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What USC Upstate Alumni Say About Information Literacy in the Workplace

Andrew Kearns

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Librarians have rightly focused their efforts on helping students acquire the information literacy skills needed to complete academic research while in college, but what comes after? While the way we teach information literacy may be a good preparation for those students going on to graduate school, many of us teach in institutions where a majority of our students will be heading directly to the workplace after they graduate. What information literacy skills are most important in the workplace? What are the differences or similarities in the process of finding and using information? What can librarians do to help prepare these students to use their information literacy skills in a new context?

This investigation of the University of South Carolina (USC) Upstate alumni seeks to answer those questions and reveals important differences as well as a few similarities between information literacy as it is experienced in academia and the workplace. It was part of a sabbatical project undertaken in the spring of 2015 inspired by the Project Information Literacy study, *Learning Curve: How College Graduates Solve Information Problems Once They Join the Workplace* (Head, 2012). A key finding of that study is that while new employees often display great skill at finding information quickly through online search engines such as Google, employers often need a more comprehensive approach to workplace research that includes closer collaboration with co-workers, a greater variety of sources not limited to web searches, and the ability to dig deeper and better analyze information (p. 3).

I wondered how these issues played out in Upstate South Carolina among the alumni of my university. A strength of the Project Information Literacy study is the inclusion of both employer and employee viewpoints. Although interviews with employers are planned, the completed survey of USC Upstate alumni is interesting enough to report on separately. The survey was created on Survey Monkey and administered from May through September 2015 to alumni. Invitations to participate in the survey were included in an email bulletin and social media sent out by the Alumni Office. The survey was completed by 21 alumni (11 male and 10 female). Ten of them had graduated within the past five years; six were in entry-level positions at the time they took the survey, and 13 (61.9%) were in positions for which a Bachelor's degree was required. One of the respondents is a law school student; the others work in a variety of businesses, health organizations, and educational or government institutions. While the response was too small to be statistically significant, the responses seemed to confirm much of what was apparent in the literature: workplace information

literacy is situational and collaborative; people are a much more important resource in finding information; and there is a much broader range of purposes for seeking information and governing what the end result will be. It occurred to me that the results of this own survey would be more meaningful when compared directly with what the literature has to say about workplace information literacy. Therefore, with the exception of a short summary of the general scholarship on workplace information literacy, a selective discussion of previous scholarship has been interleaved throughout this article, giving context to the results of this survey. This investigation, therefore, will show important differences as well as similarities between information literacy in the academic and workplace settings, as well as put the results of a localized study into a broader perspective. The survey is included as Appendix A with a complete list of employers found in Appendix B.

The Scholarship of Workplace Information Literacy

Because the concept of information literacy has grown up in academia, centered in the disciplines of librarianship, and, to a lesser extent, education, it is easy to overlook the fact that the term has its origins in a workplace context: the 1974 report by Paul G. Zurkowski and the National Commission of Libraries and Information Science (Zurkowski, 1974). Zurkowski was particularly concerned for workers in the private service sector who were experiencing an "overabundance" of information brought on at least in part by computers and other technological innovations (p. 1-2). In this light, "information literacy" was meant as a way of describing the necessary skills and processes, including the use of technology, needed to "find what is known or knowable on any subject" (p. 23). This broader implication influences the classic definition of the term by the American Library Association's Presidential Committee on Information Literacy with its explicit connection to lifelong learning: "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information . . . Information literate people are those who have learned how to learn. . . They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand" (American Library Association, 1989).

Academic librarians have understandably tended to focus on the research and writing skills and processes necessary for academic research. Yet, information literacy as a concept has retained a broader association with analogous skills and processes required to find and use information in daily life and the workplace. In addition to lifelong

learning, information literacy has been associated with critical thinking, which has led to initiatives such as one focused on workforce preparation at the City University of New York (Gashurov & Matsuuchi, 2013). Information literacy also has been considered a core competency (Burnheim, 1992), and identified as a “21st century skill” (Partnership for 21st Century Learning). In spite of this history, information literacy as a term related to a defined concept is still relatively unknown outside the library and education disciplines. Nonetheless, the concept itself is widely recognized, if differently expressed, in the working world. Crawford and Irving (2009) argue that an “understanding of what constitutes information literacy” is more implicit than explicit (p. 3). This observation is also relevant to the finding by Head, Van Hoeck, Eschler, and Fullerton (2013) that formulations such as “solving information problems” and “research” resonate with employers even if they do not use the term “information literacy” (p. 92).

