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The Internet knowledge (iKnow) measure ☆

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Abstract

Despite increasing development and administration of Internet surveys, tests, and many other applications to be used by employees and the general public, little is known about the knowledge individuals bring to Internet tasks. This research improves our understanding of the concept of Internet knowledge, and provides initial support for the construct validity of a new measure of Internet knowledge with respect to its factor structure, internal consistency reliability, and concurrent validity. From a practical perspective, clearer definition of Internet knowledge and the availability of a reliable measure of such knowledge can advance our understanding of how individuals develop Internet experience through its use and may also inform the process by which web sites and Internet applications are designed.
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"The Internet is an information 'super highway' that connects people, data and other computers." At least that is what one respondent to a survey (described below) said when asked, "What is the Internet?" Rather than offer a definition, another survey respondent commented that the Internet is "a huge distraction of mine." Other responses provided by the three hundred adults who participated in the present investigation included, "The Internet is a database where you can get any data or anything you need,"..."The Internet

is an intangible concept. It is essentially the ability to communicate and access other computers," and ...."What isn't it?"

Although people appear to have various ideas about what the Internet is, little research has informed our understanding as to what knowledge or background experience regarding the Internet is applied when people access and use it. At the same time, research and practice that uses the Internet as a medium to survey, test, influence, or inform individuals has logically assumed that individuals' Internet knowledge may be a factor in their willingness to respond to web-based surveys, solicitations, and scores on web-based assessments (e.g., Barbeite & Weiss, 2004; Foster Thompson, Surface, Martin, & Sanders, 2003; Harris, Van Hoye, & Lievens, 2003; LaRose, Mastro, & Eastin, 2001). It is assumed, for example, that assessment over the Internet may be "confounded by the novelty of the format" (Naglieri et al., 2004, p. 155). This suggests that people who are unfamiliar with the Internet may be at some disadvantage during Internet assessment in comparison with people who are more knowledgeable about the Internet or experienced with its use. Yet, what constitutes familiarity with or working knowledge of the Internet is not clear. What does it mean to be an experienced Internet user? How does a person's Internet knowledge relate to his or her beliefs about the Internet, computer experience, or reactions to a task presented via the Internet? Does an individual's familiarity with the Internet affect performance of tasks that require Internet access and use? How quickly does Internet knowledge develop? The first step to answering questions such as these requires a definition of the domain that includes the knowledge, behaviors, and capabilities that form what we understand to mean "Internet knowledge." Then it is possible to construct an internally consistent, construct valid measure of Internet knowledge.

The purpose of this research is to begin to develop an Internet knowledge measure and to describe the potential application of such a measure for practice and research. The following section presents a construct definition of Internet knowledge. It develops hypotheses to explain the relationships between Internet knowledge and other characteristics of Internet users. Then an initial assessment of the validity of a new self-report measure of Internet knowledge is explored, and results of a study utilizing the measure are presented. Implications for research and practice are discussed in the final section.

1. Internet knowledge as a construct

The concept of Internet knowledge refers to a set of individual characteristics or qualities that develop over time and that generalize from one set of tasks or uses involving the Internet to another. Specifically, Internet knowledge is perhaps best defined in terms of what people know about the Internet as well as the various kinds of things people are able to do using the Internet. These two aspects of Internet knowledge have been identified as essential to the most common uses of the Internet (Page & Uncles, 2004). First, familiarity with terms specific to the Internet (e.g., "browsers," and "cookies") may be essential to the development of a person's Internet knowledge. This knowledge of terms represents declarative knowledge (Best, 1989) of the Internet. Of course, knowing how to speak the language of the Internet is not the same as knowing how to effectively "surf" the Internet and perform other Internet-related tasks. Second, understanding how to perform relevant procedures associated with Internet use is related to procedural knowledge of the Internet (Best, 1989; Page & Uncles, 2004). For example, successful retrieval of information is