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Posing the million-dollar question: What happens after graduation?

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Abstract

This paper reflects on the increase of information literacy research about the workplace and lifelong learning during the past 10 years. Librarians have long held that lifelong learning is the goal of information literacy instruction and training, but until the last decade, there has been a paucity of research about the information-seeking behaviour of students after they graduate. The origins and drivers of this shift in the research agenda are examined, drawing on US research studies by Project Information Literacy (PIL), and related research from around the world. Key takeaways from this body of work are discussed in addition to the implications findings have for academic librarians teaching and working with university students. Directions for future research are identified and discussed.

Keywords

workplace information literacy; lifelong learning; undergraduate students; university graduates; US

1. Introduction

During the past ten years, there has been an appreciable increase in research on how people find and use information in their professional and personal lives (Forster, 2017). This growing strand of research has expanded and improved the educational scope and reach of the information literacy field in fundamental and important ways.

In some of the most revealing of these studies, researchers have gone beyond formal learning settings to investigate how students solve information problems after graduation, not only in the workplace, but also within their communities and their personal lives. The information gleaned from all of this new research has given librarians and educators a much deeper understanding of how the research training that students receive during their university years may be transferred and adapted to their post-graduation lives.

In this paper I reflect on the research we have conducted at Project Information Literacy (PIL) on workplace information literacy and lifelong learning. I identify the origins of our research and discuss two influential drivers from higher education that have informed our studies. The primary contribution of this paper is to highlight major findings from PIL's research as well as those from related studies. Questions for the coming decade for advancing the development of the information literacy field and improving student instruction are also introduced.

2. Origins and inspirations

Information literacy has been defined as the competencies for finding, retrieving, evaluating, selecting and using information sources (Bawden, 2001). At face value, this definition appears straightforward. But discussions and debates about the scope of information literacy have coursed through the scholarly literature for decades – and are likely to continue. In the UK, for instance, Forster (2015) has

claimed that information literacy instruction needs to include the outcomes of information seeking – not only the research steps taken. McNicol and Shields (2014) have argued that the field needs broadening to take into consideration the roles students play as producers of information as well as consumers.

Meanwhile, in the US, the leading professional organisation for academic librarians has redefined information literacy, replacing their 2000 information literacy standards with a new framework that uses metacognitive understandings of information use and creation (Association of College and Research Libraries, 2015).

Despite a propensity for endless definitional fine-tuning, librarians have long maintained that information literacy, and the skills that foster it, are essential for living in a democracy. When defined in this context, the need for information literacy is compelling, especially today.

Staying informed has become more challenging than ever before. The fluid workplace requires employees to be more professionally nimble more than at any time in history, not only to stay competitive but simply to also remain employable. Citizens need to stay current with the changes happening around them to vote and otherwise engage in civic life. Moreover, pathways to, and the uses of, information have become far more complex. Together – the ubiquity of information technology, the proliferation of digital information resources, the rise of fake news, and the decreasing shelf life of expertise – have profoundly changed the possibilities for lifelong learning, and how information for all purposes is gleaned.

There are countless situations in a lifetime when people need to navigate an infinite universe of information to manage the myriad details of modern living. Their proficiency with information seeking – finding, exchanging, retrieving, applying, and evaluating information – will determine, in the large part, whether or not their efforts will succeed.

Regardless of the stark realities of living in the digital age, the large majority of scholarly research on information literacy has focused on formal learning environments – schools, colleges, and universities. Only a handful of articles in library and information science journals have delved into the topic of workplace information literacy or lifelong learning (Lloyd, 2010; Lloyd & Williamson, 2008).

Beyond the early work of Christine Bruce or Bonnie Cheuk, few studies have developed models of information seeking processes in the workplace (Bruce, 1997, 1999; Cheuk, 2000). Even fewer have attempted to link information literacy training during university to lifelong learning outcomes – even though this connection is the goal of information literacy instruction (Holden, 2010; Scales & Lindsay, 2005).

