

The Information-Seeking Behavior of Millennials

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Abstract

This literature review presents the results of studies that examined the behaviors of Millennial generation students as they searched the Internet for information. High school and university students with varied Internet experience were examined as they searched for information on diverse topics. Students' preferred searching tools, motivation, searching methods, information literacy, and evaluation of information were examined. Findings suggest that Millennial generation students do not have the required skills to effectively search for and evaluate information. This may be due to their limited experience with information seeking and their views on what constitutes validity in information. Findings also point to the idea that instruction at secondary or earlier levels may be beneficial in teaching students how to seek information. The implications of these findings affect both teachers and librarians who strive to develop information-literacy among their students. Additional studies may be needed to further assess the level of students' understanding of information seeking behaviors.

The Millennial generation, defined as those born between 1982 and the early 2000s, have come of age during a time when information and technology is ubiquitous (Taylor, 2012). Millennials' experience with technology, particularly the Internet, has influenced how they seek information, not only for personal use, but also for academic use. Information seeking is one aspect of information literacy. According to the American Library Association (1989), information literacy is defined as being able to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (para. 3). Students cannot be said to be fully information literate if they do not have good information seeking skills. The research explored in this literature review shows that many Millennial high school and university students do not possess the necessary information literacy skills and therefore information seeking skills, that are needed at the secondary and tertiary school levels. This is a problem because information literacy skills are vital not only for success in academia, but also for success in the workforce and in life in general. The motivation of this literature review is to understand how Millennial students are seeking information and how information literacy, specifically information seeking skills, can be improved upon.

This literature review covers information found in ten peer-reviewed journal articles, which were selected for their focus on the information seeking behaviors of Millennials in high school and university. The literature is organized into three themes: preferred tools, searching strategies, and information literacy, which are then further broken up into smaller subsections. There is a particular focus on the Internet, as that has become Millennials' tool of preference when seeking information. The Internet is still a relatively new phenomenon in academia and it has changed how information is found and accessed, compared to earlier generations. Educators need

to understand how Millennials, and even younger students, use the Internet to seek information and how they can use the Internet to support information literacy skills.

Literature Review

Preferred Tools

The latest Pew Research Center overview on teens and technology use reported that 92% of teens go online on a daily basis, and 6% go online weekly, with only 2% going online less often (Lenhart, 2015). Considering this information, it is not surprising that Millennials prefer to seek information on a topic by using the Internet (Julien & Barker, 2009; Martin, 2008; Mizrachi, 2010; Rowlands et al., 2008; Salisbury & Karasmanis, 2011). Even when looking at preferences of earlier Generation Y college students, Weiler (2005) found that the majority of students preferred to go to the Internet first to meet their information needs. Interestingly, many of the students preferring to use the Web also preferred using the Google search engine to begin their information searches instead of library online catalogs, or databases (Julien & Barker; Mizrachi; Rowlands et al.; Salisbury & Karasmanis). Once on the Internet, students often tended to select a source or specific sites, such as Wikipedia, based on prior knowledge or use (Foss et al., 2013; Julien & Barker; Mizrachi).

Motivation. Millennials' preference of the Internet to meet their information-seeking needs is driven by several motivation factors. Most noticed across studies, was the concern by high school and college students over convenience, or the amount of time spent looking for information (Julien & Barker, 2009; Martin, 2008; Rowlands et al., 2008; Taylor, 2012; Weiler, 2005). Using the Internet as the main tool to meet information needs seemed to best fit students' lifestyles and demands: instant, on-demand, 24/7 access. This was evident in Julien and Barker's student interview statements regarding internet use for doing research. Natasha (pseudonym)

noted, “cause it takes less time”, and Robert (pseudonym) stated, “you can finish the task quicker” (Julien & Barker, p.14). Even when students were aware that information came from a questionable source (Wikipedia) or was of lower quality, they chose to use it anyway (Julien & Barker; Mizrachi, 2010; Rowlands et al.; Taylor; Weiler). Concern for accuracy and validity seemed to come second to effort and time spent finding information.