Significant research on information literacy in the workplace began in the 1990s with studies by Bruce, one of which maps seven ways workers experience information literacy (1999). In a recent comprehensive review of the literature on workplace information literacy, Lloyd (2010) traces two approaches: the first growing from the academic concept of information literacy as skills-based and focused on the individual, and the second considering information literacy as a socially enacted practice taking into account the “collaborative aspects of meaning making and information exchange” characteristic of the workplace (p. 72; see also Lloyd, 2012). While much research on workplace information literacy examines what might be described as “white collar” occupations, mainly in the education, information, and business sectors, Lloyd has done a number of studies of how information literacy works in such “blue collar” occupations as firefighting and culinary arts (Lloyd, 2005; Fafeita & Lloyd, 2012). Both of these approaches are important for understanding information literacy in the workplace, and even where this survey seeks to find how alumni perceive individual information literacy skills, the larger social context of information seeking and use in the workplace informs their answers.

Discussion

The following discussion of survey results is organized around four principal findings that are placed in the context of the literature: the situational and collaborative natures of workplace information literacy; the resources used in the workplace; and the use and acquisition of information literacy skills. Two sections on search strategies and the difficulties encountered by alumni round out the discussion.

Workplace Information Literacy is Situational

The situational nature of workplace information literacy was explored by three questions on the survey (Questions 7-9 in Appendix A), addressing the amount of time spent seeking information on the job, the kind of information being sought, and the categories of information needed.

Question 7, asking how much time alumni devoted to finding information to answer questions or solve problems on the job, is summarized in Figure 1.

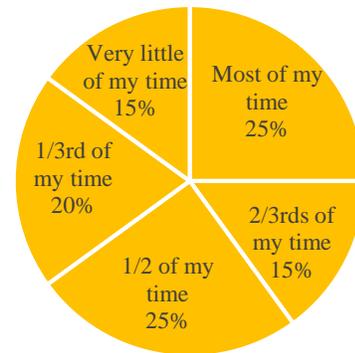


Figure 1. How much of your time is devoted to finding information to answer questions or solve problems? (n=20)

It is notable that 65% of respondents reported that half or more of their time on the job is devoted to finding information to answer questions or solve problems, a result that shows most alumni spend a significant amount of time on the job using their information literacy skills. This finding reflects a trend noted by Head et al. (2013) that “information work has become an identifiable and fundamental component of more jobs, whether one works in a cubicle, a restaurant, or a hospital” (p. 93).

Question 8 asked about the kind of information alumni needed to find on the job, giving five choices and instructing them to select all that apply. The answers to this question are likely to vary depending on the information needs of the particular jobs involved. The results for this group of respondents are shown in Figure 2.

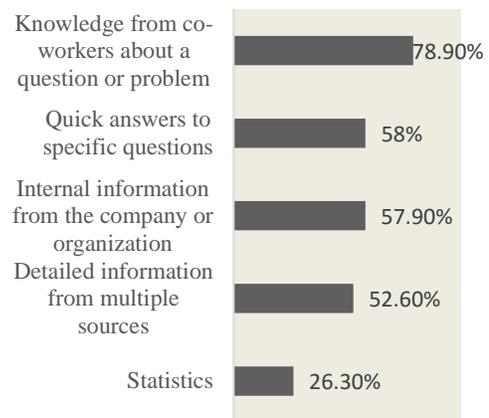


Figure 2. What kind of information do you need to find? (Select all that apply) (n=19).

That 78.9% need knowledge from co-workers is notable in light of the situational nature of information seeking in the workplace, where other people may be important sources of information, as well as the more collaborative nature of workplace research. Quick answers to specific workplace questions and internal information from the company or organization were also important for this group, while just over half had a need to assemble detailed information from multiple sources. While people as sources of information is sometimes important in academic research, it is far more common to emphasize information found in published sources, and the synthesis of detailed information from multiple sources takes on a greater importance.

The third question in this series asked what categories of information alumni needed (Figure 3).



Figure 3. Which categories of information do you need to find? (Select all that apply) (n=18).

An important finding here is that more than half of alumni needed information on internal procedures and processes of their employer. Beyond that, the category of information is related to the information needs of the company or organization, and a variety of responses is to be expected. It is notable that the need for scholarly and scientific information, which would have been emphasized in college, is rather low for this group of respondents. Of course, without further definition, categories like health and medicine, company and industry, financial, and legal information might include some of the scholarly literature or scientific studies.

