

# The Use of Video in Learning Products



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## Introduction

Recently, one of BTS's clients questioned the use of video in our products, particularly products delivered online. Specifically, this client mentioned that there is no evidence that video makes e-learning more effective.

This paper provides information for BTS personnel to help them discuss these questions and with clients in the future.

## Questions Answered by This Information

- What evidence is there that supports the use of video in learning?
- How does the use of video affect the clients' ability to support products technologically?
- How does the use of video affect an international audience's ability to use an online product?
- When is it appropriate to use a video-based online learning product? When is it not appropriate?
- Why consider using video? What are the benefits?

## Research Overview

The question about whether or not the use of media (including video, audio, text, and graphics) in a learning experience affects learning has been debated for years. In the 1980's Richard E. Clark stated:

*Media are mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition" (Clark, 1983).*

The main point of Clark's argument is that learning is influenced by the method, or instructional strategy, used to design the instruction, not by the media used to deliver it. Clark's research found that the same instruction could be effectively delivered using different types of media. This led him to conclude that it is the method that impacts learning effectiveness, not the media through which it is delivered. By 1994, Clark began to agree with other researchers who stated that there are economic benefits to using various types of media (for example, some are less expensive than others). However, he continued to assert that delivery media does not have an impact on learning (Clark, 1994).

One of the most notable opponents to Clark's point of view is Robert Kozma. Kozma reviewed the research in this area and concluded:

*Some students will learn a particular task regardless of the delivery device. Others will be able to take advantage of a particular medium's characteristics to help construct knowledge" (Kozma, 1991).*

Kozma states that learning is influenced by media when the capabilities of that media are combined with the instructional method. The main point of his argument is that the distinction between method and media is unnecessary because they are integrated in the design of the instruction.

In general, the two main opposing views on this topic are:

- **Media does not influence learning.** (Clark)
- **Media has an influence on learning through a combination of its capabilities and the instructional method used.** (Kozma)

The argument between those who agree with Clark and those who side with Kozma has gone on for over 20 years and will very likely carry into the future. For BTS's purpose, the distinction is irrelevant. At SMG, the instructional method and the media used to deliver it are integrated to create an effective learning experience. It is not useful or important to break out each individual media element (graphics, text, audio, video) and discuss or evaluate the effectiveness. The combination of the elements within the design of the instruction is important.

As the design of these experiences moves forward, the capabilities of the delivery media are exploited and the limitations are minimized. For this reason, it is valuable to look at the major benefits and limitations of using video within a learning experience.

### Benefits

- **Video sets a common context/sends a consistent message.** Video communicates a consistent message to a large group of learners, even though the group may be physically separated. The video delivers exactly the same message every time a learner views it. Video also provides a common experience for learners who may have very different backgrounds and experiences. With this common experience, learners can discuss issues within the common context provided by the video.
- **Video creates a realistic environment in which learners interact.** Research shows that the closer the learning experience is to reality, the better people learn (Dale, 1969). Video can replicate reality without going to the expense of creating a real environment in which users practice learned skills. Video can also illustrate details of situations too dangerous for users to experience firsthand, while still providing a realistic look at the situation.

- **Video engages learners.** The first goal of any instructional program or tool is to get the learners' attention. Without their attention, there is no chance that learning will occur. Because many people naturally find video engaging, it helps grab their attention. There is research that indicates that physiological responses occur when people watch video. This supports the belief that people are engaged while viewing images (Ram & Girdhar, 1997).
- **Video conveys subtle information.** Video shows realistic signals such as body language and facial expressions that cannot be expressed subtly in other media.

### Limitations

- **Video is difficult to deliver and less accessible than other delivery media.** Video requires equipment necessary for the instruction to be delivered. For people without the necessary computer specifications, audio/visual equipment, or bandwidth (for internet delivery), this instruction is not accessible to them. It may also be less accessible for learners with disabilities. In addition, poor quality video and/or bandwidth limitations can produce a poor experience that detracts from learning rather than enhances it.
- **Video is a passive form of learning.** Some consider a traditional video presentation as a passive form of learning. Research studies have shown that learners report that they invest more effort when using a text-based lesson than when using a video-based lesson. Although both reading and watching video can be viewed as passive experiences, perceived mental processing is generally higher when learners read than when they watch and listen (Cennamo, 1993). However, other writers have stated that physiological responses indicate that learners are far from passive when they view images (Ram & Girdhar, 1997). Whether or not video is a passive form of learning, its value as an instructional media depends on a number of characteristics:
  - The content of the video
  - The structure and design of the video
  - The complexity of the video
  - The interactivity associated with the video
  - The goal of watching the video
  - The characteristics of the learners
- **Video is linear.** Traditional video presentations are linear, in which the only action that the learners take are play, fast-forward, rewind, pause, or stop. In this type of presentation, the learner has little control over what is presented or the order in which it is presented.
- **Video does not cater to different learning styles.** A traditional video presentation caters especially well to learners who learn by watching and listening. For those learners who prefer to learn in different ways, a video presentation alone is limiting, because it does not allow learners to choose another path for learning.