Influencers. Teachers, librarians, and professors were influential in millennial students’ research skill development and information-seeking behavior (Foss et al., 2013; Julien & Barker, 2009; Martin, 2008; Mizrachi, 2010; Willson & Given, 2014). As Julien and Barker noted from student interviews, research projects were significant in helping students gain research skills. In addition, students pointed to parents and friends as being influential in how they go about doing research (Foss et al.; Mizrachi; Salisbury & Karasmanis, 2011). Millennials relied on influencers to help them with the research process: keyword formulation, locating of sources, selection and evaluation of said sources, as well as basic computer use.

Information Seeking Methods

Although Millennials may be motivated and influenced to search for information by various factors, studies have found that the methods they use to gather said information may not be effective (Foss et al., 2013; Georgas, 2014; Julien & Barker, 2009; Rowlands et al., 2008; Salisbury & Karasmanis, 2011; Taylor, 2012; Wilson & Given, 2014). Several studies that focused on what students actually did when they sat down to seek information found that students preferred to search using natural language or simple keywords and phrases (Foss et al.; Georgas; Rowlands et al.). Simple Boolean operators were seldom or poorly used by students (Georgas; Salisbury & Karasmanis). Students placed an emphasis on the topic and did not deviate from natural language or simple keywords when searching. Many pasted the assignment

question or task directly into the search engine (Foss et. al; Julien & Barker; Rowlands et al.).

This blocked them from valuable information that could be accessed if they varied their searching with use of synonyms or made better use of Boolean operators (Foss et al; Georgas; Julien & Barker; Rowlands et al.; Salisbury & Karasmanis). In addition, it led students to feel frustrated when attempting to find the correct keywords to use, and when their topic did not yield many sources (Foss et al.).

How students navigate through the search results was also studied. It was found that few students went to the second or later pages when using Google or a federated search tool (Georgas, 2014; Rowlands et al., 2008). Students, also, preferred to power browse or quickly skim through content in order to acquire information quickly (Foss et al., 2013; Georgas; Julien & Barker, 2009; Rowlands et al.). The focus seemed to be on retrieving some quantity of information on a topic, regardless of quality. This led to Millennials feeling frustrated when they were unable to locate the necessary information when sorting through multiple results (Foss et al.; Salisbury & Karasmanis, 2011).

Due to the time period in which these students were born, their experiences with seeking information have influenced their view of information (Rowlands et al., 2008; Salisbury & Karasmanis, 2011; Taylor, 2012). Students do not seem concerned with the direct use of another's material by cutting and pasting or giving credit when paraphrasing (Rowlands et al.; Salisbury & Karasmanis). Students' familiarity and comfort with the Web causes them to perceive information as fragments where "each fragment of information appears to be as valid as any other" (Taylor; Literature Review section, para.4). Thus, they view seeking information as a product, not a process.

Information Literacy

Information literacy and library instruction. One way that many universities seek to improve incoming students' information literacy skills is by hosting library sessions intended to introduce students to the library as well as building information literacy skills, such as how to use academic sources like peer-reviewed journals. Research indicates, however, that these one-time library sessions may be too little, too late (Martin, 2008; Rowlands et al., 2008). According to Rowlands et al., "Emerging research findings from the US points to the fact that these [information literacy] skills need to be inculcated during the formative years of childhood: by university or college it is too late to reverse engineer deeply ingrained habits, notably an uncritical trust in branded search engines to deliver quick fixes" (p. 307). Mizrachi (2010) and Foss et al. (2013) found that students who had positive experiences with the library and/or library instruction in high school exhibited more information literacy than students who had not. In a study conducted by Martin at the University of Central Florida, attending a "one-shot" library session made no difference on whether students used more academic or non-academic sources in their research. Longer-term for-credit library courses, however, may affect information literacy more strongly than the typical one-time introductory library session (Martin).

Developing information literacy skills. Some researchers have a more positive outlook on the state of students' information literacy skills (Salisbury & Karasmanis, 2011; Wilson & Given, 2014; Mizrachi, 2010). Salisbury and Karasmanis found that students are not wholly without information literacy skills when entering university. The researchers found that a key way to improve information literacy at the university level was to build on students' existing knowledge. Wilson and Given indicate that students with more years of university experience were more skillful at information seeking. Similarly, Mizrachi, in her sessions with students

found that more experienced students tended to possess more information literacy skills than first or second-year students. So, while students may not come into university with the necessary information literacy skills, their skills can be improved upon with experience.

