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Designing Engaging Instruction with Interactive Media

Developing engaging instruction is challenging. Students who have grown up in the current digital age are so used to being entertained and have had their lives so saturated by media that the expectations placed on teachers to captivate them by focusing their attentions on their classroom work are higher than ever. So one could ask, what strategies could teachers use to help ensure the involvement of their students in learning? Today's teachers and instructional designers are learning to design instruction that uses the new technologies that this generation of students find so engaging. Two areas in particular that are emerging as effective means for intriguing students are instructional video and interactive media. Students seem to have an expectation to be entertained in the classroom much like they are in their everyday lives by the television and the various interactive game consoles. Teachers might as well take advantage of this phenomenon by using the same strategies that game designers along with television and video producers utilize in their products to engage today's children and young adults. The problem with doing this is raised by the question: how can it be done appropriately so that is also

has instructional value? This question will be addressed by looking at the research that has been done that offers suggestions for designing media that fits the now common buzzword of edutainment. This paper will look at instructional video and interactive media in terms of how to develop and best use them, the key elements of each, how to make each effective for instruction, the advantages they provide, and strategies for implementing each to maximize learning.

We will start by looking at instructional video and how to go about developing one that will effectively enhance learning. Shephard (2003) states that the best way to present instructional video is “in short in short segments so as to maximize learners’ concentration”. In this same article, it is indicated that it is also important to promote active learning through interaction with emphasis placed on identifying what knowledge the learner should gain from the video (Shephard, 2003). He also believes that “developing interactivity between user and learning resource remains an important aim in the design of learner support activities” (Shephard, 2003). The important point that we can gain from Shephard’s work is that to best accomplish learning enhancement through video a designer should incorporate interactivity with the video. Video itself is linear and hard to control resulting in some of the limitations placed on it. However, when planned, designed, and used carefully, video can be a successful way to draw the attentions of students today into the learning process.

Next we will move to a discussion of developing effective interactive media. The considerations of its development are similar to those discussed for video, but interactive media by definition should be interactive. Based on this I will focus on other important elements to consider when designing this type of media. An important element of interactive experiences and learning is that the user participating in it is not passively involved but is actively involved in the material they are learning (Kennedy, 2004). The result of this is higher likelihood that the material presented will be remembered and then retrieved and therefore learned. Kennedy (2004) also discusses games that utilize interactivity. He speaks a lot about the online virtual environments and communities that have been created and are being developed as a result of online gaming (Kennedy, 2004). Tying interactive games and learning together offers the potential for powerful results if the games are designed to have instructional value for the end user. Games have the ability to both entertain and motivate students while engaging them and promoting interaction with the topic they are learning from the game. Interactive, instructional games are the epitome of edutainment and can probably be considered one of the most effective ways to teach today's learners if designed and used appropriately within an instructional context.

Next to be considered are the key elements necessary for designing instructional videos. There are numerous factors to consider when creating a video intended to enhance instruction. The first things to consider should be addressed in the design process. In fact, the essence of

instructional video production involves careful planning and selecting a topic that is appropriate for video based instruction. The learner should be considered and focused on throughout the pre-production process. Good content that can be presented effectively in the format of video is the first consideration to make when deciding to create an instructional video. Some topics just are not appropriate for video presentations and therefore production time should not be wasted on them. Also to be considered during the topic selection is the appropriate way to sequence the instruction in the video. The content in the video should be ordered so as to enhance the learner's ability to understand it (Morrison et al., 2004). Other things to consider during the planning process are the instructional objective(s), treatment, and locations including brief descriptions of key shots in a storyboard. After the video is produced, how to deliver it and use it for instruction or in the classroom should be considered. If it delivered on the web, it should have been compressed and shot in such a way that will accommodate this format appropriately. For classroom use, the instruction and other supporting materials will need to be developed.

Now the key elements for developing interactive media will be addressed. Again similarities exist between interactive media and video. Topic selection is of the utmost importance once again. However, topics appropriate for video are likely to be very different from those that can be addressed by interactive media. The nature of the two media are very different and the result is that many times when watching video the learner is a passive

participant in the instruction, whereas when engaging with interactive media, the learner is actively involved in the presentation of the instructional topic. It is also important to consider the end-user and how they will be involved in the instruction. The basic question of this is what will their role in the instruction be and how can they be drawn into the instruction at a level that they become a participant in it (Iuppa, 2001). Also an important part of the design process is determining how the user interface will be designed, which can influence the level of success the user has in learning the material. Good content that is not presented in a user-friendly format maybe overlooked unintentionally (Iuppa, 2001). Next to consider in the design process is the development of a flowchart or sitemap, which shows the directions the user can take through to instructional interaction. This then guides the designer in their development of the final product. But Iuppa (2001) advises one more step before final product implementation and that is creation of a prototype. The purpose of a prototype is to make a working model of the final product for user testing. This allows for testing and evaluation of the product before it is complete and released.

