

# Investing in Multimedia Agents for E-Learning Solutions

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## INTRODUCTION

*“The waves of technology are changing the workplace and the worker of today as we approach the 21<sup>st</sup> century. To be prepared, people need to be proactive, to ride the next wave, to adapt to change, learning new things constantly.”* Lowell Gray, CEO of Shorennet, an Internet service provider in Lynn, MA.

Are multimedia agents effective tool for e-learning solutions to assistant performance improvement specialist in the organization development challenges? This question was investigated through the evaluation of existing research materials on e-learning and multimedia agents. Research has shown that multimedia and e-learning solutions have a positive effect on job training and job performance. Is it an effective instructional tool both in cost and for performance interventions? This report begins with a background discussion into the definition and appropriate training issues dealing with e-learning and multimedia agents tools including adult learning, active training methods that are associated with the interactive multimedia agents, as well as the value e-learning and multimedia has on the organization. In addition, the study continues to discuss how multimedia and e-learning based instruction for on the job training meets the benefits for business result and improvement of job performance that trainers seek in their instructional outcome.

## BACKGROUND

As we enter the twenty-first century, the use of computer-delivered instruction is revolutionizing the way people obtain training in order to support learning wherever it occurs in the organization in meetings, on computer screens, through mentors, or during actual work team projects (Silberman, 1998). As in the instructional

design process, e-learning solution and other forms of performance improvement interventions should have three phases: a front end that includes the assessment of the training need and the establishment of training objectives, a mid section that involves the detailed planning and delivery of the training program, and a back end which focuses on the events that “encourages back-on-the-job application, ongoing performance support, and the evaluation of training outcomes” (Silberman, 1998, p. xii). During the e-learning training program, adult learners must be actively engaged for optimal results to be transferred to actual workplace practices. This can occur by promoting an active training approach that involves a commitment to learning by doing and reinforcing the concepts in the e-learning application. The concepts of active learning in an online environment can be made through interactive multimedia agents. Interactive multimedia agents and active training in the traditional sense do not seem to match at first reasoning. However, when one looks at the nature of adult learning and online training (e-learning solutions), it is not hard to understand. According to the modified and expanded wisdom of Confucius into the active learning credo:

*When I hear, I forget.*

*When I hear and see, I remember a little.*

*When I hear, see, and ask questions or discuss with someone else, I begin to understand.*

*When I hear, see, discuss, and do, I acquire knowledge and skill.*

*When I teach to another, I master.*

(Silberman, 1998, p. 2)

It seems these statements have raised the interest of researchers, trainers, and instructional designers alike. And as a result, several questions have been raised.

- What makes multimedia agents and e-learning popular among active adult learning training?
- What characteristics do interactive multimedia agents and e-learning instruction have?
- Can multimedia agents and e-learning be an effective medium in performance improvement and adult training?

There is a vast amount of research that supports the validity of interactive multimedia agents and e-learning for job training needs. With such a wide variety of information and research, we must begin by identifying the definitions and value of both “active training” and the term “interactive multimedia agents.”

## ACTIVE ADULT TRAINING AND ITS VALUE

According to study performed by Malcolm Knowles in the adult learning sector, active learning occurs when the participants do most of the work. The key to effective training is how the learning activities are designed in order to allow the participants actively acquire knowledge and skill rather than to passively receive them. Because “learning is not an automatic consequence of pouring information into another person’s head, it requires the learner’s own mental involvement and doing” (Silberman, 1998, pp. I-2). According to Merrill (2001), studies have shown that in order to maximize learning, training must include the following characteristics of the instructional design philosophy:

- Real-world relevance
- Learning by doing
- Best-of-class content
- Learning through collaboration
- Supportive learning environment
- Self-directed

The term multimedia describes “the integration of multiple information presentation modalities including text, audio, pictures, graphics, motion video, and animation through the use of microprocessor-based digital technologies” (Gayeski, 1999, p. 589). As the ability of the user to interact with the program is the most critical feature of multimedia (SCI 204: Multimedia Technology), the term interactive multimedia

refers to digital programs that not only allow users to control the rate and sequence of presentations, but also refers to the ability of a program to offer customized feedback based on the user’s input. It functions as a powerful tool for “performance support, feedback, testing and assessment, collaboration, and incentives, and may vary on many dimensions, and the various applications can effectively address different kinds of performance problems and situations” (Gayeski, 1999, p. 595). The obvious value of interactive multimedia agents in e-learning share with is one of performance-based instruction on the job training. Because e-learning “enables people to get up to speed quickly on a new job or on new procedure or tasks being both organization centered and learner centered” (Brethower & Smalley, 1998, p. 15).

## SAMPLES OF MULTIMEDIA AGENTS AND E-LEARNING SOLUTIONS

According to the research conducted by Gayeski (2002), Segrave and Holt (2003), and Watkins, Leigh, and Triner (2004), there multimedia agents can be used as part of the e-learning solution to improve individual and group performance in the workplace. Examples of these agents include:

1. **Interactive presentation graphics:** Perhaps the most common way to use multimedia agents and e-learning programs as a learning tool is to use the graphics in the form of presentation-support tools. Trainers can use computer-generated graphics and audio clips to enhance lectures and discussions instead of static overheads or slides and reinforce concepts learned through the instructional session.
2. **Use of Web sites:** Web sites are relatively inexpensive and easy-to-use addition to conventional instruction and other performance improvement interventions. For example, many instructors and trainer use Web site for posting syllabus, readings, assignments, and classroom exercises. In industry trainers and instructional designer often use Web site for online training, skill remediation training, and for informational purposes. With this example, multimedia agents can help to add interactivity, reinforce concepts, and a give users an escape from text laden sites.

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