While research resulting in reports and presentations does occur in the workplace, much work lacks the formal product that is often the goal of academic research. Moreover, the mission and aims of the organization often dictate the specific information needs, and therefore how information literacy is experienced in the organization (cf. Abram, 2013, p. 207; Crawford and Irving, 2009, p. 35; Head, 2012, p. 17). Thus, information problems in the workplace might take several forms, from simply needing facts or statistics related to a workplace question to a large-scale research project that seeks to improve or even invent new products or procedures. Workplace research may not seem as self-contained as academic research, bleeding into and influencing other projects. Nor is it always the case, as discussed below, that an individual will be engaged in the entire research process affecting a particular question.

Bruce's seminal 1999 study of knowledge workers at Australian universities is relevant here, as each of the "seven faces" she identifies is a product of the situational nature of information literacy in the workplace. Both the individual background and job-related information needs of workers influence each "face"—the way that technology, information use and a variable third element are combined to create a distinct experience of information literacy.

Zurkowski, Bruce, and others have emphasized the importance of technology in the workplace and its relation to information literacy. Bruce (1999) makes a particularly important formulation when describing the "intellectual manipulation of information" gained by using technology (p. 35). Abram (2012) makes a point with relevance to the intersection of technology and information literacy when he writes that "search, retrieval, and usage [of information] rarely suffice to create a competent and successful employee. Success in the workplace requires the integration of specific software, network environments, collaboration tools, learning tools, multiple content formats, and more" (p. 32). It is apparent from answers to several questions on the survey just how important technology is for communication in the modern workplace as well as finding and producing information.

Workplace Information Literacy is Collaborative

The collaborative nature of workplace information literacy is clearly seen in the response to Question 6 of the survey (n=20):

- Work as part of one or more designated teams in which all members have similar experience – 5%
- Work on my own with minimal consultation with co-workers – 10%
- Very little of my time – 15%
- Work on my own but have frequent consultations with co-workers – 40%
- Work as part of one or more designated teams with more experienced co-workers as team leaders or supervisors – 40%

In describing their work situation, 45% of respondents reported working as part of a designated team while another 40% said that they had frequent contact with co-workers. Email, discussion lists and meetings were among the most frequently used ways to communicate with co-workers. Nearly 80% said that they often need knowledge from a co-worker about a question or problem.

Bruce (1999) notes the importance of “social collaboration or interdependence between colleagues, rather than an emphasis in individual capability” (p. 35), and many others have echoed the importance of collaboration in the workplace (cf. Leavitt, 2011, p. 15; Sokoloff, 2012, p. 11). Lloyd has explored information literacy as a socially-enacted practice that depends on co-workers as important sources of information and processes (Lloyd, 2010, pp. 88-90). The prime importance of work colleagues as sources of information is also noted in studies by Crawford and Irving (2009, p. 34) and Eyre (2012, p. 345). Information literacy in the workplace is often experienced as part of a team, and in terms of workplace research, any individual may participate actively in only part of a complete process. Oman’s Information Process model for workplace research, for example, contains eight steps arranged in a circular pattern (Recognize, Find, Gather, Use/Evaluate, Organize, Comply, Measure, and Share) with the observation that “individuals may move in and out at any point in this process, or they may recycle at specific steps” (Oman, 2001, 40). A real difference between academic and workplace information literacy is just this: that in academia an individual will more likely than not be involved with an entire research process, whether working independently or in collaboration with others, whereas in the workplace individuals are more likely to be engaged in only part of a complete process.

Workplace Resources

Question 10 gave a list of resources and asked alumni to rate the frequency with which they used them on the job (Figure 4).

