The influence of learning style and training method on self-efficacy and learning performance in WWW homepage design training

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Abstract

The present study compares the relative effects of two training methods on learner's computer self-efficacy and learning performance in WWW homepage design. A field experiment was conducted by employing two classes of 10th graders. Results indicated that the behavior modeling training method yielded consistently superior performance and higher computer self-efficacy as compared with the instruction-based approach. Subjects with various learning styles performed substantially different in some learning tasks. The significant two-way interaction indicates the critical roles that gender and learning style played in interacting with training method. For learning performance, male students benefited more from the instruction-based and female students learned better in the behavior modeling condition. Concerning computer self-efficacy, female students gained more from the instruction and male students benefited more from behavior modeling approaches. For different learning style students, there exists a best-fit training approach. In addition, the best-fit training approach is task dependent. These results suggest that each individual training method has its unique merit to meet designated training objectives for learners with specific traits. Future research directions conclude the paper. © 2000 Elsevier Science Ltd. All rights reserved.

Keywords: World wide web; End-user training; Training method; Learning style

1. Introduction

As information technology becomes critical to business operation, user computing skills turn out to be a requisite for employees. The successful usage of information technology (IT) depends on the technology itself and the expertise of the individuals using the technology. With the increasing need

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for company employees to become more computer literate, there is a concurrent need to explore how best to prepare them acquiring computing skills in an effective and efficient way. Recent studies suggested that the choice of training method has consequences on the degree of learning. Moreover, the motivation of the trained individuals to continue to use the technology would be affected as well (Bostrom, Olfman & Sein, 1990; Davis & Bostrom, 1993; Sein & Bostrom, 1989; Martocchio & Webster, 1992; Webster & Martocchio, 1993; Webster, Heian & Michelman, 1990). On the other hand, the broad diversity of individual differences among potential trainees should be taken into account while developing training programs (Sein, Bostrom & Olfman, 1987). Davis and Davis (1990) first explored the effects of training techniques and personal characteristics on training end users of information systems. They found that employee characteristics are essential determinants of work performance. With solid knowledge about end-user training potential and impacts of trainees' different characteristics, educators and trainers can develop programs more suitable for individuals (Bostrom et al., 1990; Davis & Davis, 1990; Sein et al., 1987).

The present study explores several important training issues related to the acquisition of computer skills. First, the relative effectiveness of instruction-based and behavior-modeling-training approaches with respect to computer self-efficacy and learning performance in WWW homepage design training is assessed. The effects of individual difference on learning performance and computer self-efficacy are the next to envisage. The third objective is to use an interactionist psychology perspective to examine the impact of individual difference and training method on learning performance and on computer self-efficacy. In other words, this paper also assesses the feasibility of a contingency approach to training.

The remainder of this paper is organized as follows. The literature review and study hypotheses are presented in Section 2. In Section 3, the research model and the research methodology are outlined followed by information about research procedures and measures. Section 4 describes the data analysis technique and presents the results. The implications of the findings and issues for future research are discussed in Section 5.

2. Literature review

2.1. Training method

Training is widely recognized as an essential contributor to successful systems implementation and end user computing (Grover & Teng, 1994; Igbaria, Pavri & Huff, 1989). The relative merits of various training programs are debated in the literature. Gist, Schwoerer and Rosen (1989) explored training in a classroom setting while employing the behavior-modeling-approach to understand self-efficacy. They found that the behavior modeling approach relative to a computer-aided instruction approach yielded higher self-efficacy and performance scores on learning computer software. Compeau and Higgins (1995) examined how behavior-modeling-training program and a traditional lecture-based program influence the learners' performance and self-efficacy. They found that behavior modeling was more effective than the lecture-based, only in Lotus 1-2-3 but not in WordPerfect. Davis and Bostrom (1993) examined the relative merits of two types of interface (i.e., direct manipulation interface and command-based interface) using instruction and exploration training conditions. Results of the study showed that outcomes were indifferent for the