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Technophobia and personality subtypes in a sample of South African university students

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Abstract

This study examined levels of technophobia in a sample of 176 South African university students enrolled in first-year computing and psychology courses. Technophobia, which is described as negative psychological reactions towards technology, was assessed using Rosen and Weil's Measuring Technophobia instruments. The levels of technophobia were correlated with each of the five dimensions (neuroticism, extroversion, openness, agreeableness, conscientiousness) of the NEO-Five Factor Inventory. The results indicate a positive correlation between technophobia and Neuroticism, and an inverse correlation between technophobia and Openness. Technophobia was found to be inversely correlated with computer experience, weakly correlated with age, but not associated with gender. © 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Attitudes towards computers; Technophobia; Personality

1. Introduction

The general study of attitudes towards computers has a long history. In 1963, Lee proposed a two-factor measurement of attitudes and his instrument has been often re-used (Clarke & Finnie, 1998; Finnie, 1987; Weil & Rosen, 1995, 1997). Since Lee's study, many researchers have attempted to describe attitudes towards technology in more than two dimensions. For instance, Lloyd and Gressard (1984) developed the Computer Attitude Scale which measured computer anxiety, computer confidence and computer liking; Koohang and Byrd added the dimension of perceived

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usefulness (Byrd & Koohang, 1989; Koohang, 1989); and Kay (1989) developed the Computer Attitude Measure which comprised cognitive, affective and behavioural attitudes.

With the increasing introduction of new information technologies, new opportunities are presented which offer a highly comfortable vision of the future. However, for some people these benefits are problematic and negative emotional reactions, such as anxiety, are commonly associated with a failure to use new technologies (Moston, 1996). This fear of technology seems particularly pronounced when related to computing technology and the term "computerphobia" has been used to refer to negative attitudes towards computers (Jay, 1981). Other researchers prefer the term "technophobia", although this misleadingly suggests a broader application to forms of technology other than computer-related. Rosen and Weil (1995) define technophobia in the following way:

> ..."technophobia" as evidence of one or more of the following: (a) anxiety about present or future interactions with computers or computer-related technology, (b) negative global attitudes about computers; and/or (c) specific negative cognitions or self-critical internal dialogues during present computer interactions or when contemplating future computer interaction.

Studies by Weil and Rosen established that technophobia is best measured on the three separate but overlapping dimensions of anxiety, negative cognitions, and negative attitudes (Rosen & Maguire, 1990; Rosen & Weil, 1992; Rosen, Sears & Weil, 1987, 1992; Weil & Rosen, 1995, 1997). The work of these authors led to the development of three separate instruments designed to measure different aspects of technophobia: the Computer Anxiety Rating Scale (CARS), Computer Thoughts Survey (CTS) and the General Attitudes Toward Computers Scale (GATCS) (Rosen & Weil, 1992).

A considerable amount of research has been conducted into the possible causes of technophobia. Studies have found that alienation (Ray & Minch, 1990), computer experience (Brosnan, 1998a, c; Clarke & Finnie, 1998; Okebukola, Sumampouw & Jegede, 1992; Todman & Lawrenson, 1992; Weil & Rosen, 1995, 1997), gender (Brosnan, 1998b, c; Finnie, 1987; Koohang, 1989; Moore, 1994; Rosen & Maguire, 1990; Sanders & Galpin, 1994), age (Brosnan, 1998c; Rosen et al., 1987) and self-efficacy (Brosnan, 1998a, b, c) are possible correlates of technophobia; however, inter-study comparisons show that the results are often contradictory.

Studies by Fariña, Arce, Sobral and Carames (1991) as well as by Chen and Vecchio (1992) suggest that computer attitudes may be directly related to personality. Chen and Vecchio (1992) reported that an introverted orientation was associated with improved ability at computer programming. Fariña et al. (1991) found that trait anxiety and anxiety towards mathematics both influenced anxiety towards computers. The present study sought to clarify the nature of this relationship between personality traits and computer attitudes. Recent conceptualisations of personality suggest a five-factor model incorporating Neuroticism, Extroversion, Openness, Agreeableness and Conscientiousness (Costa & McCrae, 1992; Howard

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