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A general guide for creating videotapes to facilitate agricultural instruction

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ABSTRACT

Videotape is an effective and visually powerful approach to facilitate plant and soil science education... either as an adjuvant to the lecture method or by itself. The student will find videotape particularly helpful for self-tutoring; each student learns according to his own individual and optimum pace. However, preparing the informational story to fit the electronic medium is complicated and time-consuming. This paper is designed as a guide for the agricultural teacher who wishes to create an instructional videotape. Complete sequential directions are given. Rationale is provided concerning many of the steps involved. Possible pitfalls and how to avoid them are explained. Hopefully, this guide will demystify the videotape-making process and thereby contribute to a better understanding of this educational teaching tool.

Additional index words: Videotape creation, Audio-visual teaching aid, Instructional technique, Instructional television, Instructional videotape, Programmed instruction.

ADVENTAGES OF VIDEOTAPE

As creative instructors experimented with videotape as a new teaching tool, many useful advantages became apparent. For example, videotape is an excellent method of showing nonverbal behavior, such as physical activity that students are to imitate. After viewing a videotaped agricultural laboratory demonstration, students can be videotaped when repeating the lab activity and then view their performance to judge how closely it came to the ideal.

Videotape allows an instructor to present information in a manner that reflects his teaching style. Since videotapes are based on one's own thoughts and attitudes concerning the information being presented, the finished product is unique and individualized.

From the standpoint of production techniques, videotaping equipment is portable and relatively economical. The portable videotape machine may be taken to an on-site agronomy field demonstration, to record a field trip to agricultural operations not locally available, as well as to document experimental plots just about anywhere. Videotaping is sometimes a safer way of instructing. For example, a videotape showing proper pesticide spray techniques would be safer than actually going out to observe a field being sprayed. Videotape is edited via an electronic process, thereby achieving increased editing capability and flexibility. Playback equipment is portable; and, like a movie, a tape can be played hundreds of times.

Unlike motion pictures, videotape may be recycled (recorded over) if desired.

Another advantage of videotape is its instantaneous usage. Once shot, the videotape is ready to view just as soon as the tape is rewound. This would be particularly useful when videotaping student participation in a plant and soil science laboratory setting or in a field experiment.

Certain special effects including split-screens, dissolves, fades, wipes, and captioning are accomplished more easily on videotape than on film.

Indexing is possible with videotape. By indexing the tape, the instructor has the option of quickly going to any segment of it. Also, the self-tutoring agricultural student would find indexing to be time-saving.

We perceive stimuli from our environment primarily through our sense of sight; we continuously observe the world for informational cues, as well as danger signals. In fact, we live mainly in a visual culture.

This emphasis on visual perceptions to facilitate the acquisition, transfer, and retention of learning can be effectively employed through the videotape medium.

About 1970, videotape began to be used extensively in American school systems; it was received with mixed emotions by teachers. The following quote from the book entitled Video-Visions: A Medium Discovers Itself by Jonathan Price summarizes the educational climate regarding videotape as an instructional tool: "U.S. schools were torn between two ideas of learning, one conservative, one creative. One sees teaching as a way of forcing information from an authority figure onto passive students; the other imagines that students want to discover more about the world and themselves and that they will use any tool offered them to explore." (7).

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CREATING A VIDEOTAPE

Creating a videotape is no small undertaking. In order to assure a greater degree of success in the production of a quality piece of work, it is suggested the following steps be taken.

1. Determine the best motion media to use—videotape or motion pictures. Many articles have been published in an attempt to aid in making the decision (1, 4, 6).

2. Having chosen videotape, consider carefully the message to be presented. In order to maintain audience attention, the maximum length of a videotape segment should be about 12 min. Beyond that time span attention tends to wander as viewers tire from sitting. Therefore, the message must be specific. To assure specificity, outline detailed objectives to be conveyed via the videotape.

3. Determine the knowledge level of the audience. The audience will be agricultural students; however, the students' age, background, year in school, prior courses, and work experiences must all be considered. If audience analysis is not done, the program could be pitched at too high or low a level for the viewers. Money and time would be wasted if a program was used to teach the audience something they already knew or something that was too complicated for them (2).

4. Choose a format for the videotape. Numerous formats can be employed, each having its own advantages and limitations. While a documentary or direct presentation might best serve one situation, a question and answer format might work best in another. Avoid the temptation of utilizing a talking head format. The effectiveness of the message can be lost if the wrong approach is used.

5. Formulate a production plan. This would include all the material (video and audio) that will appear in the finished videotape. The activity must flow in logical sequence if the message is to be understandable. The production plan encapsulates the flow of action as it will eventually appear on the videotape. Introduce new, unfamiliar terms or procedures at the beginning of the tape to enhance subsequent understanding. To plan for the interaction between audio and video components, produce a flow chart of everything to be included on the videotape all together in one place and visible at one glance. This chart will help facilitate continuity, as well as control the pacing and flow of the videotape.

6. Prepare a script. Keep in mind that the script should never be read verbatim. Rather, it should serve as a guide to assist participants in directing their train of thought. For example, when using the question and answer format, the questions contained by the script would allow the respondent an opportunity to mentally prepare an answer prior to the actual taping. The script's content should be accurate and relevant to the message of the videotape. It should embellish the video portion of the tape without overshadowing it and should be written in such a manner that it will not be outdated quickly.

7. Decide upon narration. Narration helps to prepare the audience for the subject matter of the videotape and can be used to embellish highlights. It normally is written as part of the script and then recorded separately on audiotape. Later during editing, the narration is transferred to the appropriate places on the videotape.

8. Shoot the video. For purposes of selection during editing, it is desirable to have a wealth of video material to produce the final tape.

9. Make editing changes. Although the tape may be edited rather extensively as desired, editing should not be considered a snip-slip process. To change sequence of events, add or delete material, superimpose titles, credits or captions, etc., footage of the original must be transferred to a second videotape. This procedure requires a great amount of technical expertise with editing equipment. In addition, each transfer of the video image results in a minor loss of clarity. Editing, however helpful, cannot substitute for poor planning.

The main purpose of proper editing is to build into the finished tape a continuity in the flow of the message.

10. Add title and credits. The title of the videotape should be relatively short, and should fit onto one or two 35 mm slides. Both title and credits are transferred to the videotape during editing. It is common practice to superimpose title and credits over excerpts of video that would be appropriate for lead-in and ending, respectively. Keep in mind that 35 mm slides used in the production of videotape must be horizontal slides in order to fit the 3:4 video image ratio. If artwork is used, it must be in a dimension compatible with this ratio, e.g., $6 \times 8^\prime$, $9 \times 12^\prime$ (1). It is important that the center of each slide show the desired message, since the edges are lost when transferred onto videotape.

11. Decide upon music. Used as a lead-in, music helps to set the stage and prepare an emotional climate in the audience (5). In addition it smooths the transition between title, body of the videotape, and ending credits. Music is recorded on audiotape and added during editing.

CONCLUSION

Videotaping represents an exciting and highly effective new aid to agricultural instruction. By following the procedures just stated, it is quite possible for the plant and soil science teacher to create precisely the videotape necessary to convey the message desired. Videotape applications to agricultural instruction, as well as to all areas of the educational arena, are far-reaching and limited only by one's imagination.

LITERATURE CITED