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Abstract

If Extension is going to use interactive videodisc as a program delivery method in the future, the technology must be explored and systematically evaluated in a variety of learning situations. Studying the adoption of the technology in Extension challenges us to (a) identify those interested in exploring the medium, (b) develop an overall strategy for testing the technology, and (e) organize a method for delivering the evaluative information to decision makers. This article poses a considerable number of questions to be addressed as interactive videodisc is tested for its application in transferring information in Extension.

Assessing Interactive Videodisc in Extension

by S. Kay Rockwell, Thomas G. Tate and James W. King

If Extension is going to use interactive videodisc as a program delivery method in the future, the technology must be explored and systematically evaluated in a variety of learning situations. Studying the adoption of the technology in Extension challenges us to (a) identify those interested in exploring the medium, (b) develop an overall strategy for testing the technology, and (c) organize a method for delivering the evaluative information to decision makers. This article poses a considerable number of questions to be addressed as interactive videodisc is tested for its application in transferring information in Extension.

Interactive videodisc—the merger of computer and video technologies—is a very exciting medium and, potentially, a powerful educational tool. Evidence has begun to emerge from other educational and training institutions which suggests that interactive videodisc is an effective instructional tool. Bunderson et al. (1984), Hannifin and Schaffer (1984), Gibbons et al. (1982), DeBloois (cited in DeBloois et al., 1984), and Vadas (1986) all found greater learning gains for videodisc students when compared with a specific traditional method. Bunderson et al. (1981) and Smith (1985) observed that the educational process with videodisc required less time. Andriessen and Kroon (1980), Gibbons et al. (1982), DeBloois and Woolley (cited in DeBloois et al., 1984) found the self-pacing qualities of videodisc tended to be a popular feature. Gibbons also noted that videodisc users like the realism of sample problems. Bundeson, Olsen, and Baillio (1981) and DeBloois (cited in DeBloois et al., 1984) reported that students had very positive attitudes toward videodisc instruction.

In an initial study on the implementation of interactive videodisc in Extension, agents and farmers used the technology with few problems and reacted positively to both the technology and the program content (Rockwell & King, in press). As Extension continues to explore how the technology can be used, we must examine whether there are economic, strategic, ecologic, and/or social benefits and advantages. If the technology provides one or more of these benefits, is it economically and organizationally feasible to continue implementating it in the delivery system?

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To assess videodisc technology, evaluation designs must address immediate, short-term needs, as well as those which are more complicated and long-term. Unique features of the medium also provide opportunities for new research strategies which may have profound implications for Extension instruction.

Short-term Needs

Short-term needs can be divided into three general assessment categories: (a) the cost of using interactive videodisc as a delivery mode, (b) staff training needs for utilization of the medium, and (c) acceptance, utilization, and educational value of the technology for both staff and clientele.

Cost of using interactive video. How does interactive videodisc compare to other alternative delivery system investments? Assessing the size of the potential audience provides the basis for starting to identify cost/effectiveness. To decide if utilization of the technology is economically feasible, consideration must be given to the cost per-lesson-per-person based on development and production costs of a given lesson. Extension needs to assess how the cost of delivering a lesson on interactive video compares with the cost of delivering comparable information through other methods.

Another cost issue is the initial amount of money needed to purchase the videodisc equipment. How many disc stations would be required to make interactive videodisc economically feasible at current costs and at projected costs for the next five years? One needs to consider how this equipment would be managed and scheduled within an Extension office, or, if utilization of the technology would require additional equipment which is located at sites more convenient for clientele use.

Development costs as well as the cost of adapting the content to a particular location and updating materials are other issues. The costs associated with adapting the program in order to operate on "hardware" from different companies also needs to be addressed. And, how will the programs be updated as videodisc technology moves into more easily accessible forms?

Staff training needs. As with any new technology, staff members need the opportunity to learn about interactive videodisc—its potential, and its application—within the nonformal educational system. Specific staff training is required for those who might be developing and producing videodiscs. The type, amount, and focus of the training required is to be determined, as yet.

Specific staff training also is required for effective use of the interactive videodisc in Extension's delivery system. What type of instruction do agents and specialists need to use programs effectively and to maintain the equipment? What kind of support should be provided within the system for management of the technology? What are effective marketing approaches that will assist agents and specialists to maximize use of the educational materials?

Acceptance, utilization, and educational value. Evaluation questions need to address how both staff and clientele accept and use the technology. In regard to the staff, what are the positive feelings about the interactive videodisc programs? What are the barriers which inhibit maximum use?

What are the pros and cons of using interactive videodisc for individualized or group instruction? How, and in what settings, can a videodisc program be used, most effectively, to reach the target audience? Does the program need to be changed or adapted for various instructional situations?

