure and learning.

One modern source of teaching that ranks highly as far as the benefits of fidelity and creativity are concerned is the video. However, the video has been little explored for teaching in the developing world. Despite its extensive availability in Ghana and other developing countries today, it has largely remained an entertainment tool, meaning that young learners are more activated in entertainment activities and much less so in learning.

This presentation will therefore focus on the latent benefit of using video in professional teacher education in Ghana. The pedagogic steps involved in applying video as a teaching tool will be discussed with a special focus on teacher education. The presentation will also seek to demystify the cost impediment and expose new possibilities in the use of video and multimedia in teacher education, both in instruction and as an important supplement to teacher mentorship in the teaching practice activities.

Futhermore it will examine the current structural arrangements for teaching in the colleges of education in terms of their suitability for teaching with multimedia and the necessary expansions, adjustment and linkages that have to be made to facilitate the integration of video and multimedia into our teacher education system.

INTRODUCTION

It is commonly stated that teaching is a profession and trained teachers are professionals. Hurst and Reding (2000) indicate that the noun 'professional' means 'a person who does something with great skill'. Trained teachers should therefore exhibit great skill in teaching. The authors also indicate that the adjective 'professional' means 'worthy of high standards of a profession'. This means that for teachers to be professional, they need to learn what those high standards are and then strive to meet them.

Glaser (1993) took these ideas a step further and stated that "getting the job done, even done well, is good enough for nonprofessionals, but continually improving the way the job is done both for themselves and others, is the hall mark of professionals. This should be an apt description for teachers, because as professionals, we should always be looking for better ways to teach. We need to care about doing the best job of teaching our students and making a difference in their lives.

If this is the case, then we need to be uncomfortably with two comments that are currently commonly expressed about the students who graduate from our institutions of professional training for teachers. One is that their professional delivery is weak. The other is that, high scores in courses of a professional nature, such as proficiency in teaching, do not reconcile with delivery in teaching. Such comments tell us that we may not be doing the job the best way, and also that we should be looking at a way of improving the way we do the job. As professionals we have to act rather than offer the usual excuses that these comments are not scientific and that delivery is improving.

In addition to this is the issue of Professional development. This is a two pronged issue. Teacher education is a business in professional development. Beyond this it must also

empower its graduates to develop professionally after school by giving them a capacity to do so. According to the thesaurus of the Educational Resources Information Center (ERIC) database, professional development refers to “activities to enhance professional career growth”. Such activities include inservice training, peer collaboration, mentoring, curriculum development, continuing education and even individual development. This suggests that Professional development goes beyond teacher training and may be termed teacher education which implies that it includes the formal and informal ways in which teachers are assisted not only to learn new skills but also to develop insights into instructional strategy, have the ability to examine how they practice it and the capacity to explore new and more productive ways of handling content and resources in the delivery of instruction.

It is the light of these issues pertaining to getting the job done efficiently and effectively, reflecting on how productive our efforts have been and empowering the teacher to grow professionally that this presentation seeks to offer a new dimension which if explored can add an enormous value to the training process and performance of our teachers. This is the use of multimedia, with a focus on the use of video in the teaching and training of teachers.

BENEFITS OF USING VIDEO TO TEACH

Multimedia is an all inclusive term which refers to the use of a variety of sources in presenting information for learning. In recent times, the term hypermedia has rather been more commonly used. Alessi and Trollip (2001) indicate that the concept of hypermedia includes information that embodies a multisensory combination, including texts, audio, video, and photographs. This means that hypermedia represents an extension,

improvement and integration of the books or print medium that has been our main source of teacher training, with other sources to give it a greater sensory power. It also means that they add a lot of value to what is in print rather than a totally different source. This discussion will not focus on hypermedia in general as research evidence has not concluded altogether on its superiority, giving the various circumstances and levels of skill with which it is used. It will however focus on the Video because of its high ability of combining two of the most powerful cognitive tools for encoding meaning in memory which are attention and fidelity.

A cursory observation of students watching a video film will suggest to anyone the power of this instrument in capturing the attention of learners. The psychology of memory attests that attention and motivation are the main precursors of learning. However as this benefit of the video is obvious, there is less need to delve too deeply into it, but consider the other benefits of using video in teacher training.

1. **High Fidelity:** Alessi and Trollip (2000) define fidelity as how closely a simulation imitates reality. In teaching student teachers about classroom management skills, the best medium cannot be words, but a video footage depicting a well managed classroom. Questioning skills can best be taught by the students observing the various kinds of questions and teacher handling of questions in a video footage. Teachers Colleges in Ghana try to provide high fidelity by the institution of an observation period whereby students spend time in regular classrooms. Consider the time and money spent in commuting to such classrooms, the effect of observing negative practices and taking them for positive, and the danger of turning such visits into excursions. A twenty

minute video which can be used in 38 classes in 38 training colleges will be much cheaper, with an equally high level of fidelity and further opportunities for focused presentation and discussion.

