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# Gender influences on children's computer attitudes and cognitions

A.S. North\*, J.M. Noyes

*University of Bristol, Department of Experimental Psychology, 8 Woodland Road, Bristol BS8 1TN, UK*

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## Abstract

The relative 'explosion' of computerised technology in recent years has been accompanied by a wealth of psychological research that has indicated a mixed response of attitudes to the now ubiquitous computer. Whilst many people hold positive attitudes about computers, many individuals express serious concerns and have been labelled 'technophobic'. This study considers whether technophobia is a transitory phenomenon by assessing the computer attitudes and cognitions of 104 children aged 11 and 12 via self-report questionnaires. Contrary to previous reports (e.g. Rosen & Weil, 1992, *Measuring technophobia: a manual for the administration and scoring of the computer anxiety rating scale (Form C), the computer thoughts survey (Form C) and the general attitudes towards computers scale (Form C)*. Version 1.1. California State University) the prevalence of technophobia was found to be low. Similarly the impact of psychological gender (sex and sex-role) was assessed and found, in general, not to significantly influence attitudes or cognitions towards computers. This does not support the notion that a technological gender gap is developing, nor the literature that suggests males hold more positive attitudes and cognitions than females. However, whilst in this instance it appears that the computer is viewed positively, it is tentatively suggested that looking to the future, technophobia will not be problematic. © 2002 Elsevier Science Ltd. All rights reserved.

*Keywords:* Computers; Technophobia; Children; Gender

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## 1. Introduction

Four years ago, it was predicted that half of the British population would own a personal computer (PC) by the year 2000 (Motorola/MORI, 1996). The same survey also revealed that almost half of the population fear that they are being left behind by technology, many being unconvinced about the relevance of 'new technologies'

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\* Corresponding author. Tel.: +44-1179-288581; fax: +44-1179-288588.

*E-mail address:* alicenorth@yahoo.co.uk (A.S. North).

such as the PC, computer games, mobile phones, pagers, electronic organisers, modems, and the Internet. This implies that while computerised technology has become an integral part of our lives in the UK, some people are not enthused by this. However, rather than assume the nation is divided into those who hold positive attitudes towards the 'technological revolution' and those who are resistant to new innovations, attitudes towards technology should be regarded as multi-faceted constructs rather than unitary ones (Whitely, 1997). Several researchers suggest that people often hold mixed bi-directional views towards technology, holding both positive and negative attitudes simultaneously (e.g. Glass & Knight, 1988; Rosen, Sears, & Weil, 1987; Shaw, 1984). Taking this into consideration, numerous researchers have contrarily found clear evidence that permits categorisation of people by their prevailing global attitudes towards computers. People that have held especially positive or negative attitudes towards technology have been labelled 'technophiles' and 'technophobes', respectively (Brosnan, 1998; Mitchell, 1994; Richards, 1993).

Technophiles are described as "early adopters, people whose interest extends beyond the practical use of technology. They get excited about technology itself, whatever its purpose" (Mitchell, 1994, p. 38). However, there is a dearth of empirical evidence on technophiles. Most research has used individuals who express positive attitudes, albeit to a less enthusiastic extent than Mitchell's description. Many studies claim that the majority of the population hold positive attitudes and are comfortable with computers (e.g. NOP, 1996; Reed, 1996; Rosen & Weil, 1992). This may be regarded as advantageous for a number of reasons. It is suggested that computer literacy will become a critical filter for well-paid jobs (Miura, 1987). In addition, positive attitudes have been correlated with better computer performance (Munger & Loyd, 1989), and traits such as computer playfulness have been associated with learning and motivation (Webster & Martocchio, 1992).

It has, however, also been well documented that a consistent and surprisingly large section of people hold negative attitudes towards computers (Lightbody & Durndell, 1996; Rosen & Weil, 1992). Estimates range from 10 to 50% of the population (Gardner, Render, Ruth, & Ross, 1985; Rosen & Maguire, 1990; Weinburg & Fuerust, 1984). Typical findings indicate that up to one-third of 'all people' in the industrial world are uncomfortable with computer technology (Brosnan & Davidson, 1994; Heinssen, Glass, & Knight, 1987; Rosen et al., 1987). However, the wide variance in the prevalence of technophobia implies that the term is used inconsistently. Further, the label describes individuals who demonstrate mild to severe tendency (Weil, Rosen, & Wugalter, 1990).

A large amount of empirical research has investigated the correlates of technophobia; this has included comparisons with mathematics anxiety, state and trait anxiety, experience, computer aptitude, literacy, interest, physiological responses, hemisphericity and sex-role identity (Rosen & Weil, 1992). Attitude, anxiety and cognition are considered independent dimensions as both appear to be correlated with different variables (Rosen et al., 1987). Within this research, there has been considerable theoretical and empirical interest in the potential relationships between computer attitudes and anxiety with gender and sex-role identity. Gender may be

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