Evaluation. Evaluation of information is a major component of information literacy (American Library Association, 1989). At the university and even high school level, students are expected to be able to assess the sources they use for trustworthiness. Especially at the university level, professors expect students to use academic sources, such as books and peer-reviewed journals. Many students have trouble distinguishing between valid and invalid sources (Julien & Barker, 2009; Rowlands, 2008; Taylor, 2012) or do not fully understand the nature of scholarly literature (Salisbury & Karasmanis, 2011). Other studies suggest, however, that students do understand that academic sources are more credible, but that students prefer the convenience of Internet resources, such as Wikipedia (Georgas, 2014; Julien & Barker; Martin, 2008; Mizrachi, 2010; Taylor). According to Taylor, Millennials are more concerned about the time it takes to find information rather than the validity of that information.

Conclusion

It is evident by the literature reviewed, that despite national, state, and local mandated standards to address and develop information literacy skills among students, the actual skills acquired by millennial students are lacking. This generation of students has grown up surrounded by technology, yet the impact of said technology has not resulted in skilled information- seeking behavior. Clear themes were observed in the literature reviewed.

The Internet is Millennials' preferred tool to use to meet their information needs. They, also, prefer to use Google as their search engine. Many of them even see Google and the Internet as being one and the same. The motivation driving these preferences has to do with students'

concern over saving time and effort in their searches. In addition, it was found that information-seeking skill development and behavior was influenced by educators, parents, and friends.

The information-seeking methods of Millennials are lacking. They prefer to search for information using natural language, often pasting assignment questions or tasks directly in search engines. As a group, they seldom use Boolean operators to better define search terms and keywords. When results are generated, they prefer to power browse and skim through results generated to find information- a quantity of information, not focusing on quality. Thus, considering the basic information-seeking skills of Millennials, it is not surprising that they report frustration in finding the information they need.

Millennials are lacking the information literacy skills necessary to successfully find and evaluate information, or put convenience above the task of finding quality material. However, students who had positive library experiences and instruction prior to entering college exhibited more information literacy. The research indicates that information literacy should be fostered before students enter university and that it takes extensive remediation to foster information literacy in university students who have not received much prior instruction in these skills.

Recommendations

Based on the findings of this literature review, we see a need for educators to put greater emphasis on the actual process of information-seeking. Considering that the skills needed are not only applicable to information literacy, but to life in general, it is essential that searching skills be explicitly taught in the classroom. Especially, considering that one-shot library lessons on research skills have been found to be ineffective.

We understand that not all teachers feel they have the knowledge and experience to teach students how to properly search for and evaluate information, more so, since Millennials'

preferred tool for seeking information is the Internet. This is where collaboration with librarians could help bridge the gap found between Millennials' experience with technology and their actual information literacy skills. Through collaboration, teachers and librarians could plan for and teach information-seeking as an evolving process. Shifting the focus from the end product in assignments to the actual research methods would go a long way in helping students understand the importance of doing things right throughout process. Research challenges could be developed to address content and at the same time teach searching skills, step-by-step: from the development of research questions, to the creation of keywords, to the final evaluation and selection of materials. This would allow students practice in developing searching and evaluating skills and the opportunity to build on any existing skills they may have.

Encouraging skill development, and directly teaching how to search and evaluate information will lead to better understanding of content material. Collaboration between teachers and librarians is one significant way of getting students to improve on such skills. It will require more planning, time, and effort. However, such efforts are of crucial value. For students to be able to participate fully in modern society, they will need to leave high school with the basic information literacy skills to find, access, and evaluate information.

Limitations

It should be noted, that some of the studies reviewed were small in nature, consisting of 80 participants or less, thus results may not be generalized to the population at large (Foss et al., 2013; Georgas, 2014; Mizrachi, 2010; Taylor, 2012; Willson & Given, 2014). In addition, three of the studies were conducted in other English-speaking nations, where results might have been influenced by cultural and demographic differences. Julien and Barker's (2009) study was conducted in Canada, Salisbury & Karasmanis' (2011) study was conducted in Australia, and

Rowlands et al.'s (2008) study was conducted in the United Kingdom. Lastly, demographic data of participants was often not collected or mentioned in many of the ten studies reviewed. Thus, it is possible that participants were not representative of the general population of Millennials in the United States.

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