## Conclusions

While determining the appropriate use of all media elements within each learning experience is important, it may not be useful to debate the effectiveness of a single media element within a learning experience. Whether or not a video-based presentation should be used in a given learning experience depends on many factors:

- The characteristics of the target audience
- The type and complexity of the content to be delivered
- The type of skills that the learners are expected to learn through the experience
- The technical requirements and limitations for delivery of video at the client site
- The expense required to produce and deliver the experience through this media compared to others
- The overall design of the learning experience of which this media would be a part
- The likelihood that frequent updates to the instruction will be needed and the cost/benefit associated with those changes

Regardless of Clark's and Kozma's views on whether or not video enhances learning, it is important to consider the following points. First, there are economic benefits to using some media over others. For example, delivering a learning experience to a large, global audience is less expensive to deliver over the Internet than through live classroom courses. Second, BTS designs instructionally sound experiences for learners by using effective instructional design practices and methods, including the appropriate use of media. Third, BTS integrates media and method into its products to take advantage of the capabilities used by the media and minimize their limitations. With regard to the use of video specifically, examples are listed below.

## How does BTS address video limitations?

**Video is difficult to deliver and less accessible than other delivery media.** BTS's video-laden online products include a text option that can be viewed when the video cannot be effectively delivered. If the issue is related to a client's firewall or bandwidth, learners can access the site, but view the media from a CD on their individual computers.

**Video is a passive form of learning.** Video in BTS's products is interactive, not passive. The video is presented in concise chunks, and is directly related to the course's content. After viewing video, learners are asked to analyze, discuss and/or make decisions about what they have viewed.

**Video is linear.** The bulk of video used at BTS is in simulation design, where video provides a realistic context for the learner and drives the storyline forward. Learners make simulation decisions that affect the story's direction. In this way, the video is much less linear than a traditional video presentation.

**Video does not cater to different learning styles.** The bulk of video used at BTS is in simulations, which are rarely used as stand alone tools. The simulations are embedded within classroom experiences or larger online solutions which contain various other resources and materials for learning. The learning objectives for an BTS product are met in more than one way in each product, so that learners who do not learn well from simulation, will learn from the accompanying classroom discussion or exercises. In the case of online products, they can instead learn through the tutorials, tools, and other resources provided. In this way, BTS solutions are designed to accommodate different learning styles.

Even when video is designed effectively in a product, there are still situations in which using video in online learning may not be appropriate. In these cases, non-video alternatives should be explored. These situations include:

- **Technical delivery limitations.** Technological limitations occur when, for example, technology or bandwidth is extremely limited, or when firewall issues prevent streaming media. In these cases, it may not be practical to deliver video. Therefore, a non-video option should be considered.
- **Cultural differences.** Video effectively captures and presents verbal and non-verbal communication, gestures and other body language. If there are cultural differences between the characters in the video and the learners, the video may present words or actions that the learners find offensive or confusing. Because it is time consuming and expensive to adjust video to the audience, it may be more appropriate to use a non-video option.

If a product is designed for a specific audience, the culture of the learners will be considered and analyzed before designing the video. This will help avoid cultural issues that could be problematic in the future. Because SMG's standard products are built for broad, global audiences, it is not possible to design them to suit every culture's specific practices.

## Summary

In summary, this information can answer the following questions about the use of video in SMG's products, specifically products that are delivered online.

- **What evidence is there that supports the use of video in learning?**

Direct evidence to support the use of specific media (video, text, print, graphics) in learning is not available. Instead, research shows that learning occurs or does not occur because of the method or design of the instruction, or the combination of that method with the capabilities of the selected media. The importance lies in the manner in which all the elements of the learning experience are pieced together, not in the specific media elements.

- **How does the use of video affect the clients' ability to support products technologically?**

It is currently more difficult to deliver video over the Internet than it is to deliver text and simple graphics. Difficulties in video delivery include bandwidth limitations, firewall issues, and lack of necessary computer hardware to view the video content. For each client, specific limitations, if any, need to be identified. It may be possible to work around these issues, by using the text option, or delivering the media on a CD instead of streaming it over the Internet. If it is not possible to work around the client's limitations, it is not appropriate to deliver to that client a product containing video.

- **How does the use of video affect an international audience's ability to use an online product?**

Depending on the locations involved, it may be more difficult to deliver a video-based product internationally than within the US. As noted earlier, there are technological and cultural issues that may stand as obstacles to delivery. For each client location, it should be determined whether or not video can be delivered. If not, appropriate accommodations or other options should be suggested as alternatives.

- **When is it appropriate to use a video-based online learning product? When is it not appropriate?**

Video works particularly well in conveying subtle information to the learner for interpretation. It is also very effective in creating a realistic environment and providing ways for the learner to interact with that environment. This type of interactive video is successful in teaching leadership or other soft skills. It is valuable for learners to see and feel the way people respond to their actions as leaders. Because this environment is close to reality, learners draw strong parallels between the simulated environment and their real work. This helps them bridge the learning to their actions back on the job and remember what they have learned.

Assuming that the video-based online learning product is designed well and the video is used appropriately for the content, there are still a few situations when it may be inappropriate to use a video-based product. They include:

- Technical delivery limitations
- Cultural differences

- **Why consider using video? What are the benefits?**

When video is appropriate for the learning experience, it has many benefits. Like any other media element, the appropriate use of video depends on several characteristics:

- The characteristics of the target audience
- The type and complexity of the content to be delivered
- The type of skills that the learners are expected to learn through the experience
- The technical requirements and limitations for delivery of video at the client site
- The expense required to produce and deliver the experience through this media as compared to others
- The overall design of the learning experience of which this media would be a part
- The likelihood that frequent updates to the instruction will be needed and the cost/benefit associated with those changes

Should all these factors indicate that video is appropriate for the experience; it has tremendous benefits in that it can:

- Set a common context/send a consistent message across a group of learners
- Create a realistic environment in which learners can interact
- Provide an engaging way to deliver information
- Convey subtle information

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### About BTS:

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