Numerous scholars have criticised the information literacy field's confinement to the educational realm (Hultgren & Limberg, 2003; Inskip, 2014; Kirton & Barham, 2005; Lloyd, 2010; Lloyd & Williamson, 2008; MacMillan, 2014; McClure, 2013). Yet an empirical understanding of how graduates apply information literacy competencies in their personal and professional lives has remained largely a mystery. That is, until recent years.

In the remainder of this paper, I describe two influential factors that have informed our research, and highlight what we have learned about recent university graduates and their post-university information practices and identify opportunities for future research.

2.1 Catalysts and drivers

I am often asked why I study the research habits of university graduates. In response, I borrow a term from business – *drivers* – to explain my research efforts at PIL. *Drivers* are defined as a whole range of internal and external factors that can dramatically cause a business to increase its value, improve its processes and ultimately, thrive and succeed (Berry, 1999).

At PIL, there were two external drivers that served as catalysts for our research about the workplace and lifelong learning: (1) the growing emphasis on post-university employability, and (2) the shortage of research data on students' continued learning practices once they graduate.

These two drivers coexist in the broader discourse of higher education – but often have stakeholders in different camps with different objectives. I have used the productive tensions between these perspectives to look for research gaps and opportunities. The first driver – the growing emphasis on employability – was the impetus for our workplace study.

3. Post-university employability

Skyrocketing costs of higher education, heavier student debt and a sagging labour market have created a groundswell of discussion and debate about the economic value of higher education, especially in the UK and US (National Committee of Inquiry into Higher Education, 1997; Stokes, 2015; Zakaria, 2015). Much of the research that supports this dialogue focuses on employability and the financial rewards of a baccalaureate degree.

The Pew Research Center, for instance, has found that university graduates in the US earn twice as much over a lifetime than do high school graduates. The real gains, however, come from the type of degree a student is awarded (Fry, 2011; Pew, 2014). The baccalaureate degrees with the greatest financial rewards in the US, according to the US Census (2015), are in science, technology engineering and mathematics (STEM).

Research like this is useful for quantifying post-university career progress. But the data presented only reveal so much. Instead, a study by the National Association of Colleges and Employers (NACE) more closely aligns with the value of information literacy competencies at hiring time. In this study, employers gave the most weight to university recruits' ability to obtain and process information for planning and making decisions (NACE, 2015).

Similarly, a few years later, the American Association of Colleges and Universities (AACU) found that critical thinking, communication and problem-solving skills were equally important to making hiring decisions within an organisation as was field of study (AACU, 2013).

Even though these studies signal a trend toward employers placing a higher premium on information literacy competencies, the findings are limited in their usefulness. None of the works tells how – and which – information skills are put to use by new university employees once they start their careers. Filling in this missing piece became the rationale for PIL's workplace study.

3.1 PIL's major findings: The workplace

Between 2011 and 2012, PIL conducted a qualitative study about the information-seeking behaviour of US undergraduates as they make the transition from campus to workplace (Head, 2012). My research team and I investigated this topic from two perspectives: from that of 23 US employers who hire today's graduates, and from the experiences of 33 recent graduates from four institutions who had just entered the workplace.

We found a wide discrepancy between the information competencies employers say they need, and the skills that recent university graduates demonstrated in the workplace once they were hired. Nearly all of the employers we interviewed expected candidates to be able to search online, a given for a generation born into the internet world.

Employers, however, were dismayed to find that most of their new employees were tethered to their computers. Most young people, they said, relied on search engines to find the quickest answer to an information problem. But employers needed to hire patient and persistent researchers. When making hires, they looked for curious and engaged graduates who may have started with Google but then retrieved additional information in a variety of formats and identified patterns from an array of sources.

When we interviewed recent graduates, we heard a different story. Responding to the workplace's palpable sense of urgency, young employees assumed that their employers wanted immediate responses to information problems they had been assigned. This led them to pore over results from search engines, looking for "the answer". Most graduates said they integrated competencies from their university training for extracting content, evaluating its credibility and managing published content they had found online.

Only slowly, and over time, did graduates come to realise that their information-seeking strategy got them only so far. Most had begun to develop adaptive strategies for meeting the highly individualised demands of their workplace. This meant going beyond computers to cultivate social capital within the workplace. In this sense, graduates were just beginning to build a small community of practice. By assembling a network of one or two co-workers at a time, they were able to learn conceptually about the norms, practices and preferences of the organisation where they worked.