2. **Skill learning:** Teaching students the practice of cultivating on farm beds, fish farming, basic vegetable preparation, how chemical bonding occurs, puberty rites and the like involve the demonstration of some skills. While a teacher can attempt to describe such in class, the most efficient and effective means of delivering these skills is the video. A basic characteristic of the video presentation is that it can be shown several times. This gives the teacher the benefit of using it for emphasis and the learner for mastery. It can also be reproduced, which makes it possible for the same video product to be used in all the Colleges of Education for teaching the same topics.
3. **The development of Creativity:** Tudor (1972) defines creativity as a process by which a person combines flexibility, originality and sensitivity to ideas, to enable him break away from the usual ways of thinking and doing things to a new and productive way. We defined teacher professionalism as involving a continuous search for new and better ways of teaching and handling school affairs. This means that teachers need to be creative. However psychologists have agreed that creativity is an innate potential which if not developed, will remain latent in the individual. Creativity can only be developed through the use of a teaching process that promotes its development. Such a process includes stimulating thinking, making teaching concrete and full of interaction and discussion. Unfortunately, our current teaching approach in teacher

education serves to compel students to be passive as they receive notes and solve problems the way their tutors expect them to. The potential of the video presentation to generate discussion and learning is enormous. It can serve as an effective advance organizer, present vital psychomotor and cognitive skills and enhance meaning of content in lesson delivery, as well as serve as an effective closure tool. These benefits suggest what we are losing by not using this tool in our attempt to make our teachers more able to be creative in their teaching. In Ghana students of the Colleges of Education take a one year internship programme on completion of College courses. One examination that students took at the end of the one year internship was on the proficiency in teaching in which they consistently registered a high level of failure. This is a testimony to the fact that in thinking about teaching, the textbook or lecture notes attitude, rather than creative professionalism is at work.

4. **The development of Multimedia Literacy**

According to Gutierrez (2009) the primary objective of educational systems include the development of the individuals ability for self expression and communication in various forms through writing, music, art and the like. However, success in achieving in formal education evidently relies on comprehension or understanding of the messages made available in instruction. Literacy as a concept has overgrown the exclusive use of alphabetic language to its implications for both the individual and the society. It is only by this that literacy can influence the transformation of the social. A literacy process that is based on the mechanical procedures of encoding and

decoding texts in the classroom can no longer serve the purpose of our society. Ghana like other developing nations have continued to convey an educational delivery process that stifles the prospect of the environment being brought to the classroom for better comprehension and extension of the ability of learners to transform society. This handicap obviously reduces the literacy potential of school leavers. Since the quality and practice of teachers determines the final output of their students, it is prudent that any improvement in this situation begins from teacher education

5. **The provision of teachers with Cognitive tools for thinking**

The human brain is no longer a 'black box' as studies in brain psychology have provided substantial knowledge about what happens in the brain as we learn. The effect of information processing on memory and performance has been highlighted and the factors that support the appropriate encoding, storage and retrieval of information have been exposed, centering highly on the power of cognitive tools in enhancing thinking. Cognitive tools are generalizable computer tools that are intended to engage and facilitate cognitive processing (Kommers, Jonnassen and Mayes, 1992). They are mental devices that support, guide and extend the thinking process of their users. Their main function is to activate appropriate mental models in the brain thereby enhancing the interpretation of new information and assimilating new information back into those models (Jonnassen, 2009). The power of a video clip to bring reality into the learning environment makes it one of the most useful tools of cognitive processing and memory. This can be testified by the

fact that students who watch an interesting movie can remember almost 80% of it after one hour but can remember only about 25% of lecture information after the same time lapse. Indeed, the teacher in the 21st century cannot afford to miss out on this benefit of using the video to enhance lesson delivery.

