

Contents

Special Issue: Information literacy: From practice to research and back again

Guest Editors: Gaby Haddow and Min Chou

Editorial

Information literacy: From practice to research and back again 105
Gaby Haddow and Min Chou

Articles

Knowledge visualization and mapping of information literacy, 1975–2018 107
Omwoyo Bosire Onyancha

Refining information literacy practice: Examining the foundations of information literacy theory 124
Michael Flierl and Clarence Maybee

Theory into practice: Challenges and implications for information literacy teaching 133
Deborah Schachter

Playful learning for information literacy development 143
Andrew Walsh

Curating knowledge, creating change: University Knowledge Center, Kosovo national transition 151
Mary M. Somerville, Anita Mirjamdotter, Edmond Harjizi, Elham Sayyad-Abdi, Michele Gibney, Christine Bruce and Ian Stoodley

Adult learning theories and autoethnography: Informing the practice of information literacy 163
Karen Bordonaro

Studying visual literacy: Research methods and the use of visual evidence 172
Krystyna K. Matusiak

Abstracts 182

Aims and Scope

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Information literacy: From practice to research and back again

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This special issue of *IFLA Journal* had its origins in a highly successful joint session at the 2018 IFLA World Library and Information Congress in Kuala Lumpur, which was followed by a call for papers. Organised by the Library Theory and Research and Information Literacy Sections, the session, ‘Information Literacy: From Practice to Research and Back Again’, attracted a large number of delegates at the Congress, to the extent that additional chairs were needed in the already sizeable auditorium. While the popularity of the session was pleasing in that it illustrated the topic’s interest to information professionals at the venue, it is equally if not more satisfying to see the traction that the topic has gained after many years of significant research in the field.

Since 1974, when the term ‘information literacy’ was first used, the field has received a vast amount of attention from both practical and research perspectives. With the potential to transform lives and societies, the importance of information literacy is appreciated worldwide. Our understandings of information literacy come from across the globe and range in focus from practice-based to highly theoretical, from everyday life to education and workplace settings, and for infants through to the elderly. The 2018 session and this special issue demonstrate that breadth.

The title – ‘Information Literacy: From Practice to Research and Back Again’ – was designed to encompass the theoretical underpinnings and theory that can inform practice, the analytical skills critical to information literacy, the research models that contribute to building new theory, the challenges of applying theory in practice, how learning theories can inform practice, and cultural perspectives associated with learning. Our aim was to look beyond standards and processes, engaging instead in the potential for

developing knowledge to guide information literacy practice across disciplines, contexts and environments. We are delighted that this special issue has realised that intent.

Opening the issue is an article that applies bibliometric research methods to map the evolution of information literacy from 1975 to 2018. Onyancha’s findings demonstrate the importance of interdisciplinary and collaborative approaches to delivering information literacy in today’s learning environments. Continuing with the focus of learning environments, Flierl and Maybee discuss the need to consider information literacy educational practice in the higher education sector. The authors are concerned that some existing information literacy theories may be biased towards a 20th-century European world view, and that engagement with information literacy theory is critical in justifying practice in the higher education sector. Schachter’s article also focuses on information literacy teaching practices in higher education institutions. This article emphasises the need to improve librarians’ awareness and application of theory.

The next three articles look at different methodological approaches to developing information literacy and learning. Walsh describes playful learning as situated within a socially constructed approach. The article discusses some barriers to using playful learning in information literacy and encourages greater recognition of its value and further development. Collaborative system design is the focus of the next article by Somerville, Mirijamdotter, Hajrizi,

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Sayyad-Abdi, Gibney, Bruce and Stoodley. Using a real-world example – the building of an institutional repository – the authors provide a road map for others wishing to use an inclusive approach for the co-design of holistic systems for enabling information literacy. Adult learners, self-directed learning and lifelong learning are the central components of Bordonaro's article about the autoethnographic approach. This methodology involves the exploration of lived experiences through reflexivity informed by theory, and can offer new and useful perspectives on the practice of information literacy.

