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The effects of information overload on reference librarians

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ABSTRACT

Nowadays, librarians work in information environments characterized by information overload. This study uses a qualitative-phenomenological method to examine the way in which reference librarians in academic libraries in Israel view and deal with the information overload phenomenon. Fifteen reference librarians responded to questions in semi-structured interviews. Four strategies of coping with information overload were identified: filtering, avoiding, satisficing and selecting items from the top of the list. Further, findings reveal that participants have not experienced the full impact of information overload. The research findings expand the existing body of knowledge about how librarians deal with information overload, and provide new information on the particular perspective of reference librarians in academic libraries, an aspect that has not been researched extensively to date. The findings are relevant to library managers, to directors of training programs for new librarians, to LIS educators, and to professional organizations.

1. Introduction

Since the 1990s, information and communication technologies, primarily the Internet, have developed in a way that currently enables—even encourages—easy, fast and relatively cheap production of information. We are consequently inundated by massive quantities of various types of information that are accessible via a variety of media (Feather, 2008; Webster, 2009). However, excessive information can be an impediment (Allen & Wilson, 2003; Bawden & Robinson, 2009) because the human brain is able to process only a limited volume of information within a given time (G.A. Miller, 1956). Large quantities of information are accessible but difficult or impossible to use in a timely way. This is the information overload (IO) phenomenon.

IO has no single definition (Bawden & Robinson, 2009; Eppler & Mengis, 2004; Jackson & Farzaneh, 2012). Wilson (1995) defined IO as a situation in which a person who searches for information knows that relevant information exists but is unable to use it due to lack of time. Other researchers have focused on the subjective individual perception of IO or the feelings it evokes. Savolainen (2007), for example, defined IO as the subjective experience of individuals who feel they lack the time required to effectively use the information available in a specific situation. Tidline (2009) maintains that IO occurs when an individual is overwhelmed by the quantity of available information. In the present study, IO is defined as the subjective experience of individuals who, while actively searching for academic information, are faced with overwhelming quantities of information and, as a result feel unable to handle it effectively.

Most studies that have examined the effects of IO have dealt with specific information users and fields, such as managers and organizational workers (Eppler & Mengis, 2004; MacDonald, Bath, & Booth, 2011; Oppenheim, 1997), consumers (Stanton & Paulo, 2012), school students (Akin, 1998a), researchers (Blom, 2011; Wilson, 1996), virtual interpersonal contacts on social networks (Jones, Ravid & Rafaeli, 2004), and updates on daily events (Savolainen, 2007). Very few studies have focused on information experts. Hardesty and Sugarman (2007)investigated the effect of IO on librarians, but did not examine it in the context of reference work. Brighton (2009) has explored IO within Cambridge University Library. Burns and Bossaller (2012) examined the effect of communication overload on reference librarians and Woolfson (2012) investigated the way information professionals in legal firms dealt with IO.

2. Problem statement

Due to the enormous amounts of information, accessible via various media, the question arises: How do academic reference librarians cope with IO? Buckland (2008) has suggested that the reference library has two purposes. The first is the search to provide basic facts for which the person needs an appropriate single source. The second is the search for contextual aspects of a person, period, event, or any other topic. In this search, the individual needs different reference sources such as encyclopedias, dictionaries, bibliographies, and biographical dictionaries. The current study focuses on academic reference librarians who perform a research job, trying to provide a comprehensive answer to

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their patrons, addressing the second type of Buckland's (2008) searches. This study investigates whether academic reference librarians feel they cannot present all the required information to their patrons because they lack the time. How do reference librarians deal with IO. Do they feel that they are distracted because they face too much information? Are they overwhelmed because of the quantity of information they encounter? Do they feel impeded in serving patrons because of this? Researchers assume that the phenomenon of IO may affect the way academic reference librarians serve library users; it is important to explore whether or not this is the case.

The research questions that underlie this study are:

- How do academic reference librarians perceive the information environment in which they work?
- How do they experience and interpret IO?
- How do academic reference librarians handle overload in search results?
- How do academic reference librarians perceive their current and future tasks?
- Do less experienced librarians perceive IO differently than experienced ones?

This research may expand the theoretical literature that deals with IO, as well as assist library managers, training directors, and LIS educators in understanding their employee perceptions, feelings, and professional surroundings regarding IO, and in designing current and future work settings and processes taking IO into account.

