

# **MULTIMEDIA AS A MEANS TO TRAIN IN THE WORKPLACE – VIABLE ALTERNATIVE OR LATEST FAD?**

**G.C. SINCLAIR, Georgia Sinclair Consulting Pty Ltd  
M. WAKELAM, Monash University**

## **1. ABSTRACT**

Faced with an ever-increasing training load, the Monash University's Occupational Health, Safety and Environment (OHSE) Branch has recently begun the process of transferring many of its existing training courses into multimedia format. This is designed to reduce the resources required by the OHSE Branch to training commitments whilst providing a more flexible delivery timetable for trainees.

This paper will discuss the means of multimedia development from a health and safety perspective as well as the resources required. Multimedia format training is contrasted with traditional methods of providing health and safety training.

## **2. INTRODUCTION**

Occupational health and safety is an area of increasing interest to employers, employees and the general community. The right of individual workers to a workplace that is safe and without risks to health, the cost of workers compensation and in more recent times, the drafting of industrial manslaughter legislation, have emphasised the need to find effective means to prevent injury and ill-health in the workplace. Training has been recognised as a means of preventing workplace illness and injury and the requirement for an employer to train employees about workplace hazards is now part of health and safety legislation in all states of Australia.

To date, the majority of health and safety training has been delivered to employees face to face in a classroom situation. There are two main disadvantages for employers in using face to face training in a classroom format (Rekus, 1999; Simpson, 2000):

- The requirement to employ in house training staff on an on-going basis, or to pay to obtain the services of such people from outside their organisation, and
- The need for employees to be away from their work areas in a way that their absence may cause considerable disruption to production activities.

Multimedia format training for employees is gaining popularity as an alternative to face to face training in a classroom format. Multimedia format training can involve the use of a narrative script, appropriate graphics and supporting screen text to present training to an employee from a computer screen. The training material can be packaged on a CD-ROM which may be then accessed by the employee from a suitable computer. There are several advantages to multimedia format training:

- The on-going cost associated with training is low, and
- The need to employees to be away from their work area at inconvenient times is decreased because employees may receive the training individually, and at a variety of times and locations.

However, there are some disadvantages to multimedia format training (Fasulo, *etal.*,1995; Lippert, *etal.*, 2000):

- The high cost of initial course development, and
- The resistance that some people have to using a computer.

### **3. DESIGNING EFFECTIVE MULTIMEDIA FORMAT TRAINING**

#### **3.1 Requirements for Effective Learning**

Beyond the need to comply with legislative requirements, the objective of any occupational health and safety training is to develop the trainee's skills such that they understand the nature of risks in their workplace and are able to judge when and how best to control those risks. In order to be truly successful training usually needs to achieve a level of permanent behavioral change in the trainee (Groover and Hodson, 1998).

If you ask successful trainers how to deliver a training course, the predominant responses are:

- Material must be interesting and memorable (Nash, 2000; Sutcliffe, 2000).
- Relevant examples must be used (Nash, 2000).
- The training session must be interactive (Nash, 2000).
- The delivery must incorporate a variety of visual and auditory stimuli in order to assist participants who learn in different ways (Simpson, 2000).

#### **3.2 Learning Features of Multimedia Format Training**

Multimedia format training is ideally suited to presenting information to trainees in a variety of formats that can provide all of the above features. In addition, if the multimedia presentation is of high quality, then it can be used for multiple training sessions. Multimedia format training can provide the following types of learning stimuli:

- Written screen text – which may be printed.
- Sound – such as narration to accompany graphics and screen text, or accompanying music and sound effects.
- Graphics – still graphics such as photographs and cartoons and video.

[Note: appropriate computer hardware and software need to be available]

The multimedia format training can be focused either at delivering information, in the style of open learning television broadcasts or it can be structured to train interactively. For example the passive information elements can be interlaced with interactive elements. For example the trainee can be provided with exercises or questions which can be auto-corrected and feedback can be provided immediately. The feedback may take many forms, in the case of an incorrect answer the feedback could range from providing the trainee with the correct answer through to automatically returning the trainee to an earlier part of the presentation and informing them that they need to revise the material before they can progress further through the lesson.

