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Barbara Klein
University of Michigan-Dearborn

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Barbara D. Klein
University of Michigan-Dearborn
bdklein@umd.umich.edu

Abstract

There have been calls for training designed to increase user awareness of information quality problems on the Internet. However, little research has examined the effect of this training. This study examines the effect of information quality sensitivity training on user perceptions of the quality of Internet-based information. Survey data will be collected from users with and without information quality sensitivity training using an instrument that builds on prior research identifying important dimensions of information quality. The findings will provide a basis for the development of training programs designed to sensitize users of the Internet to information quality issues.

Introduction

Because it is relatively easy and inexpensive to publish information on the Internet, a tremendous amount of information on almost every imaginable topic is available to people with access to the Internet. The dark side of the ease with which this information can be published is that information quality problems can arise. Quality control processes such as editorial and peer review are sometimes absent when information is published on the Internet. This can lead to problems that have been recognized in the literature on the Internet (e.g., Pack 1999; Hawkins 1999; Fuld 1998). Checklists and frameworks providing prescriptive advice for evaluating the quality of information published on the Internet have been developed (e.g., Alexander and Tate 1999; Hawkins 1999). However, little is known about how training affects users' perceptions of the information quality of Internet-based information. The objective of the study reported in this paper is to improve our understanding of how training programs can change users' evaluations of Internet information quality.

This study is part of a research stream on information quality and Internet-based information. This study specifically examines the effect of information quality training on user perceptions of the quality of Internet-based information. The effects of this training on general perceptions of the quality of Internet-based information as well as on the quality of Internet-based information used to complete a specific task are examined. The study is built on a foundation of prior research examining the dimensions of information quality. The following sections of the paper (1) review the literature on the dimensions of information quality, (2) discuss the research questions and methodology, and (3) discuss preliminary results of the research.

Dimensions of Information Quality

Much of the early literature on information quality attempted to identify dimensions of information quality. While there were some differences in the proposed frameworks, information quality was generally recognized as a multi-dimensional concept. For example, Huh et al. (1990) define four dimensions of information quality: accuracy, completeness, consistency, and currency. Other taxonomies of information quality have been developed by Zmud (1978), Davis and Olson (1985), Madnick and Wang (1992), Fox et al. (1993), and Wand and Wang (1996).

Wang and Strong (1996) departed from earlier taxonomies of information quality by creating a framework of dimensions of information quality from the perspective of data consumers. Two surveys of data consumers were conducted to generate a comprehensive list of data attributes. Fifteen dimensions (encompassing 50 data attributes) were found. The dimensions are

believability, accuracy, objectivity, reputation, value-added, relevancy, timeliness, completeness, appropriate amount of data, interpretability, ease of understanding, representational consistency, concise representation, accessibility, and access security.

The Wang and Strong (1996) framework is applied in this study as a tool for measuring information quality. This framework was selected because (1) it provides a comprehensive look at information quality from the perspective of users of information, (2) it was developed using a well-established methodology that has been used to understand the quality of various products, (3) it provides a validated instrument for assessing information quality, and (4) it has been used successfully in applications aimed at identifying and solving organizational information quality problems.

Prior research in this research stream has examined differences in user perceptions of Internet-based information and information from traditional text sources such as books, journals, magazines, and newspapers. Results show that traditional text sources were rated as more accurate and more objective than Internet-based sources of information. Additionally, users found the reputation of traditional text sources to be better than Internet-based sources and found traditional text sources to be formatted more consistently. On the other hand, Internet-based sources were rated as more timely and as providing a better amount of information than traditional-text sources (Klein 2001).

Research Questions

Three research questions will be examined in this study.

1, Does training on information quality and the Internet affect users' perceptions of the quality of information available through the Internet?

2. Is there a difference between users' general perceptions of the information quality of Internet-based information and users' perceptions of the information quality of Internet-based information used for a specific task?

3. Does the effect of training on information quality differ for general versus task-specific user perceptions of the quality of Internet-based information.

The study will address these three research questions through a set of propositions linked to the fifteen information quality dimensions found by Wang and Strong (1996).

Research Methodology

This study uses a survey based on the Wang and Strong (1996) framework. This framework is an appropriate foundation for this study because we are interested in perceptions of the quality of information provided through the Internet from the perspective of the consumers (users) of this data.

The survey will be administered to 300 undergraduate students. Data will be collected from four groups of students as shown in the research design in Figure 1.

Group 1:	O1	X1	X2	O2	(Information Quality Training/Task-Specific Perceptions)
Group 2:	O1	X1		O2	(Information Quality Training/General Perceptions)
Group 3:	O1		X2	O2	(No Information Quality Training/Task-Specific Perceptions)
Group 4	O1			O2	(No Information Quality Training/General Perceptions)

O1 = Pretest collecting demographic data and data about prior use of the Internet to ensure that there are no significant differences between the four groups.
X1 = Information quality training.
X2 = Completion of research project using the Internet.
O2 = Completion of survey on perceptions of information quality of Internet-based information.

Figure 1. Research Design

The training in this study is meant to sensitize subjects to the possibility of information quality problems with Internet-based information. The training consists of a twenty-minute session in which students use cooperative learning methods to address four questions related to information quality and the Internet.

Students in the task-specific groups complete a standard research project on a topic related to telecommunications. The use of Internet-based information is a requirement of the project. The survey on perceptions of information quality asks questions about the extent to which the fifty data attributes identified by Wang and Strong (1996) describe Internet-based information.

Some Preliminary Results

Data from 75 subjects in Group 4 (untrained/general) and 57 of the subjects in Group 1 (trained/task-specific) have been collected and analyzed. Data collection for the remaining subjects is currently underway.

The preliminary analysis of data from the untrained/general and trained/task-specific groups shows some provocative results and raises questions that will be addressed through the collection of the remainder of the data. Results show that the trained/specific group has more favorable perceptions of information quality than the untrained/general group for ten out of the fifteen dimensions of information quality (significant at $<.05$ for nine of the dimensions and $<.10$ for the tenth dimension). This is somewhat contrary to the common belief that trained individuals will be more cynical about the quality of Internet-based information than untrained, naïve individuals. There are no significant differences between the two groups for the other five dimensions of information quality.

Conclusion

Naturally one must be very cautious about drawing firm conclusions from the preliminary results discussed above. Nevertheless, two possibilities emerge from this data. First, training designed to sensitize users to possible information quality problems and to help them assess the quality of Internet-based information may lead to more favorable perceptions of this information. Second, perceptions of the quality of Internet-based data on some specific topics are more favorable than perceptions of the quality of Internet-based information data in general. Analysis of the remaining data should support one of these possible explanations. Results of this study will help researchers and practitioners develop interventions to improve users' understanding of the quality of Internet-based information.

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