3.2 Workplace research: Looking ahead

PIL's results confirm what many information literacy researchers have known for some time: the information skills students cultivate through traditional assignments – writing essays based on library research – are far different from the information skills needed in the workplace where driving productivity for collective companywide goals is essential (Lloyd, 2013, O'Farrill, 2010).

Moreover, as other researchers have learned, we also found information problems in the workplace are more ambiguous, ill defined and messy (Hepworth & Smith, 2008; Kirton & Barham, 2005; Weiner, 2011). Solving workplace information problems requires the use of an iterative and contextual information-seeking process (Cheuk, 2000, 2008; Lloyd, 2009, 2010; O'Farrill, 2010).

Where PIL explored new territory is in our focus on how recent graduates are bringing new research habits into the workplace. Specifically, these findings suggest that the traditional research competencies – the use of non-digitised sources – may be eroding, and even disappearing, as each new batch of born digital graduates enters the workplace with strong preferences for online research, mobile devices, social media and Google.

For instance, one employer we interviewed at a defence contract company told us that he had hired a recent graduate who preferred to use social media sites like Facebook to crowdsource solutions to information problems he had been assigned. Another said that a graduate she had hired at a history museum used his iPhone camera to snap photos of rare manuscripts so that he could get a little work done later on while he was on a weekend ski trip.

Tales from the field such as these underscore a dramatic shift in workplace information practices, and they also raise additional research questions for the coming decade. These questions are especially interesting as mobile technologies become ubiquitous in students' and in all of our lives.

What role, for instance, do mobile devices or social media networks play in the workplace research process? What impact do social media networks have on the solutions that young employees present to their co-workers and supervisors? In a broader context, how do today's young employees collect expertise from co-workers to solve the pressing information problems that come across their desks each day?

At the same time, questions surround employers' growing expectations in hiring information-literate young graduates. For instance, what information skill sets, if any, do these graduates list on their résumés? How do they define and describe their own information literacy competencies and expertise? How do employers interpret such résumés and ask about these skills during an interview, if they do at all?

Answers to questions like these would provide insights to stakeholders – especially librarians and educators – looking for ways to improve teaching methods so they can better prepare information-literate students for success in the workplace of tomorrow.

4. Continued learning after graduation

The second driver that I have identified – the shortage of data on students' continued learning practices once they graduate – was the catalyst for our research on lifelong learning. This two-year study focused on what kinds of information sources recent graduates used for continued learning in the workplace, personal life and their local communities.

Even though immense amounts of data are collected from university students at most institutions, we soon learned that this data stream slows to a trickle once they graduate. Beyond the efforts of alumni associations to track former students' whereabouts for promotional and fundraising purposes, or campus career centres to monitor where graduates are employed to develop internship opportunities, the data collected tells little about how graduates continue to learn after graduation.

The Gallup-Purdue Index Report sheds some, but very little, light on this inquiry. In this ongoing study, the effort has surveyed tens of thousands of alumni and asked whether their university education was worth it (Gallup, 2014, 2015). They have found graduates who had positive formal or informal mentoring relationships during university were almost one and a half times more likely to report contentment in their post-university lives (Gallup, 2015).

Results such as these are useful for thinking about some of the outcomes, other than salary, of a university education, but their greatest utility may be in the additional questions they raise and do not answer. At PIL, I found myself asking: what tangible critical thinking and information-literacy skill sets university students take with them and adapt as continued learners after graduation? This inquiry was the basis for PIL's lifelong learning study.

4.1 Major findings from PIL about lifelong learning

Between 2014 and 2016, PIL conducted a large-scale study about the lifelong learning habits – information needs and sources consulted – of relatively recent university graduates in their personal and professional lives (Head, 2016). We defined lifelong learning as being the activity of ongoing learning for improving skills and acquiring additional knowledge or information that can occur in brick-and-mortar settings as well as online (Head, Van Hoeck, & Garson, 2015).

Quantitative data was collected from 1,651 online survey respondents who graduated from one of 10 US colleges and universities between 2007 and 2012. We also conducted 126 telephone interviews with a subset of the same sample.

