Teaching Corporate Culture Using Interactive Video Training

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TEACHING CORPORATE CULTURE USING INTERACTIVE VIDEO TRAINING

P. R. Gardner - Westinghouse Hanford Company, Richland, Washington

The Westinghouse Hanford Company (Westinghouse Hanford) Total Quality Program includes development of an Interactive Video (IV) course, Hanford General Employee Training (HGET). The commitment to Total Quality is developed in both new and requalifying employees by requiring them to make positive choices when confronted with real life scenarios showing violations of safety, security, and quality standards. This courseware is different from most HGET courses because it puts the trainee in a role-playing mode and requires the trainee to recognize and respond "in the Westinghouse Hanford way."

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BACKGROUND

In June of 1987 three separate companies operating at the Hanford Site were consolidated into one Department of Energy (DOE) contractor, Westinghouse Hanford Company (Westinghouse Hanford). Approximately ten thousand employees are learning new policies, procedures, and a new company philosophy. Simultaneously, competition for energy-related projects has become more intense. Responding to both marketplace and resource demands, Westinghouse Hanford instituted a Total Quality approach to job performance, an approach in which training occupies a central role. Among other things, Total Quality requires that employees know certain policies and procedures and, more importantly, that they consciously act to meet internal and external customer expectations. Hanford General Employee Training (HGET) is being constructed both to supply the basic Safety, Security, and Quality information needed by typical employees to enable performance in a Total Quality manner and, far more importantly, to influence attitudes to promote the desired performance in each of these areas.

PROGRAM GOALS

From a middle level-of-needs assessment and planning (Kaufman, 1987), several "products" for HGET are being derived, including reductions in recordable injuries, reductions in numbers of certain audit findings, maintaining currency in required employee training, etc. Measures and targets are established for each of these goals. For example, one criterion is to reduce the number of Lost Workdays by a predefined percentage. Another is to eliminate audit findings identifying deficiencies in employees' knowledge of Occupational Safety and Health Act (OSHA) required Hazardous Material Communication topics. In this way HGET is intended to influence in a demonstrably positive manner Westinghouse Hanford outputs and outcomes, enhancing customer (DOE) satisfaction with our performance.

DESCRIPTION

Hanford General Employee Training opens with an on-line registration. Enough information is gleaned to determine what training is required during the current year. (Eventually, the delivery stations will connect with the Westinghouse Hanford central training records system to retrieve the individual student's currently required training. At run-time the course will automatically select which tours, lessons, facility orientations, etc., are to be delivered to that particular student.) Following registration the student is given a simulated Safety, Security, and Quality checkout of an office building, a plant facility, or a field area. The student will be asked to identify, by touching the screen, preset safety or security problems from

scenarios. For some of the problems students will be asked follow-up questions on corrective actions. At certain points, quality issues will be addressed through question and answer sessions. "Emergencies" may arise demanding actions not typically practiced on a day-to-day basis. Performance on the checkout (were the problems found and were the proper corrective actions identified?) is tracked and used to identify remedial lessons from those required.

The remedial lessons also use video sequences where appropriate, e.g., during the electrical rescue segment. For certain lessons an "Expert Interview" section is included. After all required general lessons are completed, the students next take orientation lessons on specific facilities where they are permitted to enter. The course concludes with testimonials from several employees giving examples of how company policies are implemented. Though no examination performance standard has been set for the course, a series of questions will be asked of students whose performance was weak at the conclusion of the training to determine if instructor intervention is advisable.

Cognitive Domain

Historically, Westinghouse Hanford courseware has been application based. From an analysis of job tasks, computer simulations were constructed for both testing and training purposes. Tutorials were developed, but always with the requirement that a "Practical Exercise" be included to aid in motivation and to facilitate transfer to the job. Generally, well-documented research practices are followed: sequences begin with real-world experiences to help novice learners (Jonassen and Hannum, 1987); users are not offered too much control (Gayeski and Williams, 1987), but access to lesson overviews is available (Jonassen and Hannum, 1987); the default path gets new users to the 'meat' of the instruction right away (Frost and Kearsley, 1985), etc.