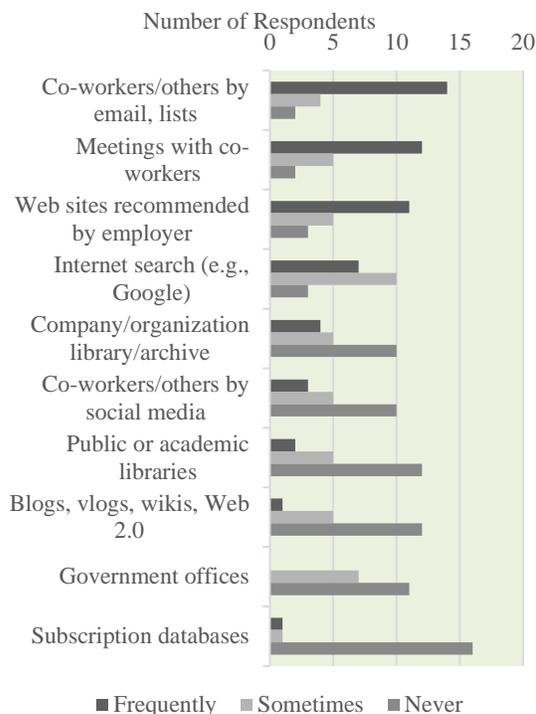


Figure 4. What resources do you use to find the information you need? (Likert scale: Frequently, Sometimes, Never) (n=20). The choices are presented in the order of the weighted ranking.

Given the collaborative nature of workplace research, it is not surprising that co-workers via email and meetings are first and second in these results. Web sites recommended or required by the employer and free web searching are also important for many alumni. Other resources would seem to depend more on the specialized needs of the position and the type of information sought. It may be significant that resources such as public and academic libraries and government offices are used at all. That social media and Web 2.0 applications are lower on the list than one might expect may have to do with company/organizational policies or established lines of communication.

Librarians may feel a pang of regret that subscription databases bring up the tail of this ranking, but it may be more significant that they appear at all, given the employers and information needs of this group of respondents. Also, without further definition of terms, it cannot be ruled out that “websites recommended by employer” might include some subscription databases.

These results are broadly consonant with Head’s (2012) finding that newly-employed graduates often used search engines and consultation with co-workers to solve many information problems on the job (p. 16).

Information Literacy Skills

When asked to rank a series of information literacy skills in terms of their needs on the job, alumni responded as in Figure 5.

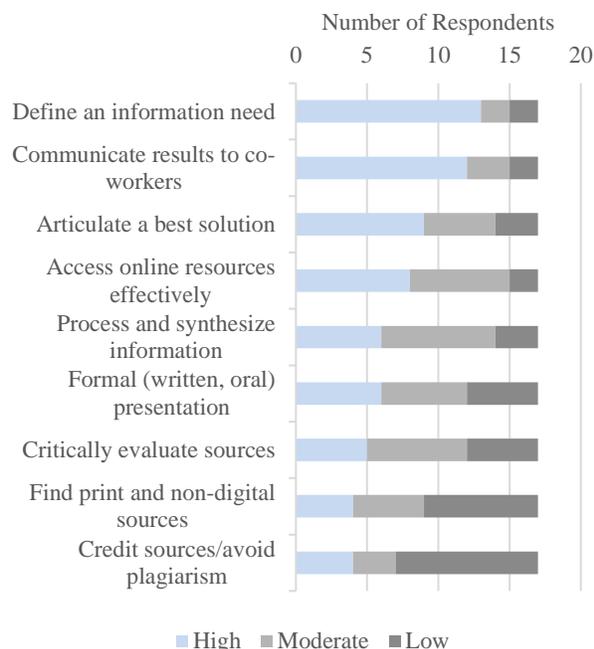


Figure 5. (Question 12.) Please indicate the level of importance (High, Moderate, Low) of each of the following skills in your current position. (n=17). Presented in order of weighted ranking.

It is perhaps not surprising that some of the skills most valued in academia - critical evaluation of sources, finding print and non-digital sources when needed, and guarding against plagiarism - are of lesser importance in the workplace. What is interesting is the importance given to defining an information need in relation to a problem or question, which librarians will recognize as an essential part of the research process. Interesting, because students largely do not seem to be aware of process, and it is difficult to imagine them articulating this on their own, without prompting. It is also interesting in light of a certain amount of research that suggests that defining an information need is less important in the workplace because on an individual level the need may have been defined by others before a task is assigned (cf. Lloyd, 2011, p. 282). But perhaps the very experience of working in teams has made the respondents in this survey more aware of the importance of that skill when given as a choice among several.