We found most of the graduates we studied were caught unaware by all they still needed to learn in their personal lives once they had completed their education. The majority had needed to learn an array of life skills just in the past year: money management, making household and car repairs, advancing their careers, building social networks and communicating better in daily life.

In the workplace, more than anything else, young graduates sought affordable professional guidance. Most needed tips for climbing to the next rung of their career ladder. Almost half wanted to improve their interpersonal communication skills in the workplace, especially when it came to delegating tasks to older workers and negotiating for resources and salary increases.

Comparatively fewer graduates needed to learn about the community in which they lived. Instead of researching local civic causes they could become involved in, graduates spent most of their time learning about the necessities of life in their neighbourhood, such as finding a good restaurant or a cinema within walking distance.

Notably, graduates consulted friends, family and colleagues almost as much as the internet for tackling their information problems at home or work. When making “big decisions”, like buying a house, changing jobs or starting a family, they first turned to friends and family – trusted confidants. To a slightly lesser extent, they placed a high premium on curated information collections that were organised and kept up-to-date, such as libraries, museums and bookshops.

As a whole, graduates reported that they were discerning about selecting the information sources they relied on. On average, three-quarters of them believed that university had taught them the information literacy skills they could use, apply and adapt in their lives now. These skills included online searching, extracting and interpreting meaning from results as well as applying information as a solution.

At the same time, however, we were struck to find that far fewer graduates – one in four of the sample (27%) – reported that their university years had enabled them to develop the ability to frame and ask questions of their own as independent thinkers.

These findings suggest that graduates think they are coming out of universities as competent information seekers and information processors. But they also underscore a disturbing trend: universities are failing to prepare lifelong learners who consider themselves adept at formulating their own questions, the ones that may matter the most in their lives. Most graduates were far more skilled responding questions they had been assigned rather than coming up with their own set of questions.

There is a common thread running through PIL’s workplace and lifelong studies. Our findings suggest that if graduates were more adept at asking questions of their own then they might go deeper as information seekers to understand the layers beneath the task at hand. In turn, these skills may result in depth rather than speed in information-seeking styles we found they often exhibited in the workplace and in their personal lives.

4.2 Lifelong learning research: Looking ahead

In the larger context, PIL’s lifelong learning study validates claims made by other information literacy researchers studying lifelong learning in different contexts: information literacy is a sociocultural practice in which situational aspects – cultural tools and activity – shape learning and information-seeking behaviours (Lloyd, 2010).

We also found, as have other researchers, that people learn through one another as well as from information norms and cues of a given setting (Crawford & Irving, 2009; Eraut, 2007; O’Farrill, 2010; Somerville, Howard & Mirijamdotter, 2009; Weiner, 2011). When they interact, exchange and join in, people experience deeper learning of concepts or skills since the sharing process “stirs in” to what they already know (Kemmis et al., 2017).

Similarly, in our studies, we found graduates were just beginning to understand the value of learning through people around them and leveraging their expertise. Many were working to expand and improve their own interpersonal skills, especially in the areas of delegation and negotiation.

This *social side of research*, as I call it, introduces intriguing research questions for the coming decade. How do graduates, for instance, exhibit question formulation techniques in their personal lives, where learning needs were often the greatest, according to our findings? What adaptive strategies are used in the different arenas of their lives to acquire this essential continued learning skill?

At the same time, our study found a large majority of US graduates believed that they had not learned how to ask their own questions when they were university students. Does this apply to graduates from higher education institutions in the UK and elsewhere? Why, or why not? In other words, do the outcomes of information literacy instruction, no matter how it may be taught, differ from one country to the next? If so, how and why?

Questions for the coming decade focus on the vital link between higher education and lifelong learning and present fertile ground for lifelong learning research. And while information literacy framework (and the standards) espouses the importance of educating lifetime learners, there is much to still be learned about the outcomes of the information literacy training, coaching, mentoring and teaching to which students may have been exposed in university.