Affective Domain

The time appears to be right for explicitly addressing the affective domain. Frost and Kearsley (1985) recognized that videodisk "provides a powerful medium for achieving affective outcomes." Harless (1985) reported his work at the National Library of Medicine, in which he attempted to involve the learner emotionally through the showing of suffering in what he termed "interactive drama." Bailey and Klinsing (1988) seek to modify secondary students' work ethics and attitudes with "vicarious experiences of actors in the recreated work scenarios." Safety, security, and quality practices so often appear to be common sense, a fact attested to by the high frequency of high scores on our purely cognitive measurements over such topics, that the opportunity for significant gains lies only in the affective domain. Actually, Westinghouse Hanford has made significant strides in performance improvement through other means; our belief is that further improvements in these areas will require increased employee attention to detail and procedures, a willingness to think before acting, to learn, to take the initiative, and so on.

In HGET, the following techniques are employed in this attempt to direct workers' attitudes:

1. To provide "personality" (Frost and Kearsley, 1985; Gayeski and Williams, 1987) we use a Safety Training Instructor as the student's guide through the course. We do not hesitate to use a talking head (Gayeski and Williams, 1987). This "guide" is very sympathetic to learning difficulties. For students with low reading ability, the course manager may turn on the guide's voice. The guide will then read the lesson screens as they appear.

2. By having the student identify problems and corrective actions on the tours and in the simulated emergencies, we are addressing the attending and responding categories in the affective domain taxonomy.

3. Tutorials are designed to fill in any knowledge gaps and to provide opportunities to question "experts." This is similar to a method used by Hunter (1988), who also supplies an excellent example of demonstrating the effectiveness of IV training through measured increases in company outputs. Our objective here is to propose to the student that conscious efforts in safety, security, and quality are valuable because they are valued by experts.

4. Testimonials from a wide range of employees on performing "in the Westinghouse Hanford way" are presented near the end of the course to (1) Provide practical, working examples of how the policies can be implemented, and (2) Reinforce the notion that, in fact, the student will be in good company by behaving in the desired manner.

5. For our "talent" we use regular employees. Also, during our needs analysis (underway as this is being written) we are intentionally surveying a large number of employees. In effect, we are publicizing this project at the grass-roots level and are using the development process itself to help bring the company together. Ideally, we will have a significant fraction of the population "sold" before the course is ever fully implemented.

The basic assumptions are that (1) Westinghouse Hanford personnel performance in the areas of Quality, Safety, and Security can be correlated with work attitudes and (2) our videodisk training can measurably improve work attitudes. In point of fact we have no intentions of trying to measure work attitudes except for how they affect the company performance measures we have defined. We are reasonably confident that assumption (1) is valid, and we anticipate being successful with assumption (2). If not, we will still have the opportunity to incorporate an attitude measurement survey in subsequent editions of the course to pinpoint the cause of failure and suggest a remedy.

CONCLUSION

Experiences with the prototype are now being evaluated as the full course design is being finalized. The design of HGET follows those principles successfully used by Gould, et al. (1987) in construction of the 1984 Olympic message system: (1) Early focus on users and task, (2) Empirical measurement, and (3) Iterative design. We focus on user work practices from the very beginning, we are constructing statistical measures for our intended effects, and we constructed a prototype before finalizing course content and design.

REFERENCES

Bailey, H.J. and Klinsing, S., 1988. "An Interactive Videodisc Instructional Approach to Teaching Work Attitudes", Proceedings of the Sixth Annual Conference on Interactive Instruction Delivery, February 24-26, Orlando, FL. Society for Applied Learning Technology.

Hunter, G.M., 1988. "Program Evaluation for Interactive Videodisc Technical Training", Proceedings of the Sixth Annual Conference on Interactive Instruction Delivery, February 24-26, Orlando, FL. Society for Applied Learning Technology.

Frost, J. and Kearsley, G., 1985. "Designing Effective Videodisc," Proceedings of the Interactive Videodisc West Conference, May 15-17, Society for Applied Learning Technology.

Gayeski, D. M. and D.V. Williams, 1987. "DESIGNING INSTRUCTION ... OR AN INSTRUCTOR?: DEVELOPING INTELLIGENT INTERACTIVE MEDIA," handout, Learning Technologies Institute Conference, Washington, D.C., October 28-30.

Harless, William G., 1985. "A New Technology - A New Education," paper presented at the Twenty-sixth International Conference of the Association for the Development of Computer-Based Instructional Systems, March 25-28, Philadelphia, PA.

Jonassen, D. H. and W. H. Hannum, 1987. "Research-Based Principles for Designing Computer Software," Educational Technology, December.

Gould, J.D., Boies, S.J., Levy, S., Richards, J.T., Schoonard, J. "The 1984 Olympic Message System: A Test of Behavioral Principles of System Design", Communications of the ACM, September, 1987.

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