SAS VIDEO TRAINING... AN EDUCATIONAL PERSPECTIVE

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Introduction

There is no question that today we are living in an age of electronic communications with television as the primary delivery system. Our population, especially those under thirty years of age, have attained adulthood immersed in a daily bath of electronic messages of all types — entertainment, information, spiritual, patriotic and commercial.

The result is a changed population. One of the leading banks in this country recently reported that their new employees were not good readers. Thus, a new mode of communication was needed, something with visual impact. That something turned out to be television.

It would be hard to overestimate the importance of the pervasive TV culture in which we live. Video applications in the private sector is simply mirroring the growth of television in American society at large. Consider the following facts gathered this past decade by the research department at CBS and the Gallup Poll.

- In 1970, there were approximately 95 million TV sets in the United states. That was an average of one television set for every two people. That was a higher per capita ratio that any other consumer product or household appliance — including automobiles, bathtubs, and toilets.
- The average daily viewing per person was six hours and fifteen minutes.
- Watching TV was the preferred leisure time activity for 46% of the American public.
- Sixty percent of the American public received its news from television.
- Approximately 50% of video applications concerned the area of training.

Why is Video Training Effective?

Before I discuss the advantages to video training, let me first answer the question "Is video training effective?". Since video training is a relatively new phenomenon, there is a dearth of available research in this area. However, in the great majority of those comparative studies that have been done, there was no significant difference in learning from television and learning from conventional instruction. In fact where there was a significant difference was more likely to be in favor of television.

There are several reasons why I believe video training is effective. First, the use of video does have a discernible effect on viewer interest and motivation. Video does make use of an exceptional multi-sensory range. In addition, video has the capability to convey subject matter which requires motion plus that which requires thoughtful analysis.

The magic of television facilitates the complexity of material. It is easier to conceptually convey difficult material using television than using conventional instruction methods.

A picture is worth a thousand words. I prefer to turn that sentence around and say that a word is one one-thousandth of a picture. Video can add a dimension of visual impact and visual relationship which cannot be economically achieved with other methods. As I reflect upon the video training already done at the Institute, even though all the components that go into a video production are critical, the most critical is the graphic itself. When that individual turns off the video tape player, the individual does not necessarily remember who the narrator was or what the narrator had to say. But, what that individual does remember is that graphic which was conceptually painted in his or her mind.

Video is not dependent on the mood or personality of an instructor. A live presenter is totally dependent on the nature of his or her own personality and the mood at a particular moment. A good instructor on a good day is hard to beat. But, how often do we have that? Even a good presenter cannot convey strange sights, sounds, concepts, illustrations, and examples to anywhere near the same degree that is possible with video. So, an instructor is really quite limited.

Working with machines and learning from machines is not foreign to data processing professionals. These people have been using various types of machinery for many years. Many of the software programs they have been using include interactive tutorials as well. Many, in fact, write computer-assisted instruction modules.

And if the video course is designed correctly, the information in the video training course can easily be customized on site. The key is designing the course in modular form.

Advantages to Using Video Training

Table 1 illustrates the advantages to using video training and whether that advantage primarily...
benefits the student, the organization and/or the instructor. The first item in the table concerns in-house training. The student benefits since training is brought in house; and continuous on-site training is available. The organization benefits since time lost from the job is minimized. Certainly, in-house training, if it is effective, is preferable to going outside.

The next item concerns students being able to obtain objectives with less instructor time. By a factor of roughly four to one, less trainee time is required to reach the same level of performance than when using conventional instruction. Converting a course to video does not necessarily mean that one can shorten learning time, but one can typically teach more information in the same period of time as well as increase the complexity of the information discussed in the course. In addition, instructors are freed for other tasks. The system can be instructor independent. In fact, the benefits of video go beyond the simple fact of saving instructor time. It can also have the effect of reinforcing an instructor's presentation by building added expertise into the program.

The next two items - flexible viewing schedule and self-paced instruction- are what might be called convenience items. The schedules of many professional people today are very demanding and it is difficult to get groups of people together for training given these constraints. Flexible viewing schedules may be arranged during the working day. With the advent of video tape players for the home, one may view the material at leisure in their home. At the same time the level of understanding in most training courses is very heterogeneous. Individuals can progress through the material at different paces. Video training permits the individual to move through the material at a pace which is most suitable for learning.

<table>
<thead>
<tr>
<th>Item</th>
<th>Student</th>
<th>Organization</th>
<th>Instructor</th>
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</thead>
<tbody>
<tr>
<td>In-house training</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Students able to obtain objectives with less instructor time</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Flexible viewing schedule</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Self-paced instruction</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Scattered personnel</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Consistent presentation</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Instruction standardized</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Reference Library</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Cost Effective</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Specialized training needs</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
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The next item concerns scattered personnel. Company mergers, acquisitions, and normal national and international expansion have resulted in an ever-widening geographical framework of operations and people. Instead of moving instructors and personnel from site to site, the training course can simply be mailed from site to site or multiple copies of the training course distributed.