3. Literature review

3.1. Information overload

It has been argued that IO is not a problem because people tend to ignore information that is irrelevant to them or avoid excessive quantities of information (Savolainen, 2007). Edmunds and Morris (2000) explain that IO has become part of reality: people become used to this situation and cease to complain about it. Bawden and Robinson (2009) propose that even though IO is a fact, the extent of its effect is subjective. Eppler and Mengis (2004) and Jackson and Farzaneh (2012) elaborate on this by stating that feelings about IO result from a combination of factors affecting an individual's information processing. They claim that feeling overwhelmed gradually lessens in persons who frequently handle large quantities of information during searches.

An interesting paradox emerges from the literature and pertains to the relationship between IO and decision making. Hibbard and Peters (2003) assert that more information can weaken effective decision making. Other researchers (O'Reilly & Pondy, 1979) note that managers usually search more for information than needed. However, various studies show that when IO decreases, it increases decision makers' confidence (McKinnon & Bruns, 1992; O'Reilly, Chatman & Anderson, 1987), satisfaction (O'Reilly, 1980), and consumer comfort (Cranwell-Ward, 1987).

Dealing with IO can be discussed in relation to the transactional theory of stress and coping (TTSC). This theory may help us understand the relationships between stress factors and outcomes in the context of organizational and occupational environments (Barley, Meyerson, & Grodal, 2011; Cooper, Dewee, & O'Driscoll, 2001; Kahn & Byosiere, 1992; Sparks, Faragher, & Cooper, 2001). The transaction-based paradigm describes the stress as an interaction between a stimulating condition and the person's response to it (Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008, p. 419). In other words, stress is a transactional process in which stressors are the stimuli that create strain (Cooper et al., 2001). Thus, stressors are demands, events or situations that can create stress (Ragu-Nathan et al., 2008). In the present study IO can be considered as a stress that influences academic reference librarian. One of the aims of the current study is to focus on how they cope with this stress.

3.2. Strategies to cope with information overload

Miller (1960) found that people deal with IO by using certain adaptive strategies:

- omission, which recognizes that a person cannot consume everything, and therefore, he/she ignores some information;
- error, which means that an individual responds to information without giving it all due consideration;
- queuing, which is when the individual puts information aside till there is time to catch up later;
- filtering, which is similar to omission except that instead of ignoring some information, the individual gives priority to some information while ignoring other information;
- approximation, which pertains to the case where the individual processes the information with limited precision, running the risk of making mistakes;
- multiple channels strategy, which refers to when a person distributes information processing tasks;
- escaping, which occurs when the individual gives up the burden of attending to the information inputs; and
- chunking, which is combining some pieces of information together, instead of working on each one separately.

Omission and filtering strategies were found to be the most frequently used.

Rudd and Rudd (1986), who investigated IO in the context of library users, listed several strategies in dealing with IO. Library users could determine rules-of-thumb to select certain sub-groups of items from the overall available information. For example, this might mean choosing sources in a specific language, or using a minimal quantity of information to meet a requirement. This strategy is in line with the principle of satisficing (Simon, 1955). Another strategy could be to allocate a determined length of time to track the required information. Lastly, they could delegate the search to someone else, usually a librarian or another expert in the field.

Bawden and Robinson (2009) maintain that satisficing is a strategy commonly used to deal with IO during an active search for information. An information searcher who chooses this option selects a minimum number of information sources from those available, and uses information retrieved from these sources exclusively according to predetermined criteria. Savolainen (2007) named this strategy information withdrawal. Simon (1955) identified satisficing or the bounded rationality principle, as the strategy adopted in situations where decisions must be made but time and cost constraints prevent examining all existing options. To bypass these constraints, a minimum number of alternatives are examined in order to reach a decision that matches the defined/desired level of coverage.

Johnson (2014) suggested four general strategies for coping with information flood.

- Escape addresses the notion that things are too painful and difficult, thus individuals avoid information that would force them to make a decision in order to solve the problem.
- Attention focuses on the idea that individuals should understand when they should stop their search for information. Lee (2007) points out that information acquisition is costly, and requires attention. Skilled decision makers know when they have enough information and they satisfice, as they develop their own intuition on whether they have spent enough time and energy on a particular problem.
- Delegation proposes that IO can lead to decentralization of effort, meaning that an individual relies on others and gives them different tasks. Decentralization may result in more effective distribution of critical information.
- Creative destruction means that instead of being destroyed, information is removed from the processing queue and forgotten.