Gender-Based Attitudes Toward Technology

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INTRODUCTION

During the past 30 years of investigation into the ratios of males and females using technology (Harrison, Rainer, & Hochwarter, 1997), there have been consistent reports of males being more positive toward technology and being more likely to adopt the use of new technology on a voluntary basis (Volman, & Van-Eck, 2001). This trend has been reported from early school through adult life, and from diverse geographical sources (Broos, 2005; Heemskerk, Brink, Volman, & Ten-Dam, 2005). Although some scientists have argued that this pattern is changing (Colley & Comber, 2003; Durndell & Thomson, 1997), surveys continue to show an imbalance between the sexes favoring males over females (Colley & Comber; Heemskerk et al., 2005).

The authors consider the consequences of this gender bias to be significant not only in terms of maximizing the whole potential workforce, but also because there is some evidence that males design information- and knowledge-based systems in ways that are different from females, and often these differences favor male users in communication and searching methods. The gender imbalance may become of increasing importance as high-technology industries, such as knowledge engineering and Web commerce, become the normal methods of conducting business throughout the global economy.

BACKGROUND

A scarcity of females in computing can be detected from the earliest levels in many educational systems (Durndell & Haag, 2002). It pervades through all levels of education and into industry (Jackson, Ervin, Gardner, & Schmitt, 2001). This trend could not only pose a threat to the economic growth and stability of the global economy, but it may also reflect a continuing gender inequality in society.

When we consider the individual differences that occur in humans, then gender, along with age, are often considered among the primary attributes that differentiate people from each other. In comparison to many of the differences such as intelligence, cognitive style, or social grouping, the difference of gender is relatively easy to determine; but like racial origin or social grouping, the topic of gender is often sensitive and highly controversial (Morgan, Brebbia, Sanchez, & Voiskounsky, 2004).

Explanations for these reported gender differences have been varied, but include genetic and hormonal sources (Brosnan, 2004), brain chemistry (Bransford, Brown, & Cocking, 1999), cerebral lateralization (Brosnan), and social roles (Morgan, 2005; Morgan, Gibbs, Macleod, & Morris, 1991; Morgan & Morgan, 2000; Morgan et al., 2004).

FUTURE TRENDS

Reviews of the literature of gender and technology show a consistent trend of male domination in the computing industry and education (Volman & Van-Eck, 2001). Although there appears to be no single reason for this domination, social roles and stereotypes are now thought to be of major importance in shaping education and vocational choices (Durndell & Thomson, 1997; Morgan & Morgan, 2000).

There is a growing body of evidence that suggests that there are strong parental influences on the attitudes and behaviors that we develop in later life. These influences include not only our views on appropriate gender-based behavior (Snyder, Velasquez, Clark, & Means-Christensen, 1997; Tidwell, Witt, 1997), but also our attitudes toward technology and even our self-rated proficiency in

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using technology (Morgan, 2005; Morgan et al., 1991; Morgan & Morgan, 2000; Morgan et al., 2004). It is the authors' view that in order to redress the gender imbalance inherent in the technological world of the future, greater emphasis should be placed on parental influence and also that of the educators to encourage females to explore and develop a positive technological attitude. Of equal importance is the establishment of more positive female role models, particularly with regard to the representation of women and technology in the media.

CONCLUSION

As yet, there are no universally accepted explanations for the sex differences found in computing. Broos (2005) conducted a large quantitative analysis of previous studies of the gender divide in ICT attitudes and found, in general, females had more negative attitudes toward computers and the Internet than did men. As we have seen, there is some evidence that social and cultural effects play a large role in gender differences. The mass media also can influence people's perceptions by the way in which they portray sex roles. Currently, males are usually portrayed as being the predominant users and being in dominant roles in any mixed-sex portrayals (http://www.media-awareness.ca/english/issues/stereotyping/women_and_girls/index.cfm).

One other factor that could explain the lack of females in computing is the harassment of females in the typically male-oriented workplace (Rutter, 1996). This reflects a sexist attitude of viewing females as sex objects rather than human beings or fellow workers. The task of addressing such unfair attitudes, stereotypes, and biased behavior will take considerable time, but it can only be hoped that a day will come when such unfair pressures are removed.

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