

## Chapter 45

# Self-Efficacy Beliefs of Adult Learners Utilizing Information Communication Technologies

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### ABSTRACT

*The theory of self-efficacy has been shown to be a contributing factor to the success of adult learners' in educational programs that utilize information communication technologies, specifically online learning. The determination of online learning self-efficacy is measured with the Tennessee Online Instruction Scale that measures self-efficacy beliefs using three factors of (1) internet; (2) collaborative/online learning, and (3) personal beliefs. It is the purpose of this chapter to help readers understand and use these findings that can contribute to the overall success of adult learners in an online environment. Included are summary results from Carol Carter's 2004 dissertation on self-efficacy beliefs among college students.*

### INTRODUCTION

The primary focus of this chapter is self-efficacy and learning motivation of online adult learners. Self-efficacy has been identified as a significant predictor of student motivation (Bandura, 1986, 1997). In traditional face-to-face classrooms, previous studies have determined that self-efficacy is predictive of academic performance and course satisfaction (Bandura, 1997; Pajares, 1996, 2002; Zimmerman, 1995). Other studies have shown that same relationship of self-efficacy

to academic performance in Mathematics (Lopez & Lent, 1992; Nielsen & Moore, 2003; Schunk, 1990). Finally, an individual's motivation in using online instruction and online courses is affected by a strong propensity for self-efficacy results (Miltiadou, 2000).

The self-efficacy construct is an important mediating link between human cognition and behavior. According to Bandura (1986, 1997) and Zimmerman, 1995), social cognitive theory and self-efficacy research indicate that self-efficacy decisions can influence performance. Consequently, the learners' beliefs in their abilities to successfully perform in an online environment

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may directly affect their scholastic achievements and performances. The online environment is a component of Information Communication Technologies (ICT) (Mansell & Silverstone, 2001).

Adult learners are utilizing ICT to augment their classroom experience. This cyber environment is rich with media and new technologies (Carter, 2004). It is well and good that information communication technologies have augmented our old stale classroom instruction techniques. Today's adult learner will succeed only by using his or her technical skills as well as knowledge of computer and instructional technologies. These tools are the new standard for business and even experienced workers are embracing these new technologies. The purpose of this chapter is to investigate the background, development, and application of the Tennessee Online Instructional Scale© (TOIS) that is designed to help measure the adult learners' online instructional self-efficacy.

## **BACKGROUND**

This chapter is based primarily on social cognitive and self-efficacy theories. Bandura proposed that social cognitive theory (SCT) is characterized by three interacting factors: (a) behavior, (b) personal factors, and (c) environmental factors. The determining interaction of these factors, according to Bandura (1997), the triadic reciprocity model. Bandura argued that assumptions could be made that environmental factors might affect the cognitive perceptions (behavior) of adult learners. In other words information communication technologies such as online learning and web based instruction could affect could be affected by one's self-efficacy Bandura (1977, 1986, 1997).

## **Influences of Self-Efficacy**

Several studies have found that adult learners with high self-efficacy beliefs shared similar high motivation characteristics such as, participating

more readily, working harder, persisting longer, and demonstrating fewer adverse emotional reactions when they encounter difficulties than those who doubt their capabilities (Bandura 1997; Multon, Brown, & Lent, 1991). The self-efficacy construct is also reported as having strong and positive influences on computer learning (Decker, 1996; Delcourt & Kinzie, 1993), online instruction (Loboda, 2002; Randall, 2001) and multimedia learning systems (Cheung, Li, & Yee, 2003).

In these austere economic times, both educational programs and businesses are relying on learning and instruction via the Internet to reduce costs and provide updated technology training for employees and students (Greengard, 2009). Consequently, online instruction has permeated the training curriculum of corporations and they have incorporated online technologies in their traditional courses. This trend, recognized in the business world, is also transforming higher education as institutions gain interest in investigating how online instruction might be used to enhance teaching and learning. As Khan (1997) noted in his book titled *Web-Based Instruction*, web-based instruction is increasingly becoming the new wave of instruction found in higher education.

The proliferation of online and web-enhanced instruction demands a new paradigm for learning, one that is less devoted to rote memorization of facts to one more dedicated to a process of inquiry and control of one's own learning (Petty, Lim, & Zulauf, 2007). Students' use of new and innovative online instructional technologies will become a continuing process due to the expected rapid advances in computer technology. These online instructional methods will become essential catalysts within the lifelong learning process, facilitating the need to access information and thus provide an academic environment supporting inquiry, self-directed learning, self-efficacy and creativity (Petty, 1999). An assumption has been made (Carter, 2004) that computer experience might enhance students' beliefs in their abilities to accept online and web-enhanced instruction.

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