



Computer anxiety and anger: the impact of computer use, computer experience, and self-efficacy beliefs

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Abstract

Past research has demonstrated that the level of computer experience users have is the most valuable predictor in whether or not they will suffer computer anxiety symptoms, but this was not the case in the present study. No research was found which examined the correlates of computer anger symptoms. In the current study, the relationship between the computer use (frequency and duration), computer experience, and self-efficacy beliefs of users were analyzed as predictors for computer anxiety and anger symptoms. Questionnaire data from a sample of 242 university students were analyzed. The results indicated that computer self-efficacy beliefs, not computer experience or use, had the largest significant relationship with both computer anxiety, and anger. It is suggested that self-efficacy beliefs be increased so that users may experience lower levels of anxiety and anger. These findings are contrary to the trend of training computer users in specific computer domains. As computer anxiety and anger are negative psychological “states”, an immediate method to deal with these negative emotions should be developed. One possibility that is explored is the application of computer-based therapy that can be used while a user is experiencing negative emotional symptoms.

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1. Introduction

1.1. Computer anxiety

Previous researchers have suggested that computer anxiety affects one-fourth of the population (Gos, 1996). Another researcher (Brosnan, 1998) has found that one-third of individuals among different populations experience some level of computer anxiety, varying from avoiding computers at all costs to minor stress. However, Rosen and Maguire (1990) have suggested that almost 50% of individuals display some sort of anxious behavior while using a computer. Whatever the exact percentage, it seems as though computer anxiety affects a great number of the people, and therefore must be addressed as a serious problem. Some researchers have implied that computer anxiety symptoms will abate with time resulting from a general increase of societal exposure to technology, however Bozionelos (2001b) has not found such a relation.

Computer anxiety is defined as a negative emotional state and/or negative cognition experienced by a person when he/she is using a computer or imagining future computer use (Bozionelos, 2001a). Computer anxiety is “state anxiety” which occurs at the time of computer use or at the time of imagined future computer use, and not inherently a personality trait (Chua, Chen, & Wong, 1999; Cambre & Cook, 1985). Therefore, the computer anxiety symptoms of individuals should be measured only at these times.

Computer anxious individuals exhibit phobia-like symptoms which lead them to use computers less, and when using computers to complete tasks, they do so more slowly (Mahar, Henderson, & Deane, 1997). In addition, Bozionelos (2001b) suggested that computer anxiety causes decreased levels in psychological well-being. He further explained that if society continues to force computer technology onto computer anxious individuals, then this could actually result in a worsening of the already present anxiety symptoms. This suggests that systematic desensitization, a technique used in psychological learning theory, would help already anxious individuals approach and use computers in a systematic and gradual way after learning to remain calm.

Researchers have looked at possible factors which are correlated with computer anxiety including: specific computer experiences and domains (e.g. Bozionelos, 2001b; Chua et al., 1999; Gos, 1996), computer use (Bozionelos, 2003), and self-efficacy beliefs and outcome expectancies (e.g. Bandura, 1977, 1986; Compeau & Higgins, 1995; Hill, Smith, & Mann, 1987).

Traditionally researchers have used psychological measurement scales to operationalize computer anxiety (e.g. Hudiburg, 1990; Bozionelos, 2001a, 2001b; Cambre & Cook, 1985; Rosen & Maguire, 1990). Cambre and Cook (1985) explained that many assessments tests have been developed and used, but as computer anxiety is believed to be a state anxiety, the most consistent and reliable device is the State-Trait Anxiety Inventory (Spielberger, 1983). The main approach is to modify the State-Trait Anxiety Inventory into Likert scale formats (Cambre & Cook, 1985). Other researchers agree with these guidelines (Mahar et al., 1997).

1.2. Computer anger: Possibly a new research field

No research was found examining or explaining anger resulting from computer use. Anger is usually said to be the cognitive component of aggression, a larger term which also encompasses physical acts such as violence (i.e., the outward symptoms). “Anger consists

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