5. Paying it forward

In the past decade, a growing number of information literacy researchers have turned their attention to studying how people research information both on the job and in their personal lives. Drawing on theories from ethnography to phenomenology, this research has expanded methods of data collection, analysis and theoretical approach. Together, these changes have enriched the field of information literacy in meaningful ways, broadening our scope of study.

More than anything though, this strand of research has increased the field’s understanding about the importance of human relationships for sharing and fostering information literacy practices. It has also identified a significant learning gap between what information skills students are taught in university and what they need in their lives once they graduate.

In PIL’s lifelong learning study, for instance, graduates believed they had not developed the ability to frame and ask questions of their own during university. They discovered this interpersonal communication skill they were lacking ended up being critically important to their success at work and in acquiring the life skills in their daily lives.

Taken together, these findings have significant implications for librarians and educators who teach and work with university students. Academic librarians are in a unique position of helping students to develop social research skills in addition to conducting research with traditional information resources. They play a critical role in helping students succeed in the complex information environment of higher education.

As the past decade of research suggests, librarians, should – if they are not already – be teaching students transferable information skills that will help them succeed in the workplace and as lifelong learners once they graduate (Hicks, 2015).

Based on our research, the challenge for librarians now, and into the near future, will be developing teaching methods that help to create a culture of *persistent question asking* and to help students develop the skills – both traditional and high tech – to continue learning on their own.

One way to help achieve this is for librarians to more actively integrate curiosity into classroom teaching as Deitering and Rempel have suggested (2017). Librarians, for instance, can do this by encouraging university students to search for topics they have defined themselves out of interest, rather than defaulting, as many do, to a safe topic they know will guarantee a passing grade from the instructor.

By practising and perfecting an iterative question-asking process for finding out things they want to know, rather than providing answers to questions they have been assigned, students will experience greater success as continuing learners once they complete university. Additional research on workplace information literacy and lifelong learning in the coming decade will only serve to expand and improve the field, and the teaching methods used with students, at a time when information skills are more complicated than ever.

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References

Association of College and Research Libraries (ACRL). (2015). *Framework for information literacy for higher education*. Chicago: American Library Association.
<http://www.ala.org/acrl/standards/ilframework> [Accessed: 12 May 2017].

American Association of Colleges and Universities (AACU). (2013). *It takes more than a major: Employer priorities for college learning and student success*. Washington, D.C.: American Association of Colleges and Universities.
https://www.aacu.org/sites/default/files/files/LEAP/2013_EmployerSurvey.pdf [Accessed: 12 May 2017].

Bawden, D. (2001). Information and digital literacies: a review of concepts. *Journal of Documentation*, 57(2), 218-259. <https://doi.org/10.1108/EUM000000007083> [Accessed: 12 May 2017].

Berry, L. (1999). *Delivering the soul of service: the nine drivers of sustainable business success*. New York: Free Press.

Bruce, C. S. (1997). *The seven faces of information literacy*. Adelaide: Auslib Press.

