

Options for Interactive Video

By Richard P. Lookatch

What's the best instructional setting for your interactive-video program? Researchers compare the use of IVD with individual learners, groups of trainees, and pairs of trainees. Find out how to choose an instructional setting that fits your budget, time frame, and training content.

The growing popularity of interactive-video-based instruction in the eighties will have a profound impact on the way we train in the 21st century. Research throughout this decade has compared new technology to traditional methods of instruction. The results consistently favor interactive video. They show

- gains in achievement (of skills or concept knowledge) as indicated on written and performance-based instruments;
- gains in long-term retention of learned skills and concepts;
- reduction in time required for the same or higher achievement levels;
- learners' enthusiastic acceptance of and preference for IVD over traditional methods.

Interactive-video research of the coming decade is likely to focus on design and implementation methods. The technology itself has not matured. Those in the industry are still battling over archaic questions regarding hardware standards; the industry

continues to be dominated by hardware rather than design. But many trainers have found success with highly sophisticated, level-two disc programs with minimal hardware requirements, such as a player with built-in CPU. The cost for such programs is significantly lower than that of their more complex, hardware-

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dependent, level-three counterparts.

Besides videodisc level or hardware configuration, a basic consideration in videodisc training is the instructional setting, or whether training will take place with individual learners, with groups of learners, or with pairs. In the last 10 years, researchers studying various settings have observed gains with interactive video in every setting.

Few of those studies compared the settings using the same courseware. But that is a primary consideration for

the trainer faced with implementing interactive-video programs.

Going it alone

The predominant instructional setting for interactive laserdisc has been individual, or one-on-one, instruction. The individual learning environment consists of a small (12- or 13-inch) monitor, a laserdisc player, a remote control device or a keyboard and microcomputer, and a small work area for written materials.

The two major advantages of individual settings:

- In one-on-one interactive instruction, students pace their learning to their training needs. For learners with diverse backgrounds and knowledge, self-pacing dramatically improves the quality of training. Self-pacing offers more advantages to new employees than to those who have been employed for some time.

- Individualized learning offers the greatest flexibility in scheduling and the physical environment. For example, a mid-sized branch of a bank experiences a slower-than-average Tuesday; with no planning or scheduling, the head teller simply assigns a teller to the learning station for training. The learning station is nothing more than a desk with a laserdisc player, a small monitor,

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and a pair of headphones. When activity picks up, the teller is simply called back to his or her window.

The gang's all here

The group instructional setting is rapidly gaining acceptance as a practical arrangement for interactive-video instruction. Typically, the learning environment includes a large monitor (at least 19 inches) and a laserdisc player (both on an equipment cart), and an external computer, if required. When a remote-control device is part of the hardware, it is often placed on a conference table or in another central location so that trainees can take turns using it.

The group instructional setting has several advantages:

- The setting provides an opportunity to tailor generic courseware to the company's needs. The group facilitator can add to or modify the video segment by creating discussions or skipping segments.

- Group presentation provides the dynamics of group interaction, debate, and consensus at points of interaction.

- Group presentation is simple to schedule and in many cases is more

cost-effective than individual learning settings.

Two's company

A cooperative learning setting is similar to an individual learning setting with respect to its physical characteristics. The primary difference is that it requires seating for two learners rather than one. Cooperative learning has

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many of the same benefits as individual learning, and also has several advantages over it:

- Cooperative learning cuts collective time required for training in half. Training two employees together at a single work station requires half the time it would take to train them individually.

- It facilitates learning through discussion. A student's ability to readily

discuss course-related issues with another person contributes to more thorough comprehension. Many students in cooperative learning settings say that the discussions themselves are significant learning opportunities.

- It builds rapport among trainees. Cooperative learning leads to cooperative working. Having an enriching experience with someone can serve as a foundation for a lasting relationship. It is often worthwhile to pair trainees across branches, departments, or locations. That encourages networking between locations or departments and serves as a unique opportunity for an organization-wide idea exchange.

Cooperative learning does involve certain sacrifices. Scheduling becomes less flexible than with individual learning, as trainees must depend on each other's schedules. If one is unavailable, training must be cancelled to maintain the partners' experience of continuity. Self-pacing may also be sacrificed, but that can be minimized by pairing trainees with similar experience and abilities.

Finally, while conflict between partners occurs less often in highly structured learning, it still may arise. Train-

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ing coordinators must react quickly to resolve such matters and preserve the positive nature of the learning experience. Usually, they reassign the partners.

Research on instructional settings

Historically, research comparing cooperative and individual learning has shown that cooperative learning is superior in promoting achievement and productivity. Unfortunately, most of those studies do not involve interactive video.

(Research projects include those by R. Husband in the *Journal of Social Psychology*, 1940; D. Johnson, G. Maruyama, R. Johnson, and D. Nelson in the *Psychological Bulletin*, 1981; D. Johnson, R. Johnson, and L. Scott in the *Journal of Social Psychology*, 1978; W. Scott and D. Cherrington in the *Journal of Personality and Social Psychology*, 1974; and D. Taylor, P. Berry, and C. Block in *Administrative Science Quarterly*, 1983.)

In a 1986 study that appeared in the *American Research Journal*, R. Johnson, D. Johnson, and M. Stanne compared learning conditions with

computer-assisted instruction, and found similar results. Students assigned to cooperative settings had significantly higher scores on all dependent variables. In addition, S. Sharan's 1980 study in the *Review of Educational Research* reported that cooperative learning helps improve ethnic relations.

In the sole comparative study of programs that used interactive video,


The advantage of cooperative instruction is that partners share goals

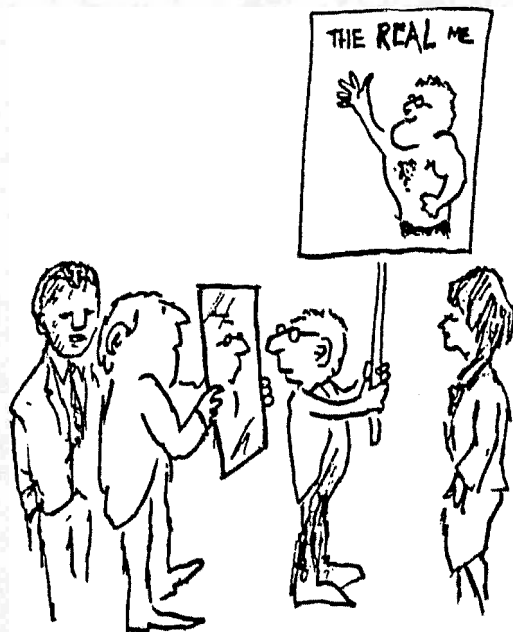
the results support earlier findings: cooperative conditions yield higher achievement than group and individual instruction (J. Vadas, *Proceedings of the Sixth Annual Conference on Interactive Videodisc in Education and Training*). The comparison of group instruction with cooperative and individual learning is also unique to Vadas's study. Vadas also noted that, while

scores from group settings were below those of cooperative learning, the individual settings yielded the lowest scores of all.

The comparative research showed that the advantage of cooperative instruction is that partners share goals. Also, the frequent, open, and task-oriented communications observed in cooperative learning settings are advantageous over individual settings, where communication seldom occurs. The same advantage may exist over group settings, especially larger groups, which tend to hinder consistent individual participation.

The recommendation

The best approach to choosing individual, cooperative, or group instruction is to arrange trials under each condition. The gains made by cooperative learners may not be enough to justify the cost of multiple learning stations and scheduling conflicts in some workplaces. A training coordinator would be well advised to test different instructional settings before implementing an interactive-videodisc training program, in order to ensure the best fit for the organization. 



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