The next two items are consistent high-quality presentation and instruction standardized. These two items are of prime importance. Training received corporate wide is definitely at a higher level and the training is consistent. Most importantly, everyone receives the same message. This latter fact is usually not true if different instructors are presenting the material.

The next item in the table concerns the establishment of a permanent reference library. The course is conveniently available to anyone who wishes to use it. The course also serves as review for those individuals who were previously exposed to the material.

Video training is very cost effective. Training costs can increase dramatically if travel and lodging are involved. An organization that invests the money and time in training their employees loses that investment very quickly if attrition is high. Certainly, in-house training is preferable to going outside, the video course is available at any time, and time lost from the job is minimal.

The last item in the table concerns specialized training needs. Tapes can be close captioned for those whose hearing is impaired. The tapes can be dubbed in foreign languages.

Frequent Criticisms of Video Training

Two frequent criticisms of video training are that the two-way communication link is missing and the equipment investment that one has to make to view the tapes. I do not consider the first criticism a valid one provided that the video training course has been properly designed and is being properly administered. The full power of using video training is achieved when it is integrated with other training methods. Very seldom would an organization want to release the videos to users without providing any additional instruction. Most sites already have the necessary equipment - a tape player and a television receiver - to view the course. No additional equipment investments are necessary.

Existing and Planned Video Courses

At the present time, there is only one course available in the SAS video library. That is the SAS Basics 100-Series Video Training Course. This course consists of six modules which begin with an introduction to SAS, discusses getting data into a SAS dataset, program processing, working with SAS datasets, report writing and concludes with a discussion of SAS procedures. This course was designed for those individuals who have data processing experience, but little, if any, previous knowledge of the SAS software system. Information regarding leasing arrangements is available from the Institute.

What are the Institute's video training plans for 1982? The SAS Basics 100-Series Training Course is to be upgraded. A number of changes have been made to the SAS software system which will necessitate making modifications to the video modules in this course. At the same time, some of the discussions in various modules will be shifted to other modules; and many of the graphic illustrations enhanced. In addition, the Student Workbook that accompanies this course will be amended and include more exercises, key illustrations from the video discussion, as well as additional cross-reference readings and so on. The Student Workbook is going to be treated as a combined workbook-applications guide.

The SAS/GRAPH Course is presently being converted to video and will consist of four components. The first component will discuss those features of SAS/GRAPH with which everyone needs to be familiar, such as GCHART, G3GRID, G3GRID, the graphics environment, the necessary hardware configuration, and so on. The three additional components will be treated as supplements and are optional.

One supplement will address the area of mapping and discuss the GMAP, GPROJECT, and GREDUCE procedures as well as the SAS map data libraries that are distributed with the program product. The second supplemental component will discuss the G3D, GCONTOUR, and G3GRID procedures; and the third supplemental component will be a special discussion of SAS/GRAPH applications for slide production, how to make cosmetic changes to the picture, and so on.

Additional plans this year are to convert the Introduction to Data Processing course to its video equivalent as well as develop a SAS/FSP video course. Present plans also are to place specialized statistical discussions on video as well.

Video Course Organization

There are two primary philosophies permeating the literature regarding the design of a video course. One philosophy argues that the video should be the primary teaching tool and additional materials used to reinforce one's understanding of the lesson. A second philosophy argues that materials such as workbooks and other readings should be the primary teaching tool and the video used to reinforce it.
Our approach is congruent with the first philosophy. That is, video is being treated as the primary teaching tool and a workbook and self study used to reinforce that material. One concern was minimizing the amount of reading and time required to learn SAS. Included in the workbook are exercises; required and optional cross referenced readings in other SAS publications; and case studies which require one to synthesize all the concepts learned in that module, write a SAS program to analyze a set of data, submit that program for execution and interpret the results. A possible solution to that case study exercise is also discussed on the video tape.

Each course is designed in a modular form and subdivided into segments averaging ten to fifteen minutes in length. Thus a site can customize the information in the course as well as logically interrupt the material between segments. For several of our courses, a computer tape will accompany the course and contain the data, program code, and other illustrations used throughout the video tapes for easy access by the student.

Course Administration

How this course is administered depends on the clientele at each site. If the users are very proficient in the area of data processing, it may be that he or she can view the material and learn SAS on their own without seeking any additional resource help. At the other end of the continuum, there are sites that are still using conventional instruction for communicating SAS material, but using the video training course for review as well as for the establishment of a permanent reference library. The intermediate points of this continuum do result in a compromise in terms of mix of video and conventional instruction.

Conclusion

The Institute is very excited about the potential of video training and are very much committed to it. Never before in history have so many people had to know so much information about SAS and know it so quickly as they do today. Just as the SAS software system was perfected in time to manage the problem of data analysis, video now appears to be a practical answer to many of the problems of communicating information.