It is worth unpacking a little of what the literature says about specific workplace information literacy skills, mostly in the context of studies that explore what employers expect of their employees. Ali and Katz (2010) report on an Educational Testing Service study of which information and communications technology (ICT) skills employers

feel are important in new hires, in relation to the ICT literacy framework: “recognize and respect authorship, copyright, trademark, and confidential information; recognize and treat confidential or sensitive information appropriately; recognize and follow security procedures; recognize and respect legal and ethical considerations regarding information use; assure appropriate care of confidential information; refrain from using insensitive language with respect to culture, race, ethnicity, or gender while communicating information to an audience” (p. 9). In an analysis of descriptions for 21 business and finance occupations found in the U. S. Department of Labor’s O-Net, Klusek and Bornstein (2001) identified several important skills with information literacy components: active learning, active listening, critical thinking, complex problem solving, instructing, judgement and decision making, learning strategies, monitoring, speaking, and writing (p. 12-13). Sokoloff’s (2012) study of employers who hire recent business graduates noted necessary research skills for entry-level employees as including “the ability to work independently, quickly, and efficiently;” technological competence; “organization, presentation, communication, writing, and interpersonal skills;” “the ability to synthesize, summarize, and present information; ability to perform data analysis; and the ability to think critically and creatively about research topics and findings” (p. 11).

Some skills seem not too far removed from academic information literacy skills. Hoyer’s (2011) study of information “best practices” in the nonprofit sector, for example, mentions “recognizing information needs in non-traditional contexts, navigating community networks and relationships for the purpose of gathering new data, accessing and evaluating publications produced by the nonprofit sector, including grey literature, non-academic report writing and writing for funding applications, and presentation and communication skills for non-academic audiences” (p. 14). One can easily relate these skills to analogous skills in academic research, making due allowance for the difference in situation.

Head (2012) identifies three baseline information competencies expected by most employers at the recruiting stage (knowing how and where to find information online, using a search strategy that goes beyond Google and finding an answer on the first page of results, and articulating a “best solution” and conclusion from all that was found) as well as four “optimal” competencies that employers feel new college graduates rarely show: engaging team members during the research process, retrieving information using a variety of formats, finding patterns and making connections, and “taking a deep dive into the information reservoir” (p. 12).

These lists not only show the situational differences with which similar skills are defined in different contexts, but also the problem of the imprecise use of words like *skill* and *competency*. Clearly, using a Boolean operator strategically in a search phrase is a skill, but is “defining an information need” a skill, a skill set, or a competency? This needs to be taken into consideration when deciding how to

alert students to what alumni and employers say are important skills and competencies for the workplace.

Acquisition of Information Literacy Skills

Question 14 asked alumni to rank the importance of seven factors in learning information literacy skills they used on the job, as shown in Figure 6.

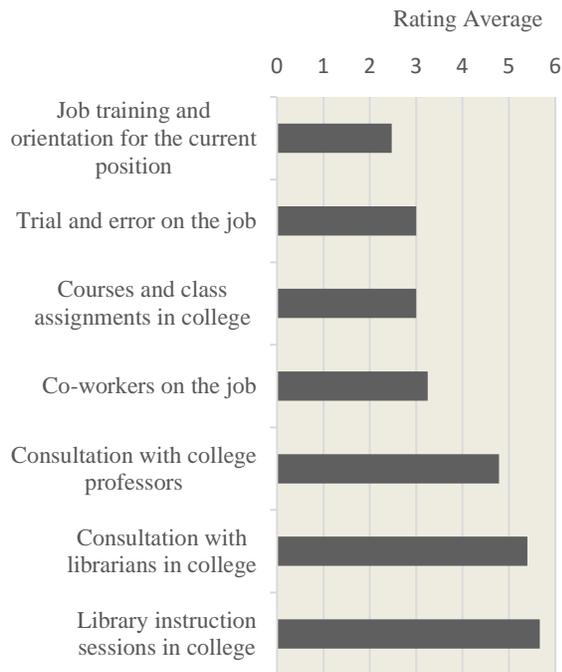


Figure 6. Please rank the importance . . . with which the following helped you to acquire the information seeking and use skills that you use in the workplace. (n=17). Ranked order.

It is not surprising that job training and orientation for the current position would be considered the most important means of learning information literacy skills used on the job. It is also not surprising that courses and class assignments in college rate highly. Nor is it very surprising that librarians and library instruction sessions, mainly associated with academic sources, rate low on the list. What is concerning is how high trial and error on the job rank and the relatively low position of co-workers, given the collaborative nature of workplace research. This mirrors a finding reported by Head (2012) that employers felt new employees did not consult with co-workers enough (p. 12), a situation that indeed may lead to an undue amount of learning by trial and error.

