Computer experience and computer anxiety

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Abstract

In this article two studies are reported that tested the nature of the relationship between computer experience and computer anxiety. In the first study 184 first year psychology students were given a questionnaire that measured their computer experience in terms of e.g. breadth of experience, hours spent on working with computers, skills level, the nature of the first computer experience and the occurrence of computer anxiety. A combined latent-factor path model depicting the relationship between experience and anxiety was construed and tested by means of EQS. The model in which computer experience unidirectionally influenced computer anxiety showed a reasonable fit (CFI = 0.91). Two other models were also tested. The model in which experience was a consequence of anxiety in terms of physical arousal and affect and the reciprocal model showed insufficient fit (CFI = 0.79 and 0.86). A second study among 225 first and third year psychology students was done to see if the original model could be improved upon. Adding the variables "sex" and "necessity of use of computers" into the model improved the fit of the model (CFI = 0.93); it was also found that the amount of control felt during the first experience raised levels of feeling computer literate and liking the computer.
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Computers have become all pervasive in Western daily life. As a result, many people nowadays have direct or indirect experience with using computers. However, using a computer is not always a satisfying or joyful event. Even worse, some people feel a strong aversion to working with computers or fear them. These people suffer in various degrees from what is called "computer anxiety." In this article, two

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studies are reported that focus on the relationship between computer experience and computer anxiety and the possible direction this relation takes. Three possibilities were explored: (1) Does computer experience or lack thereof cause computer anxiety? (2) Alternatively, does computer anxiety refrain persons from gaining computer experience? (3) Do computer experience and computer anxiety influence each other reciprocally? In the following we will briefly review the research on computer experience and computer anxiety.

Potosky and Bobko (1998, p. 338) define computer experience as "the degree to which a person understands how to use a computer. That is, an experienced computer user understands enough about computers in order to use them, more or less independent of specific software packages, reasons for use and computer hardware features." Computer experience can thus be seen as the sum of all computer-related events. These events include (1) the number of hours spent using a computer at home, in the office, at school, (2) the hardware and software used such as a pc or a personal digital assistant and applications such as word processing, databases, programming, e-mailing, downloading software from the internet, and (3) the frequency of use, e.g. per hour, daily, weekly, monthly. Part of the experience is also how one feels about these events (Smith, Caputi, Crittenden, Jayasuriya, & Rawstorne, 1999).

Quite some research has been conducted on the nature of computer anxiety and on its precursors. Computer anxiety has been described in terms of aversion, of fear of being directly or indirectly involved with computers in the present or in the future (Loyd & Loyd, 1985; Smith et al., 1999). It is often accompanied by negative and critical thoughts on one's behavior and fear for computer crashes or making gross errors (Nelson, Wiese, & Cooper, 1991). Beckers and Schmidt (2001) have proposed a model of computer anxiety, comprising six factors: (1) computer literacy (in terms of acquired computer skills), (2) self-efficacy (confidence in one's capabilities to learn to use computers), (3) physical arousal in the presence of computers (such as sweaty hand palms, shortness of breath), (4) affective feelings towards computers (like and dislike of computers), (5) positive beliefs about the benefits for society of using computers, and (6) negative beliefs about the dehumanizing impact of computers.

A number of studies found that there is a negative relation between the total amount of experience one has with computers and the prevalence of computer anxiety (Heinssen, Glass, & Knight, 1987). Simply put, the more experienced you are, the less anxious. However this relationship is not as straightforward as it seems. Rosen, Sears, and Weil (1987) found that it mattered how people felt about their first experiences with computers and about events that had a significant impact on their current feelings about technology. They also concluded that many people who had negative first experiences and experienced negative significant events remained anxious and, in some cases, became even more anxious while gaining more experience. They found that the quality of support in terms of professionalism, friendliness and enthusiasm at these events may have a profound influence on the prevalence of computer anxiety. Summarizing, the presented literature suggests that negative first experiences with computers and the lack of support received during these experiences may negatively influence the amount of experience gathered in later years,