ROLE OF VIDEO IN TEACHER EDUCATION

Teachers in pre-service training are greatly influenced by the way their tutors deliver content. The effect of seeing an example is more powerful than being told what to do when you are teaching a basic school lesson. For this reason, the best way to groom professional teachers is by using professional methods in teaching them. The use of video in teaching teachers under training will make them taste first hands the joy of using video as a teaching tool. This is centred on the following merits:

1. Video adds variety to the teaching learning environment and has a special appeal especially with visual learners. According to Alessi and Trolip (2001) the strength of video in teaching lies in the fact that it can take many forms such as a soundless demonstration of a procedure, cartoons, an unseen narrator describing the activity seen in the video, dramatic plays, interviews, and teaching documentaries among others. Videos can even be used to depict things that cannot be seen with the common eye such as the life cycle of insects, a developing foetus in a womb and so on.
2. Videos also provide a common experience for immense learning through discussion. Letters can evaluate attitudes depicted and this can be a good source of attitude change. A narrator explaining the procedure to perform a scientific experiment or operate a device can be discussed in class. This is more effective

- than reading words about it and reduces mistakes and wastage of materials that will be committed in undertaken the actual experiment.
3. It allows students to be engaged in problem solving and investigative activities. Video can be engaging, entertaining and thought provoking (Allessi and Trollip, 2001). The visual detail it provides can be used to provoke problem solving activities. Such an experience is only too vital for Ghanaian teachers working in an environment where instructivist chalk and talk predominates. The problem solving skills of both students and teachers is weak and this stifles their creativity and innovative abilities.
- One other critical merit of teaching with video is that it trains the student teachers on media literacy. According to Guitierrez (2009) media literacy is that which prepares people to utilize appropriate procedures when critically viewing different kinds of media (different in function or system of symbolic representation) so that they can assess what happens in the world and improve it to the extent that they can. Procedure in teaching is as important as content. To the extent that video provides a superior procedure than verbal information and text, its use as a teaching tool will surely revolutionize the teaching landscape in Ghana. For instance, the development of listening skills is an important media literacy skill. Listening for global understanding and listening for detail are both important. The listening skills of our students is weak especially when we deliver lectures and talks. They only listen when they are taking down notes. However, in watching video, they engage in more listening and comprehend a lot of detail.

Once the decision has been made to use a video in class, thought should be given to what purpose the video is being used for i.e. the role of the video. The way the video is used and the materials prepared for use with the video will depend on the role the video is to take. Below are four possible roles for video. (Adapted from Willis' 6 roles for video 1983: 45)

- **To provide information**

To provide content relevant to students' needs and interests. Video production for teaching is always based on local events and settings. Such local relevance enhances understanding and above all, makes student teachers aware of how to seek the same when they begin practicing as teachers. Good practices in local classroom settings can be very useful background material to teach student teachers.

- **Presenting or reinforcing language**

Grammar, vocabulary, functions and indeed, all forms of language are exposed in video. This makes it an effective source of enhancing language as we teach subject content in social studies, science, education studies etc.

- **Stimulating language production**

Video can be used as a basis for discussion, a model for learners to follow and a visual aid. Interaction must always follow viewing of the video clip. This is a source of language production and expression. In recent times students in colleges of education seem to be avoiding the use of English language which continues to be the official language. Video is one interesting means of constantly involving

students in English language production. It is interesting to set questions for students to respond to as homework or in groupwork following a video presentation.

Note that all these roles are essential for the education of teachers who must of necessity possess good language and interaction skills.

In using video beneficially, care must be taken in selecting the appropriate form suitable for the objectives of the content to be exposed. In this regard it is relevant to identify the forms of video that are available or may be produced for educational purposes in our colleges.

VIDEO TYPES

- **Animation/Cartoons**

When properly used, animations greatly enhance learning. They certainly capture more attention than texts and make learning vivid. A great variety of animations are available for selection but may be more expensive to produce in Ghana.

However, where making an original video is difficult such as depicting how a crops grows with and without the application of fertilizer, the rotation of the planets and so on, creating an animation becomes useful.

- **Educational programmes**

Documentaries made for children about science, nature and environmental studies are more useful than the use of still pictures or verbal explanations. Video clips on the railway, vehicles, market scenes, the chiefs palace, festivals, political events and so forth can be made from simple digital cameras or even mobile phones.

These can be a vital support to teaching and learning as they aid learners to construct their own knowledge of these events and issues through discussion.

- **TV teaching**

In Ghana, the innovative Presidents initiative on distance learning is an example of TV teaching. Playbacks of this kind are an effective source of teaching which can reach large numbers of students. For instance, the traditional demonstration lessons that colleges of education normally deliver for teachers in training can more easily be accomplished by a video clip of a model lesson. Mass production of video can make this cheaply available to all colleges with dramatic effects on students interests and teaching skill development.

- **Drama**

One important source of teaching language and social studies is drama and one exciting medium for using drama in teaching is the video. Organised production of such videos can be made by subject associations or central institutions such as the Teacher education Division of the Ghana education service. Scripts and storyboards for such clips could be designed based on the syllabuses of the colleges and the production can again be made cheaper through mass production for various schools and colleges.