- Bruce, C. S. (1999). Workplace experiences of information literacy. *International Journal of Information Management*, 19(1), 33-48. [https://doi.org/10.1016/S0268-4012\(98\)00045-0](https://doi.org/10.1016/S0268-4012(98)00045-0) [Accessed: 12 May 2017].
- Cheuk, B. W. (2008). Delivering business value through information literacy in the workplace. *Libri*, 58(3), 137-143. <https://doi.org/10.1515/libr.2008.015> [Accessed: 12 May 2017].
- Cheuk, B. W. (2000). Exploring information literacy in the workplace: a process approach. In C. Bruce, P. Candy, & H. Klaus (Eds.), *Information literacy around the world: advances in programs and research*, 177-191. Wagga Wagga, N.S.W: Centre for Information Studies, Charles Sturt University.
- Crawford, J. & Irving, C. (2009). Information literacy in the workplace: a qualitative exploratory study. *Journal of Librarianship and Information Science*, 41(1), 29-38. <https://doi.org/10.1177/0961000608099897> [Accessed: 12 May 2017].
- Deitering, A. & Rempel, H. G. (2017). Sparking curiosity – librarians’ role in encouraging exploration. *In the Library with the Lead Pipe*. <http://www.inthelibrarywiththeleadpipe.org/2017/sparking-curiosity/> [Accessed: 12 May 2017].
- Eraut, M. (2007). Learning from other people in the workplace. *Oxford Review of Education*, 33(4), 403-422. <https://doi.org/10.1080/03054980701425706> [Accessed: 12 May 2017].
- Forster, M. (2017). *Information literacy in the workplace*. London: Facet Publishing.
- Forster, M. (2016). Refining the definition of information literacy: The experience of contextual knowledge creation. *Journal of Information Literacy*, 9(1), 62-73. <https://doi.org/10.11645/9.1.1981> [Accessed: 12 May 2017].
- Fry, R. (2011). The monetary value of college. In *Is college worth it? College presidents, public assess value, quality and mission of higher education*, 83-85. Washington D.C.: Pew Research Center. <http://www.pewsocialtrends.org/files/2011/05/Is-College-Worth-It.pdf> [Accessed: 12 May 2017].
- Gallup Research (2014). *Great jobs, great lives: The 2014 Gallup-Purdue index report*. Washington, D.C.: Gallup Research. <https://www.luminafoundation.org/files/resources/gallup-purdue-index-report-2014.pdf> [Accessed: 12 May 2017].
- Gallup Research (2015). *Great jobs, great lives: The relationship between student debt, experiences and perceptions of college worth: The 2015 Gallup-Purdue index report*. Washington D.C.: Gallup Research. <http://www.wfyi.org/files/wfyi/files/gpi-report-2015-09-25-2015.pdf> [Accessed: 12 May 2017].
- Head, A. J. (2012). *Learning curve: how college graduates solve information problems once they join the workplace*. Seattle, Washington: University of Washington Information School. <https://doi.org/10.2139/ssrn.2165031> [Accessed: 12 May 2017].
- Head, A. J. (2016). *Staying smart: how today’s graduates continue to learn once they complete college*. Seattle, Washington: University of Washington Information School. <https://doi.org/10.2139/ssrn.2712329> [Accessed: 12 May 2017].
- Head, A. J., Van Hoeck, M. & Garson, D. S. (2015). Lifelong learning and participation in the digital age: a literature review. *First Monday*, 20(2). <https://doi.org/10.5210/fm.v20i2.5857> [Accessed: 12 May 2017].

- Hepworth, M. & Smith, M. (2008). Workplace information literacy for administrative staff in higher education. *Australian Library Journal*, 57(3), 212-236.
<https://doi.org/10.1080/00049670.2008.10722477> [Accessed: 12 May 2017].
- Hicks, A. (2015). Drinking on the job: integrating workplace information literacy into the curriculum. *LOEX Quarterly*, 41(4), 9-15,
http://scholar.colorado.edu/cqi/viewcontent.cgi?article=1060&context=libr_facpapers
 [Accessed: 12 May 2017].
- Holden, I. I. (2010). Science literacy and lifelong learning in the classroom: a measure of attitudes among university students. *Journal of Library Administration*, 50(3), 265-282.
<https://doi.org/10.1080/01930821003635002> [Accessed: 12 May 2017].
- Hultgren, F. & Limberg, L. (2003). A study of research on children's information behaviour in a school context. *New Review of Information Behaviour Research*, 4(1), 1-15, 365-76.
<https://doi.org/10.1080/14716310310001631408> [Accessed: 12 May 2017].
- Inskip, C. (2014). Information literacy is for life, not just for a good degree: a literature review. *Chartered Institute of Library and Information Professionals*. <http://discovery.ucl.ac.uk/1448073/>
 [Accessed: 12 May 2017].
- Kirton, J. & Barham, L. (2005). Information literacy in the workplace. *Australian Library Journal*, 54(4), 365-76. <https://doi.org/10.1080/00049670.2005.10721784> [Accessed: 12 May 2017].
- Kemmis, S., Edwards-Groves, C., Lloyd, A., Grootenboer, P., Hardy, I., & Wilkinson, J. (2017). Learning as being 'stirred in' to practices. In P. Grootenboer, C. Edwards-Groves, & S. Choy (Eds.), *Practice theory perspectives on pedagogy and education: Praxis, diversity and contestation* (pp.45-55). Singapore: Springer. https://doi.org/10.1007/978-981-10-3130-4_3 [Accessed: 12 May 2017].
- Lloyd, A. (2013). Building information resilient workers: The critical ground of workplace information literacy. What have we learnt? In S. Kurbanoglu, E. Grassian, D. Mizrachi, R. Catts, & S. Špiranec (Eds.) *Worldwide commonalities and challenges in information literacy research and practice* (ECIL 2013) (pp.219-228). *Communications in Computer and Information Science*, 397.
http://dx.doi.org/10.1007/978-3-319-03919-0_28 [Accessed: 12 May 2017].
- Lloyd, A. (2010). *Information literacy landscapes: information literacy in education, workplace, and everyday life contexts*. Oxford: Chandos Publishing. <https://doi.org/10.1533/9781780630298>
 [Accessed: 12 May 2017].
- Lloyd, A. (2009). Informing practice: Information experiences of ambulance officers in training and on-road practice, *Journal of Documentation*, 65(3), 396-419. <https://doi.org/10.1108/00220410910952401>
 [Accessed: 12 May 2017].
- Lloyd, A. & Williamson, K. (2008). Towards an understanding of information literacy in context: implications for research. *Journal of Librarianship and Information Science*, 40(1), 3-12.
<https://doi.org/10.1177/0961000607086616> [Accessed: 12 May 2017].
- MacMillan, M. E. (2014). Fostering the integration of information literacy and journalism practice: a long-term study of journalism students. *Journal of Information Literacy*, 8(2), 3-22.
<http://dx.doi.org/10.11645/8.2.1941> [Accessed: 12 May 2017].