In the next part of my paper, I will look at the advantages associated with using instructional video. The important thing to remember when considering these advantages is that the video was well planned and designed. An advantage of video is that “it is able to control the viewpoint and direct the attention of the student to the relevant material, for example using

techniques such as close-ups, image freezing, masking non-essential visuals, pans and tilts”.

Materials that are not relevant can be cut out so that only the important material are focused on

and taught. Videos are also able to demonstrate motion, which can enhance learning when

movement is an essential part of the subject that is being taught. Videos are able to demonstrate

the steps in a process that build upon on another and must be done in order. It can capture and

show the perspectives from the leading experts to a wider audience than they could reach

speaking at conferences and universities. A wide variety of media can be combined including

motion, animation, still images and graphics, indoor and outdoor scenes, and sounds. Young,

McMillan, and Michael S. Parer state that an advantage is that “video permits safe observation of

phenomena that might be hazardous to view directly, for example dangerous scientific

experiments and demonstrations”.

To compare, we will next consider the advantages of interactive media. There are, of

course, some similarities, but the primary differences result from the interaction that it allows

with the end-user and the content through the computer. Crawford (2003) states, “...the

revolutionary new element was interactivity”. He brings this up in a discussion of how to use

computers and multimedia to the best competitive advantage. His point is that this is the main

advantage that computers have over other forms of multimedia. According to Kozma (1991),

“combinations of information technology often called ‘multimedia’ present the prospect that the

various advantages of the individual medium (i.e. print or television) can be brought together in a single instructional environment and used strategically to facilitate learning”. Another benefit suggested by Wartella et al. (2000) was that there are economic advantages that result from using interactive media as a result of the costs and times that it saves. They also feel that there are psychological and sociological values of play provided by interactive games designed for an interactive multimedia-learning environment.

To finish this paper, I will summarize what has already been stated in terms of using what has been discussed to develop strategies for implementing video in the classroom to maximize learning. Video can be used effectively in many different circumstances, but it is important to consider the limitations of it along with remembering the importance of selecting quality instructional video. A teacher should consider the content that the video discusses and whether or not it is appropriate for a video presentation. If it can be presented effectively in another format, it is not necessary to use video, especially if the instructor has to develop the video on his or her own. Also video has the limitation of being linear, and therefore, making it difficult to advance to where the learner wants to go to learn the material they want to learn. If a non-linear presentation and self direction is a goal of the instruction the teacher should consider using interactive media instead of video.

The final portion of this paper will look at the implementing interactive media in instruction in order to produce the best learning outcomes. Important parts of using interactive instructional materials are to examine the quality of them and to put them into context for the learner. Quality is essential since interactivity alone does not allow students to learn from media even sometimes when it is designed with learning in mind. The interactive media should be evaluated to insure that when used the result is enhanced learning. Without this factor, the teacher might as well use traditional lectures and static supporting printed handouts and instructional material. Providing a context for the interactive media will help the students connect it to what they already know along with what they will learn in the future. Materials that are not connected to the learners experience or in other words are without a context are less effective because the learner is less like to make the connections necessary with them to promote active learning.

This paper has taken a comprehensive look at the research base for using and designing effective instructional video and interactive media. We have considered how to develop and best use instructional video and interactive media. Followed by an examination of the key elements of each while considering how to make each effective for instruction. Finally the advantages each form of media provide and the suggested strategies for implementing each in the classroom in order to maximize learning. When properly designed and implemented, both can be used and

considered forms of edutainment. In this case, edutainment is considered a positive term because of its focus on designing it so that it is an effective instructional tool. It is also advantageous to use due to the motivation that it can provide to students in this current digital age. Also important to consider is the fact that it can both entertain and educate students thus engaging them and focusing their attention on the subject matter the instructor is trying to teach.

References

- Beaudin, B.P. (1996). Instructional Video Evaluation Instrument. Retrieved October 23, 2005 from the Journal of Extension: <http://www.joe.org/joe/1996june/a1.html>
- Kennedy, R.S. (2004). Weblogs, social software, and new interactivity on the web. Psychiatric Services, 55 (3), 247-249.
- Kozma, R.B. (1991). Learning with media. Review of Educational Research, 61, 179-211.
- Morrison, G., Ross, S., & Kemp J. (2004). *Designing Effective Instruction*. New Jersey: John Wiley & Sons, Inc.
- Shephard, K. (2003). Questioning, promoting and evaluating the use off streaming video to support student learning. British Journal of Educational Technology, 34 (3), 295-308.
- Wartella, E., O'Keefe, B., & Scantlin, R. (2000). Children and Interactive Media. Retrieved October 23, 2005 from the Markle Foundation:
http://scholar.google.com/url?sa=U&q=http://www.markle.org/downloadable_assets/cimcompensation.pdf
- Young, C., McMillan, R., & Parer, M.S. (1993). Introduction to Instructional Video. Retrieved October 23, 2005 from the World Bank:
http://www1.worldbank.org/disted/Technology/print_recorded/vid-02.html