#### **3.3 The Cost of Multimedia Format Training**

Monash University has now fully developed two multimedia format training courses; an ionising radiation safety training package for research staff (approximately 4 to 5 hours training duration) and a contractor induction package (approximately 1 hour duration). Development of other courses has commenced for biosafety training for research staff, a general staff induction package and a chemical safety training package. The script and storyboards have been developed for these projects, but resource collection and authoring is only in the preliminary phase.

Costs of development have been estimated to be typically in the range of \$3000 to \$5000 per minute of active training. Although this should be considered to be a minimum estimate if you are planning for your training to be a real alternative to face-to-face delivery by a good trainer. The costs of developing the ionising radiation safety training package and the contractor induction package can be categorised as shown in Table 1.

<b>Table I: Categories of Cost in Preparing Multimedia Format Training</b>	
<b>Item</b>	<b>Proportion of Cost (%)</b>
Initiation Phase: Development of instructional objectives, script writing and broad storyboarding of screen text, graphics and sound components	10%
Project Management: [ Includes ; scheduling of and supervision of photo and video images, organisation of resources and quality checking product drafts]	15%
Production Phase: [Includes collection and processing of all graphics, collection and processing of sound resources authoring of the training and production of the final packaged training onto CD-ROM	75%

The ionising radiation safety and contractor induction packages are the first health and safety training courses to be produced in multimedia format by Monash University .

The high cost of multimedia development, especially if the whole development process is outsourced to external commercial multimedia companies, together with the large number of multimedia format courses that need to be produced , Monash University is currently reviewing the aspects of the multimedia production process that may be able to be cost-effectively produced using in-house resources for future projects.

### **3.4 The Success of Multimedia Format Training**

At the time of writing this paper, Monash had not commenced a full schedule of training with either the ionising radiation safety or the contractor induction packages. However, the reception by potential trainees who have reviewed drafts of both courses, has been excellent. They are particularly keen on the idea of being able to undertake training at times and locations that are suitable to their individual work schedules.

More comment will be made in the presentation on the success of multimedia format training at Monash University.

## **4. CONCLUSIONS**

Multimedia format training is emerging as a viable alternative to classroom format teaching in achieving successful learning outcomes. There are still some concerns about the lack of use of this new media if there is reasonable computer literacy among trainees. The reduction in on-going training costs and the flexibility it provides to busy employees, more than offset the high initial set-up costs of multimedia training to an extent which is unparalleled by other training solutions .

## 5. REFERENCES

Fasulo, T.R. and P.G. Koehler, 1995, *Developing Computer-Verified Training Tutorials for Urban Pest Control Training*, Journal of Extension, 33(2), (on-line) Available: <http://joe.org/joe/1995april/tt1.html>.

Groover, D. and S. Hodson, 1998, *Behavior Based Training for Safety and Health*, Penton Media, (on-line) Available: <http://www.occupationalhazards.com/default.asp?section=AArchive>.

Lane, C (ed) DLRN's Technology Resource Guide – Chapter 5: Learning Styles; Distance Learning Resource Network (on-line) Available: <http://www.dlrn.org/library/dl/guide.html>.

Lippert, R.M., O. Plank and R. Radhakrishna, 2000, *Beyond Perception: A Pretest and Posttest Evaluation of A Regional Internal extension Inservice Training*, Journal of Extension, 38(2), (on-line) Available: <http://joe.org/joe/2000april/a2.html>.

Nash, J., 2000, *Safety Education: The Method is the Message*, Penton Media (on-line) Available: <http://www.occupationalhazards.com/default.asp?section=AArchive>.

Rekus, J.F., 1999, *Is Your Safety Training Program Effective?*, Penton Media (on-line) Available: <http://www.occupationalhazards.com/default.asp?section=AArchive>.

Simpson, R., 2000, *Developing Training Programs – Remember These Tips From The Trenches*, Business News Publishing Company (ISHN), (on-line) Available: <http://www.ishn.com/>.

Sutcliffe, V., 2000, *Setting Up A Plan for Employee Training*, Penton Media (on-line) Available: <http://www.occupationalhazards.com/default.asp?section=AArchive>.