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For the clientele, the evaluation process needs to address learning, retention, and application of the subject matter to the clientele's situation. How does the knowledge which clientele may gain, retain, and apply from a videodisc program compare with other learning situations? In addition, how do clientele feel about the educational experience? And, what problems do they have using the equipment?

Long-term Needs

If the interactive videodisc is, indeed, a viable delivery mode to use in Extension, long-term evaluation needs must be considered and addressed. Initial development costs for programs can be considerable. Therefore, processes need to be explored which will prioritize program needs and allow for an order in developing programs which are applicable across county and state lines.

Related issues focus on identifying budgetary needs. How much money is needed for program production and implementation and from where does this money come? What kind of cooperative arrangements between states might be cost effective for production or repurposing?

Research on the application of interactive video in adult learning will continue on a long-term basis. Questions relating to instructional design that need to be more fully addressed include:

(a) How much and what kind of interactivity are most appropriate to build into different instructional designs in various programs?
(b) Is this interactivity used as a checking mechanism for branching?
(c) Can (or should) the interactivity serve as an information-gathering device?
(d) Does the interactivity allow for adults to practice applying knowledge to a personal situation? If so, what designs are most appropriate to help adults apply the information to their own situation?
(e) How much and what kind of feedback are most effective for adults?

Research with Videodisc

The unique attributes of interactive videodisc—the realistic audio and visual features from television technology along with the text, graphic and management capabilities from computer technology—make the medium very attractive for research related to adult learning.

The ability to track specific information on a computer disk provides new opportunities. Research designs can be developed which call for a user's response to a given set of materials as the user progresses through a program. The ability to record the path that a user might follow allows for other research designs which utilize the "branching" features of interactive videodisc. Together, these features provide a research tool to study adult learning styles in processing and applying new information

The ability to collect data in an unobtrusive manner by recording or tracking responses raises ethical issues, particularly if the participant is being asked to enter personal information. At what point does this process violate individual rights for confidentiality?

As adult educators become more aware of the unique features of videodisc technology and use it for adult programming, more research questions will emerge. At the same time, new research strategies will have to be identified to deal with the questions.

Summary

Studying the adoption of the videodisc technology in Extension challenges those involved to: (a) identify those interested in exploring the medium, (b) develop an overall strategy for testing the technology, and (c) organize a method for delivering the evaluative information to decision makers. There is a number of questions to be addressed as interactive video is tested for its application in transferring information in Extension. And, more questions will arise as the medium is tested in various settings and situations.

To meet some of the needs in Extension, IVEN (Interactive Video Extension Network) was created in CES (Cooperative Extension Service, U.S. Dept. of Agriculture) in 1985 (Tate, 1986). Over 100 educators in 30 states, who recognize the educational potential of the marriage between video and computers, founded the network. IVEN members acquire and test new interactive video systems. Through the interest of individuals in IVEN, agricultural delivery systems are now being tested in 22 states. Plans by IVEN call for testing a variety of new programs in different settings and with diverse audiences.

References

Andriessen, J. J., & Kroon, D. J. (1980). Individualized learning by videodisc. *Educational Technology,* March, 21-25.

Bunderson, C. V., Baillio, B., & Olsen, J. B. (1984). Instructional effectiveness of an intelligent videodisc in biology. *Machine Mediated Learning, 1*(2), 1975-215.

Bunderson, C. V., Olsen, J. B., & Baillio, B. (1981, January). *Proof-of-concept demonstration and comparative evaluation of a prototype intelligent videodisc system.* Learning Design Laboratories, WICAT, Inc., Orem, Utah: Author.

DeBloois, M., Jaki, K. C., & Hall, A. F. (1984) Effectiveness of interactive videodisc training: A comprehensive review. *The Videodisc Monitor.* Falls Church, VA: Future Systems Incorporated.

Gibbons, A. S., Olsen, J. B., & Cavagnol, R. M. (1982, May) *Hawk Training System: Evaluation Report* WICAT Systems, Inc. Orem, Utah: Author.

Hannafin, M. J., & Schaffer, L. (1984, April). *The effects of systematically varied interactivity on learning from interactive video.* Paper presented at the meeting of the American Educational Research Association, New Orleans, LA.

Rockwell, S. K., & King, J. W. (in press). Reactions to an initial attempt at implementing interactive videodisc in Extension. *ACE Quarterly.*

Smith, R. C. (1985, September). *Full-scale pilot testing of Florida's videodisc training project.* Pensacola, FL: University of West Florida, Office for Interactive Technology and Training.

Tate, T. G. (1986, October). *The role of interactive video in agricultural education* (IVEN working paper #3). Washington, D.C.: U.S. Department of Agriculture.

Vadas, J. E. (1986, August) *Interactive videodisc for management training in a classroom environment.* Paper presented at the Conference of Interactive Videodisc in Education and Training, Washington, D.C.

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