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# Indoctrination: Using Interactive Video to Teach Attitudes and Knowledge in General Employee Training

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INDOCTRINATION: USING INTERACTIVE VIDEO TO TEACH  
ATTITUDES AND KNOWLEDGE IN GENERAL EMPLOYEE TRAINING

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ABSTRACT

The Westinghouse Hanford Company has developed a prototype Interactive Video course, Hanford General Employee Training. Interactive video combines sound, motion, and still photography from a videodisc with the graphics, text, and instructional capability of computer-based instruction. The course includes indoctrination on over 40 topics identified by the Institute of Nuclear Power Operations, the United States Department of Energy, and the Westinghouse Hanford Company that are to be included in the indoctrination of new and requalifying employees. In addition, the course requires trainees to make positive choices when confronted with real life scenarios showing violations of safety, security, and quality standards. This courseware is different from most general employee training courses because it puts the trainee in a role-playing mode and requires the trainee to recognize and respond "in the Westinghouse Hanford way."

Initial data project a reduction of 40 - 60% in training time for Hanford General Employee Training as compared to stand-up instruction.

## INTRODUCTION

Instruction at nuclear facilities has traditionally used a variety of formats and designs to accomplish prescribed purposes. These purposes have included increased knowledge and improved practices. It has been recognized that both knowledge and skill improvement can be impacted by trainee attitude. How to impact attitude through the training process has, however, been elusive. Outside industrial training circles, the use of role-playing has been a recognized technique for affecting behavior and attitude, but applying role-playing to normal plant tasks has not been successfully accomplished to any extent.

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## INDOCTRINATION

The terms "indoctrination" and "orientation" are often used synonymously, but actually have quite different connotations. Orientation generally refers to coursework designed to give a broad-brush view of a process or practice, rather than detailed, practical, how-to instruction. Those how-to's are usually presented in formal classroom or on-the-job training, or in some form of self-study. Both are important in providing trainees with the knowledge and skills necessary to perform their jobs.

Indoctrination, however, means literally to indoctrinate, to create a set of beliefs, ethics, or outlooks. Such attitudes or beliefs can affect greatly the behavior of workers toward quality, safety, and security, and in turn toward the way in which they perform their work. Workers may be technically skilled but consider attention to the safety, security, or quality aspects of their jobs a nuisance. Indoctrination should focus on improving attitudes by achieving measurable goals in the Affective Domain of learning.

Westinghouse Hanford was faced with a need to indoctrinate 10,000 employees on the "Westinghouse Hanford way to do business" following consolidation of three separate contractor functions into one function in 1988. Three different ways of conducting business, three different views of how to emphasize and practice safety, security, and quality, and three different management organizations were to be replaced by a Total Quality approach, with a single organization and set of standards.

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#### GENERAL EMPLOYEE TRAINING

Traditionally, General Employee Training (GET) courses have been approached as orientations. Various topics, ranging from attendance policies to radiation safety to emergency procedures, have been presented in a broad view format, with numerous details to support the broad view.

Writing Hanford General Employee Training (HGET) objectives has been difficult because of the necessary breadth and depth of content. In addition, the use of examinations has been difficult. The questions tend to emphasize specific detail rather than broad concept, and much content is simply not tested. Trainers have often felt torn between the demand to teach specific details and the reality of time and trainee tolerance to detailed questions.

The designers of the HGET course decided to emphasize Affective Domain terminal objectives that would connect the detailed enabling objectives. The eight objectives chosen stress making choices to support Westinghouse Hanford policies in the three major content areas: quality, safety, and security. Given typical work situations, employees are progressively required during training to recognize good and bad practices, to choose the good practices over the bad, and to choose to mitigate violation of good practices.

## INTERACTIVE VIDEO

Interactive video (IV) is a next generation extension of computer-based training (CBT). Using the computer and color monitor to control the program and produce text and graphics, IV also adds a laser videodisc player to provide sound, still photographs, and video sequences.

Westinghouse Hanford has produced CBT courses for Radiation Worker Training and Hazardous Materials Shipping Training. Both are used throughout the Department of Energy contractor system. HGET expands on our use of technological approaches to appropriate courses. The course utilizes IBM PS/2 Model 70 computers and IBM InfoWindows displays. The InfoWindows has pressure-sensitive touch screens and graphics overlay capability, plus a synthesized voice chip.

The use of IV is a key to allowing training on Affective Domain objectives. It allows the individual trainees to be placed in a role-playing mode. Trainees can view a real life situation from the video, respond to it, then receive direct feedback on the consequences of their choices. Trainees who would be reluctant to respond to such a condition in a group can respond quite naturally to the same situation in an IV mode.

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## HANFORD GENERAL EMPLOYEE TRAINING

Hanford General Employee Training has as its base a series of 40 lessons based on topics identified in INPO, DOE, and Westinghouse Hanford documents. These topics range from Total Quality to Electrical Safety, from Computer Security to Attendance Policies. A tour of the entire Hanford site as well as security and safety requirements of specific facilities will be included.

The lessons can be either performance-based or mandatory orientation. The performance-based lessons allow the trainee to test out of the lesson. Mandatory orientation requires the new

employee to receive the orientation, but it can be changed to performance-based for the experienced employee. Our experience with previous courses predicts that experienced employees can reduce training time by up to 75% through the use of the performance-based mode.

The lessons are encountered by the trainee during three conducted tours: a plant tour, an office tour, and an outside tour. During each tour, conducted by actual safety trainers, trainees encounter situations where policies are explained, where they are required to recognize violations of safety, security, or quality practices, or where they must take corrective action of a violation of good practices. Their responses are used to give immediate feedback on the correctness of a choice and determine whether entry into a lesson is necessary.

Once trainees are directed to a lesson, they are tested to identify exactly which section of the lesson they need. Within the lesson, trainees encounter worker testimonials, expert testimony, and actual case studies, in addition to text, to impress on them the reality of the work conditions and the need to observe good practices. Videos of appropriate procedures are included. For example, in the electrical safety lesson, a trainee encounters a co-worker being electrocuted. Trainees must choose appropriate action from a menu. If a wrong choice is made, they are shown the consequences and required to choose again. The correct choice emphasizes the proper way to remove a worker from the energized equipment by first turning off the power to the equipment.

Attitudes, knowledge, and skill are impacted by several elements in the design. A foundation of information is presented. Real situations are presented and the student must respond correctly several times to complete a given portion of the training. An overall pattern of safer, more secure, quality behavior is demonstrated to and required of the trainee. These goals all occur within the Observation and Response levels of the Affective Domain.



A final key element in implementing the course is that the training will be conducted with a live trainer present. Our experience supports the belief that CBT and IV do not eliminate the need for instructors. The cost savings occur on improvement in retention of learning (up to 30% increase) and reduction in training time (40 - 60%). The presence of a live trainer supports the student's acquisition of the knowledge, attitude, and skills the training is designed to impart.

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## STATUS

Westinghouse Hanford has developed the HGET prototype, consisting of a registration module, an introduction to the course, orientation to the use of a touch screen mode, the office tour, and several lessons. The completed course is planned for late summer with training of employees to begin in early fall.

The basic assumption of the course is that worker attitude is directly related to performance. Measures to determine the impact of HGET are being identified. These measures include reduction in recordable injuries, reduction in number of certain audit findings, and maintenance of currency in required employee training. Future plans include connecting the courseware to the training records data base to correlate the requalification of appropriate parts of HGET with the training identified for near-term requalification in the training records.

Westinghouse Hanford has stressed impact of trainee work practices in all CBT courses. The same emphasis is present in HGET. Statistical measures are being designed to measure its impact on workplace practices.