The potential for teaching with video is enhanced further by computer applications. Such applications include:

- **The voice over** , where the video footage is accompanied by a voice narration of the points of emphasis in the video. These are essential in teaching and voice over

could be in the form of questions for discussions. The discussion approach is evidently the best in the professional training of teachers.

- **The print over – statements and questions can be incorporated.** A video footage for educational purpose must necessarily have print over information which are text statements of what is being depicted in the video. It provides a strong learning focus for the video and these bits of information can even form the core material for the lesson or serve as a stimulus for further reading.
- **The use of cutaways makes comparisons possible.**
In teaching with video it is possible to move from one scenario to another to portray a desired effect. For instance, in teaching about a problem child it is possible to show a footage of the child in a classroom setting, moving over to a playground setting and then a dining setting for comparison of the behavior trait being studied.
- **Effects of various kinds.** Cognitive psychologists have proven that the portion of the brain responsible for memory is also responsible for emotions. Video can convey emotions through several effects such as sound or music variations, voice and facial variations and other elements of surprise and tension. All these enhance attention and learning.

Though video has such an immense potential for improving professional practice in teaching, one major obstacle is our perception that video production is a highly technical field. This is far from the case. Any tutor in the training college will need only two weeks training to develop the skills required for scriptwriting, shooting and editing video

productions effectively. The preparation of tutors for this important activity is therefore possible.

CRITERIA FOR SELECTING VIDEO

Though it is obviously better to produce one's own video material which will be particularly suited to what one wants to teach, it is sometimes not necessary to do so. The inability to produce a self-made video should not hamper its use as there is a great array of available video productions which may be selected and used for any lesson. Thompson (1993) suggest that when selecting an authentic video for use in the classroom certain general criteria should be kept in mind.

- **Watchability**

Is the video interesting? Would a young student teacher want to watch the video?

- **Completeness**

Tomalin (1991: 50) 'The ideal video clip tells a complete story or section of a story'. This idea of completeness is important for learners because for many of them a key motivation for watching a video is enjoyment.

- **Length**

The length of the clip is important, it should not be too long, perhaps between 30 seconds and 10 minutes depending on the learning objective.

- **Appropriateness of Content**

The content should be suitable for the Learner. If an already existing video is to be used, check the rating if it is to be used for young learners. 'Universal', 'Parental Guidance', for ages '13' or '18' Would the video be suitable for viewing in all cultures?

- **Level of maturity**

7 year olds watching a video made for 5 year olds would probably regard it as 'too babyish'. On the other hand using a video intended for older children with a group of younger children might lead to the children not being able to understand the concepts in the video.

- **Availability of Related Materials**

Many authentic videos now come with ready made materials that can be used..

Other videos may have been adapted from books, which could be used in the classroom to support teaching.

- **Degree of visual support**

A good idea is to choose scenes that are very visual. The more visual a video is, the easier it is to understand – as long as the pictures illustrate what is being said.

- **Clarity of picture and sound**

If the video has been copied from the television it is important to make sure both the picture and sound are clear.

- **Density of language**

This refers to the amount of language spoken in a particular time. Videos where the language is dense are more difficult for learners to comprehend.

- **Speech delivery**

'Clarity of speech, speech rate and accents are all factors in determining how difficult a video excerpt will be for students to comprehend.

- **language content**

'In using video to present language, an important factor to consider is the linguistic items (particular, grammatical structures, language functions, or colloquial expressions) presented in the scene. Another important factor is the amount of repetition of the language content. Authentic videos for young learners will often contain a lot of repetition. It is also useful to see if the linguistic content in the video can be linked to that of the language curriculum or the course book thus providing a way to integrate video work into the course as a whole.

- **Language level**

The language level of the video should be appropriate for the level of the class without the teacher having to explain too much.

SUGGESTIONS

The production of video has been perceived as an expensive activity. This perception is historical, and occurred when the video tape and heavy equipment was associated with its computer technology which have made the production of video clips from small cameras and mobile phones possible. It therefore behoves on tutors in the colleges to exploit this powerful tool for both short and long term benefits to their students and the pupils they will teach after graduation respectively.

The teacher education division of the Ministry of Education can establish a video unit for this purpose. All that is required is one Apple Mackintosh Computer with accessories and Video camera to produce lots of video footage to support teaching in the various subjects and practical teaching skills.

All teacher training colleges possess Television sets and video decks and nearly all towns and villages in Ghana have these facilities. Unfortunately this powerful teaching tool only

serves entertainment purposes. Using video presentations to deliver lessons and creating discussions among student teachers both in the colleges and during internship or teaching practice is a very cheap source of effective training if considered in the light of the benefits that will accrue from it.

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