Few studies have asked employees directly about how they acquired their information literacy skills. Travis (2011) reports that alumni in her survey do attribute academic experiences such as writing research papers and using library resources as important in acquiring these skills (p.

26), and shows that students do value their college experience with librarians.

This survey did not directly ask alumni which skills they learned in college courses and assignments. Head (2012), however, did address that question, and it is worth noting that graduates in that study identified the critical evaluation of information and synthesizing large quantities of information as skills they had learned in college that carried over into the workplace (p. 20). Travis (2011) found that alumni attribute learning such skills as finding relevant information, critical thinking, evaluating information, problem solving, oral and written communication, and recognizing bias as things they learned in college courses (p. 27).

Search Strategies

A free-response question on the survey asked alumni to “briefly describe a search strategy (e.g., the method or steps) you used to solve a recent information problem,” in order to get an impression of the kind of search strategies used on the job. The answers to this question bring the collaborative and situational nature of information seeking in the workplace to the forefront.

- Working as part of a team, some respondents emphasized the need to ask the manager or team members for help in problem solving, reinforcing the importance of people as an information source:
- “When I need to solve a problem I will think it out myself but if I do not come t[o] a conclusion I will ask a supervisor or the big manager. My co-workers and I are a team and we will work together to figure out the problem.”
- “Encounter[ed] a code issue I d[idn’t] know how to work around. Ask[ed] team lead[er] for guidance. Team lead[er] pointed me to a coworker who was well versed with that particular code function. Conversd with coworker over email for general details. Met with coworker at his desk to go over specifics. Employed information received from my coworker to address my problem.”

Others discussed knowing the proper resources to use, such as educational web sites and internal company resources:

- “I needed to find the brand standards for a section of our cafe. I went to our company’s internal site and found the info[r]mation[.]”
- “I was trying to teach my students to annotate text. I went on the internet to search for lesson plans.”

One implied the importance both of online research and contact with people:

- “Needed to find specific specifications for a competitor and did research through online

sources, personal interviews and actually operated the equipment personally.”

Alumni on Difficulties and Preparation

A second free-response question asked, “What difficulties do you encounter when seeking and using information on the job? How do you overcome them?”

Difficulties experienced by this group of alumni include language barriers, job-related information changes without clear notification, needing to locate a specific person out of state, time constraints, finding lesson plans for college, locating company documentation, communication issues in a building with little technology, and making sure a customer understands all of the information related in an exchange.

Overcoming difficulties often involves the advice and support of other people, especially co-workers, but also a willingness to take as long as needed to get the job done. One respondent mentioned dealing with a “weak” search engine by learning to refine searches.

The challenges and means of overcoming them related by USC Upstate alumni reflect those identified by Head among recent college graduates, who identified three particular challenges specific to the workplace: an increased sense of urgency, research tasks assigned with little structure or direction, and information seeking and use that is highly contextual and fundamentally social (Head, 2012, p. 17). Participants in that study were also likely to find co-workers or others who could help with information problems or teach processes for completing research tasks (Head, 2012, pp. 21-23).

The final question asked, “How might college better prepare you for information seeking and use in the workplace?” Although only about half (n=11) of the respondents answered this question, and some responses were off topic, several answers were interesting. They suggested a business etiquette course, required courses in each field of study to teach these skills, and better career guidance (especially as regards the communication between employers and educational institutions). One suggested more assistance in research classes, and another suggested more practical application of research skills: “Don’t make everything school related. Treat it like a job project.”

What Can Librarians Do?

This last observation takes us back to one of the questions I posed at the beginning of this article: What *can* librarians do to help prepare students to use their information literacy skills in a new context in the workplace? Treating an assignment like a job project is, of course, more realistic for disciplinary faculty responsible for an entire course than for librarians doing one-shot sessions, though for those teaching information literacy courses it is certainly possible. But the larger question raised here is one of making students aware of the nature of workplace information literacy, what information literacy skills

learned in academia transfer to the workplace, and giving them practice with workplace situations.

Making students aware of workplace information literacy is probably the easiest, and for most of us, the most important of these tasks, both due to time constraints and the problems inherent in the transfer of information literacy skills between academia and the workplace.

