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Computer anxiety: relationship with computer experience and prevalence

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Abstract

The study investigated: (1) the form of the relationship between scores on computer anxiety and scores on computer experience; and (2) differences in computer anxiety scores and prevalence rates between groups of individuals with presumably differential early exposure to computer-based technology. Questionnaire data from three British samples, which included 228 managers and professionals, 67 graduate students and 220 undergraduate students, were analyzed. Logarithmic values of scores on computer experience were compared with raw computer experience scores in predicting scores on computer anxiety. Logarithmic values consistently entered the regression equations at the expense of raw values. Substantial computer anxiety prevalence rates were identified in all samples. The youngest sample with the presumably earliest exposure to computerization reported the highest computer anxiety scores and demonstrated the highest prevalence rates. The findings are discussed in terms of their implications for data analysis tactics and for the trend regarding the presence and prevalence of computer anxiety. © 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Computer anxiety; Computer experience; Prevalence; Cohorts

1. Introduction

Computer anxiety refers to negative emotions and cognitions evoked in actual or imaginary interaction with computer-based technology. It has the nature of a trait that predisposes towards the state of psychological distress in situations that involve encounters with computers (Deane, Henderson, Barrelle, Saliba, & Mahar, 1995; Maurer & Simonson, 1984). Behavioral manifestations of computer anxiety include:

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(1) avoidance of computers and the general areas where computers are located; (2) excessive caution with computers; (3) negative remarks about computers; and (4) attempts to cut short the necessary use of computers (Maurer & Simonson, 1984). Its existence has been demonstrated across diametrically different cultures (e.g. Marcoulides & Wang, 1990). Computer anxiety has been predominantly assessed with self-report scales utilizing Likert-type formats (e.g. Heijnen, Glass, & Knight, 1987; Raub, 1981; Rosen, Sears, & Weil, 1987).

Computer anxiety affects utilization of computer-based technology and performance on tasks that involve use of computers (e.g. Heijnen et al., 1987; Mahar, Henderson, & Deane, 1997; Rosen & Weil, 1995). For this reason, computer anxiety incurs serious economic costs (Mahar et al., 1997); estimated at the level of multiple billion dollars per year (Edler, Gardner, & Ruth, 1987; Gardner, Young, & Ruth, 1989). Furthermore, computer anxiety is systematically associated with psychological well-being (e.g. Deane et al., 1995; Heijnen et al., 1987; Hudiburg, 1990; Rosen, Sears, & Weil, 1993; and Bozionelos, 2001, for an integration). The penetration of computer-based technology into most domains of life accounts for the diffused effects of computer anxiety.

Taking into account the important implications of computer anxiety for the economy and the quality of life, two issues are of particular interest: (1) correlates of computer anxiety and the nature of relationships; and (2) prevalence rates of computer anxiety. Research on consistent correlates and patterns of relationships is important for insight into causes and, therefore, treatment. Prevalence estimations are essential for predictions about the presence of the phenomenon in the future, so necessary action can be planned.

The purpose of the present research was two-fold: (1) to compare logarithmic values with raw values of computer experience scores in predicting scores on computer anxiety; and (2) to investigate differences in computer anxiety and prevalence rates between samples that represented different cohorts in terms of early exposure to computerization.

1.1. Computer anxiety and computer experience

The most consistent correlate of computer anxiety is computer experience (see Chua, Chen, & Wong, 1999, for a meta-analysis and Brosnan, 1998, 1999; Deane et al., 1995; Mahar et al., 1997; Rosen & Weil, 1995, for most recent investigations). In cross-sectional research, computer experience has been typically operationalized either: by means of single item self-reports of time length of computer use (e.g. Henderson, Deane, Barrelle, & Mahar, 1995; Mahar et al., 1997); or by means of multi-item self-report scales that assess degree of experience in various computer technology applications (e.g. Heijnen et al., 1987; Igarria & Chakrabarti, 1990; Rosen & Weil, 1995). Although alternative techniques have been developed (e.g. Rosen et al., 1987, 1993) treatment of computer anxiety has almost exclusively relied on provision of computer experience. Therefore, delving into the relationship between computer experience and computer anxiety is critical.

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