- McClure, D. (2013). Joining the conversation: law library research assistant programs and current criticisms of legal education. *Legal Reference Services Quarterly*, 32(4), 274-293. <https://doi.org/10.1080/0270319X.2013.842821> [Accessed: 12 May 2017].
- McNicol, S. & Shields, E. (2014). Developing a new approach to information literacy learning design. *Journal of Information Literacy*, 8(2), 23-35. <https://doi.org/10.11645/8.2.1911> [Accessed: 12 May 2017].
- National Association of Colleges and Employers (NACE). (2014). *Job outlook 2015 study*. Bethlehem, PA: NACE Publishing.
- National Committee of Inquiry into Higher Education (NCIHE). (1997). *Higher education in the learning society*. Leeds: NCIHE. <http://www.leeds.ac.uk/educol/ncihe/> [Accessed: 12 May 2017].
- O'Farrill, R. T. (2010). Information literacy and knowledge management at work: conceptions of effective information use at NHS24. *Journal of Documentation*, 66(5), 706-733. <https://doi.org/10.1108/00220411011066808> [Accessed: 12 May 2017].
- Pew Research Center (2014). *The rising cost of not going to college*. Washington, D.C.: Pew Research Center. <http://www.pewsocialtrends.org/2014/02/11/the-rising-cost-of-not-going-to-college/> [Accessed: 12 May 2017].
- Scales, B. J. & Lindsay, E. B. (2005). Qualitative assessment of student attitudes toward information literacy. *Portal: Libraries and the Academy*, 5(4), 513-526. <https://doi.org/10.1353/pla.2005.0059> [Accessed: 12 May 2017].
- Somerville, M. M., Howard, Z., and Mirijamdotter, A. (2009). *Workplace information literacy: cultivation strategies for "working smarter" in 21st century libraries*. Seattle, Washington: ACRL Fourteenth National Conference, 119-126.
- Stokes, P.J. (2015). *Higher education and employability: new models for integrating study and work*. Cambridge, MA: Harvard Education Press.
- United States Census Bureau (2015). *Educational attainment in the United States: 2014*. Washington, D.C.: United States Census Bureau. <http://www.census.gov/newsroom/press-releases/2015/cb15-tps03.html> [Accessed: 12 May 2017].
- Weiner, S. (2011). Information literacy in the workplace: a review. *Education Libraries* 34(2), 7-14. http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1015&context=lib_fsdocs [Accessed: 12 May 2017].
- Zakaria, F. (2015). *In defense of a liberal education*. London: W.W. Norton.