Several studies have shown that such transfer may be limited because of differences in context (Eyre, 2012; Ferran-Ferrer, Minguillon, & Perez-Montoro, 2013) and point to the need to broaden the way information literacy is articulated and taught to students (D’Angelo, 2012; Hoyer, 2011). While confirming that people who develop information competency in one context will also be information competent in other contexts, Ferran-Ferrer et al. (2013) observe that transfer of information competencies occurs on the basic level of searching for and retrieving information, with more advanced skills being not directly transferrable: assessing the quality of information resources, assessing which resources are best for each situation, how to manage information resources, and how to respect ethical issues when using information resources (p. 1119).

These findings are consonant with the educational literature on transfer of learning, which supports the notion that transfer occurs on only a basic level. Haskell summarizes the issues involved with transfer of learning, including problems of definition and conceptualization. While the prognosis for transfer of learning beyond a basic level is often discouraging, he notes the importance of theoretical knowledge in aiding transfer (Haskell, 2004, par. 51-3). The key seems to be recognizing that skills are not confined to the context in which they are learned. The way information literacy is taught often precludes students recognizing this fact. The paradox for librarians is that the best practices for one-shot library instruction sessions (occurring at point of need, focused on an assignment, learning skills through hands-on experience) seem opposed to best practices for broader information literacy instruction (scaffolding the development of skills pegged to a broader concept across a course or curriculum).

This goes some way to explain why transfer of information literacy skills between academia and the workplace is often problematic, and is exacerbated by the different goals and needs of each setting. For example, Ali and Katz (2012) found that the issues of ethical use of information and confidentiality, especially prized by employers, were less emphasized by business school faculty (pp. 11-12). Eyre (2012) makes the point that the traditional teaching of information literacy skills in academia, focused as it is on academic sources and needs, reinforces the dichotomy between “theory” and “practice,” thus hindering transferability (p. 346). Hoyer (2011) observes that an emphasis on the use of specific tools and skill sets drawn from an academic context “will not be adequate in a setting where social relationships are important for finding and evaluating information. Most students will not identify the

need to transfer these competencies to their new context or be able to recognize their application” (p. 12).

It would seem that teaching information literacy as a process and giving students a model of that process would help in emphasizing the transferability of information literacy skills to new contexts. USC Upstate has long used a reduction and student-friendly adaptation of the *Information Literacy Competency Standards for Higher Education* (ACRL, 2000) as a model of the research process for our first-year students. Other models are possible, including one based on the new *Framework for Information Literacy for Higher Education* (ACRL, 2015). Beyond a basic model of process, reminding students of research in daily life and the workplace and how such research relates to academic research is important, and can be addressed on a number of levels within an information literacy program. For librarians teaching credit courses, bringing workplace information literacy into the course curriculum is desirable. For the credit course I teach, I assign the summary of the Project Information Literacy report (Head, 2012) and an infographic of the results of my own survey. This gives students both a national and local context for knowing how they may experience information literacy in the workplace.

Conclusion

The responses of USC Upstate alumni to this survey generally support the findings of the literature on workplace information literacy, with some interesting variations noted above. More importantly, they give a local

perspective on that literature for librarians and classroom faculty at USC Upstate, making the literature more useful as a guide for approaching the topic of workplace information literacy. Their answers show the situational and collaborative natures of workplace information literacy while giving rich detail in the kind of information they seek, resources they use, and the skills they think are important. It would be valuable to follow up and expand on these findings in future studies, and it would also be important to add the perspective of employers.

There is much here, too, that can be used as a way to make students more aware of the future importance of the information literacy skills they develop in college. In addition to the above-mentioned steps librarians can take, the testimony of peers collected in a survey such as this one can be a powerful way to do this. I close with the response of one alum, who, to the question about college preparation, commented on the general importance of information literacy skills: “It is very paramount and critical. It makes work easier in the work place and you do not have to waste time doing some form of training that aids information seeking.”

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Appendix A. Survey Questions: Information Use in the Workplace

Welcome! If you have graduated from [institution name] within the past three years and are in an entry-level position, you are invited to participate in this survey of information seeking and use in the workplace. The purpose of this survey is to learn more about your workplace experience with information seeking and use in order to help us better prepare students for their future careers. "Information seeking and use" is understood to mean a range of activities from informal seeking and communicating answers to workplace questions to full-fledged research projects. It is assumed that information seeking and use in the workplace may be done individually, but is often done in collaboration with co-workers or in designated teams.

The results of this survey may be published. Most data will be reported in aggregate and comments will be reported anonymously. Your answers will not be reported directly to your employer. If you have any questions, please feel free to contact me.

