

# Chapter 58

## A Step toward Assistive Technology Evidence– Based Practices: Latent Dimensions of Information and Communication Technology

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### ABSTRACT

*In an attempt to meet the need for validation research that contributes to Assistive Technology (AT) evidence-based practices, this chapter presents the findings of a study aimed to identify latent dimensions of Information and Communication Technology (ICT) that can serve as the basis for the eventual development of a standardized instrument for ICT assessment and selection in the context of AT. The ICT preferences and practices of 1,258 postsecondary students across 7 major universities were examined. A confirmatory factor analysis within the framework of structure equation modeling revealed the 5 latent dimensions: communicating, socializing, downloading and sharing, gaming, and learning. These dimensions examined in the context of age, gender, and income, further reveal that these demographics, as sole determinants of ICT usage, are not supported. Noteworthy findings were also found with regard to participant's preferences for ICT, to include a tendency to text over all other technologies surveyed.*

### INTRODUCTION

The amount of information and communication technology (ICT) available today is astounding. Take smartphone ownership alone, which by 2013 is forecasted to surpass PCs as the most common

way in which people will access online content (Whitney, 2011). In fact, it has been predicted that the number of smartphones and similar types of devices will surpass 1.82 billion, with 6.5 billion mobile connections projected by 2014 (Whitney, 2011). Explosive growth such as this has in part

DOI: 10.4018/978-1-4666-8200-9.ch058

helped fuel a number of research interests, to include ICT preferences and practices, as well as identifying underlying factors that may be used in the proper selection of ICT (e.g., Nasah, DaCosta, Kinsell, & Seok, 2010). These are topics of particular importance, especially to those in special education who are involved in the evaluation and selection of assistive technology (AT). Unfortunately, research on the subject is inconclusive if not lacking, both generally and with regard to ICT in the context of AT.

### **Information and Communication Technology and Young People**

By and large, much of what can be found on ICT is based on anecdotal information, focused on today's young people. That is, those individuals considered to have been "born digital" (Palfrey & Gasser, 2008) into the late twentieth and early twenty-first centuries. Known by a number of monikers – the Millennial Generation (Howe & Strauss, 2000), the Net Generation (Tapscott, 1998), the Technological Generation (Monereo, 2004), Generation M (Roberts, Foehr, & Rideout, 2005), the Google Generation (Rowlands et al., 2008), and Digital Natives (Prensky, 2001a) – these young people have, undeniably, been the most investigated, marketed to, and captivating age bracket to date (Cone Inc., 2006). In fact, there is no refuting that their "contagious" nature (Hoover, 2009) has turned them into a lucrative industry. Books and countless articles have been written about them, and the U.S. television news magazine, 60 Minutes, broadcast a story entitled, *The Age of the Millennials*, depicting these young adults as ill-prepared for a demanding workplace. Fortune 500 companies, such as Merrill Lynch and Ernst & Young, have even gone as far as to hire consultants to help them better understand how to deal with this group of up-and-coming workers (Safer, 2007).

Yet, even with everything that has been published about these young people since the late twentieth century, our understanding of these youth is at best, muddled (Hoover, 2009). This lack of clarity partly stems from the fact that the wealth of commentary on the topic is mostly founded on opinions and subjective evidence, with scarce empirical findings to support the suppositions made about these individuals (StudentPOLL, 2010). Take, for example, the strongly argued and commonly cited theories of Howe and Strauss (2000). As commonsensical as their theories appear to be, some argue that their suppositions are founded on problematic research. As Hoover explains, the theories put forth by Howe and Strauss "were based on a hodgepodge of anecdotes, statistics, and pop-culture references, as well as on surveys of teachers and about 600 high-school seniors in Fairfax County, Va., which in 2007 became the first county in the nation to have a median household income of more than \$100,000, about twice the national average" (§ 9).

Also, take for example the equally commonly cited theories proposed by Prensky (2001a, 2001b), a proponent of game-based learning, who has suggested that today's students have spent their lives so immersed in a digital culture that it has fundamentally changed the way in which they process information. Although this is a compelling argument embraced by many, others, such as Pivec and Pivec (2008), have concluded that the majority of Prensky's publications are "mainly opinion papers, not peer-reviewed studies, and offer very little empirical research to support the claims" (p. 5). Some have even gone so far as to suggest that the digital native label is a "misleading and deceptive title that dissuades educators from looking at the intricacies of how individuals engage digital media" (Guo, Dobson, & Petrina, 2008, p. 237).

This overabundance of anecdotal information has made it difficult for educators, policy-makers,

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