Last but not least, Matusiak reviews the literature that has explored visual literacy – an increasingly important aspect of academic and everyday

information practice. The findings reveal a relatively new subject of research emerging in the field. Quantitative approaches are the most common methods applied, and visual evidence is almost always used in the research process.

Finally, we would like to thank all those who contributed to producing this special issue: the abstract submitters, presenters and program committee of the Congress joint session; the submitters of papers and their reviewers; Steve Witt, the executive editor of *IFLA Journal*; and Professor Christine Bruce, who suggested the session title, co-presented at IFLA 2018 and co-authored an article in this issue. We hope that you find the issue interesting and useful in your practice and research.



Knowledge visualization and mapping of information literacy, 1975–2018

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Abstract

This article examines the evolution of information literacy over 43 years (from 1975 to 2018), using knowledge visualization and mapping of its literature, as indexed in the Scopus database. Results reveal that information literacy has evolved from being a library- and/or librarianship-oriented concept to a multidisciplinary field and is no longer restricted to social sciences but is spread across 27 disciplines in Scopus' subject classification. New literacies have emerged after 2000 to include digital literacy, media literacy, health literacy, business information literacy, metaliteracy, content literacy, workplace information literacy, scientific literacy and science literacy. Library instruction remains a prominent method of information literacy delivery in academic libraries. We conclude that information literacy is dynamic and spread across many disciplines and would, therefore, require interdisciplinary and collaborative approaches for its effective delivery in what is turning out to be diverse and complex information and learning environments.

Keywords

Author-supplied keywords, bibliometrics, content analysis, Information literacy, knowledge mapping and visualization, LIS research

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Introduction

The concept *information literacy* is relatively new, having emerged in 1974 when it was first used in Paul Zurkowski's report that was submitted to the National Commission on Libraries and Information Science (NCLIS). Back then, Zurkowski pointed out the following:

people trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing the wide range of information tools as well as primary sources in molding information-solutions to their problems... The work of the Commission should be viewed in terms of achieving total information literacy for the nation. (Zurkowski 1974 as cited in Behrens 1994: 310)

Since its inception, information literacy has evolved to become one of the most common topics and core subjects in the library and information science (LIS) curricula throughout the world (Gerolimos, 2009;

Pinto et al., 2013). The concept is no longer a preserve of LIS, but spans several disciplines. In terms of research fields, information literacy is listed in the ALISE (Association of Library and Information Science Education) taxonomy as one of the research areas, as well as a generic field of practice and knowledge for a librarian (see ALISE, 2016). As noted by various authors (e.g. Breivik and Gee 1989 as cited in Pinto et al., 2010: 3; Koltay et al., 2016; Talja and Lloyd 2010), information and communication technologies (ICTs) have greatly contributed to the shaping of information literacy terminologies. Furthermore, the multidisciplinary nature of the concept has resulted in the application and research of information literacy in different fields, a situation that brings on board many perspectives, thereby widening

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the scope of the subject domain. These developments call for studies to investigate the development and evolution of this subject, which has increasingly become multidisciplinary in nature.

Assessing the development and evolution of information literacy may lead to a deeper understanding of its territory and boundary (Bruce, 2016; Park and Kim, 2011). Furthermore, the findings of such a study would advance the information literacy teachers' and students' understanding of the disciplinary areas that use or contribute to the development of the concept, where it has developed, and how the notion of a '[particular] literacy' has arisen over time. The emerging areas (new literacies) may form niche research areas for post-graduate students and other researchers. In addition, the extent to which information literacy has matured can be determined using mapping and visualization of its literature. Finally, revisions of the information literacy curricula and instruction programmes would greatly benefit from a trend analysis of the developments in the subject domain.

Related studies

Despite its relatively short history, the field of information literacy has been subjected to bibliometric studies for a variety of reasons. Kolle (2017) investigated the global information literacy research through the examination of the literature published on information literacy, with a view to revealing the key aspects of information literacy publication trends. The author, drawing his data from the Web of Science (WoS), assessed the publication types, language and trends through an analysis of publications over the years, as well as identifying the most productive authors, institutions, countries and journals and the most popular keywords and characteristics of the top 10 most cited articles. The author noted an increase in the volume of information literacy literature from 2005 to 2014; the majority of the papers originated in the USA, while subject-wise, *digital divide*, *media literacy*, *pedagogy*, *higher education* and *critical thinking* emerged as the most common 'current' topics of research in the information literacy subject domain.