Thank you for your participation!

(Part One. Demographic Information)

1. Gender: Male/Female
2. When did you graduate from USC Upstate? (free response)
3. What company or organization do you currently work for? (free response)
4. Is your current job considered an entry-level position? Yes/No
5. Did the requirements for this position specify a Bachelor's degree? Yes/No/Don't Know

(Part Two. Information Seeking and Use)

6. Which of the following best describes your work situation?
 - a. I work on my own with minimal consultation with co-workers.
 - b. I work on my own, but have frequent consultations with co-workers.
 - c. I work as part of one or more designated teams with more experienced co-workers who act as team leaders or supervisors.
 - d. I work as part of one or more designated teams in which all members have similar experience.
 - e. None of the above.
7. How much of your time is devoted to finding information to answer questions or solve problems?
 - a. Most of my time
 - b. Two-thirds of my time
 - c. Half of my time
 - d. One-third of my time
 - e. Very little of my time
8. What kind of information do you need to find? (Select all that apply)
 - a. Quick answers to specific questions.
 - b. Detailed information from multiple sources to provide solutions to problems or to answer a research question.
 - c. Statistics.
 - d. Knowledge from co-workers about a question or problem.
 - e. Internal information from your company or organization about a question or problem.
9. Which categories of information do you need to find? (Select all that apply)
 - a. Company or industry information.
 - b. Financial information.
 - c. Health and medical information.
 - d. Legal information.
 - e. Legislative and regulatory information.
 - f. Scholarly and scientific information.

- g. Other government information.
- h. Information from non-governmental organizations.
- i. News.
- j. Statistics.
- k. Internal company/organization procedures and processes.
- l. Other (please specify) (free response)

10. What resources do you use to find the information you need? (Likert scale: Frequently, Sometimes, Never)

- a. Internet search (e.g., Google).
- b. Specific web sites recommended by employer.
- c. Subscription database or service (e.g., Lexis-Nexis, CINAHL, etc.).
- d. Company/organization library or archives.
- e. Public or academic libraries.
- f. Government offices.
- g. Blogs, vlogs, wikis and other Web 2.0 resources.
- h. Meetings with co-workers.
- i. Co-workers and others by e-mail or lists.
- j. Co-workers and others by social media.

11. Briefly describe a search strategy (e.g., the method or steps) you used to solve a recent information problem. (free response)

12. What difficulties do you encounter when seeking and using information on the job? How do you overcome them? (free response)

(Part Three. Information Seeking and Use Skills)

13. Please indicate the level of importance of each of the following skills in your current position. (Likert scale: High importance, Moderate importance, Low importance)

- a. Define an information need in relation to a problem or question.
- b. Access online resources through effective search techniques.
- c. Find print and non-digital sources when required.
- d. Critically evaluate sources of information.
- e. Process and synthesize information from sources.
- f. Articulate a best solution or answer to a question based on sources found.
- g. Credit sources and avoid plagiarism.
- h. Communicate results to co-workers and members of the team.
- i. Formal (oral, written, multimedia) presentation of results to others.

14. Please rank the importance, with 1=most important and 7=least important, with which the following helped you to acquire the information seeking and use skills that you use in the workplace.

- Job training and orientation for your current position.
- Co-workers on the job.
- Trial and error on the job.
- Courses and class assignments in college.
- Library instruction sessions in college.
- Consultation with college professors.
- Consultation with librarians in college.

15. How might college better prepare you for information seeking and use in the workplace? (free response)

Appendix B. Employers of Survey Respondents

- | | |
|---------------------------------------|---|
| Ace Bakery | School District of Oconee County (SC) |
| Anson County Schools (NC) | SHIFT Marketing Communications (Greenville SC) |
| Bobcat of Spartanburg (SC) | Sisters of Charity Providence Hospital (Columbia, SC) |
| Equifax (Greenville, SC) | Sodexo |
| Greer Commission of Public Works (SC) | Tennessee Technological University (Cookeville, TN) |
| Hubbell Lighting (Greenville, SC) | Total Storage Services, LLC (Roebuck, SC) |
| Limestone College (Gaffney, SC) | United States Army |
| Onward Healthcare | Walmart |
| Palmetto Health (Columbia, SC) | WellStar Health Systems (GA) |
| QS/1 Data Systems (Spartanburg, SC) | |