In 2015, Majjid et al. conducted a study – using Scopus data – to explore scholarly communication trends in the field of information literacy. The authors focused on similar areas of analysis to Kolle (2017), namely annual growth of information literacy publications, journals publishing information literacy literature and publication by subject area. They also identified prolific authors and countries. As observed by Majjid et al. (2015), the broad subject areas within which information literacy research takes place were

social sciences, *computer science*, *medicine*, *engineering* and *business, management and accounting*, to name just a few of the areas that yielded more than 100 articles each. The study did not, however, break down the subject areas into specific fields or subject domains. Nevertheless, the authors noted that information literacy has largely been associated with information science, a field that is classified among social science disciplines. It is not surprising, therefore, to find social sciences topping the list of subject areas that yielded the highest number of information literacy articles. Equally strongly represented in the list of subject categories was computer science, a situation that can be attributed to library automation, digital and electronic information, as well as the emergence, adoption and use of information and communication technologies (ICTs) in libraries and other information services.

The use of the Library and Information Science Abstracts (LISA) database by Park and Kim (2011) to conduct a bibliometric analysis of information literacy literature between 1991 and 2009, yielded additional subject terms that were most commonly associated with information literacy in the period. The subject terms that occurred most commonly in the information literacy literature in Park and Kim's study differed greatly from those found in the studies of Majjid et al. (2015) and Kolle (2017). A plausible explanation is that the three databases (i.e. Web of Science, Scopus and LISA) use different subject classification systems or thesauri to index the literature they cover. Park and Kim (2011) noted that information literacy was highly associated with *user training*, which posted 310 records in LISA, followed by *university libraries* (188), *students* (169) and *academic libraries* (112). The rest of the terms yielded fewer than 100 papers each. Information literacy-specific terms that were listed among the top descriptors in Park and Kim's (2011) study included *computer-assisted instruction*, *lifelong learning*, *information-seeking behavior*, *critical thinking* and *online information retrieval*.

In another bibliometric study of information literacy literature, Pinto et al. (2013) used both the Web of Science and Scopus to analyse the evolution of research activity between 1974 and 2011, 'taking into account the author's production, distribution and co-authorship of the works, the affiliation, and the most frequently used journals' (Pinto et al., 2013: 1071). The authors noted an exponential growth of the information literacy literature in both subject domains (i.e. social sciences and health sciences), with social sciences performing better than health sciences, thereby reinforcing the widely held belief

that information literacy is largely a social science subject. While Pinto et al. (2013) did not investigate the subject focus of information literacy research, Pinto et al. (2010) conducted a terminological, conceptual and statistical analysis of information literacy literature published between 1977 and 2007 to identify the terms that represent the concepts related to information literacy and the number of documents in the various databases selected for each of the representative terms. Using the ERIC (Education Resources Information Center), LISA (Library and Information Science Abstract) and LISTA (Library, Information Science and Technology Abstracts) databases, the authors noted that information literacy is largely researched in the fields of librarianship and documentation, education and computer science. Whereas the prominence of the first two fields can be attributed to the subject-specific databases that were used for the study, the emergence of ICTs, which have led to a shift in focus to digital literacy and computer literacy, may explain the significant number of documents being indexed in the field of computer science. For example, in their analysis of the specific literacies reflected in the monographs published between 1977 and 2007, Pinto et al. (2010) found that *digital literacy*, *computer literacy*, *web literacy*, *internet literacy* and *technological literacy* were highly ranked in terms of the number of monographs that included the search terms for the study.

Purpose of the study

The purpose of the study was to examine the literature on information literacy for the period 1975 to 2018 in an attempt to visualize and map the scientific evolution of the subject domain over time. Specifically, the objectives of the study are to

- map the author-supplied keywords used to index information literacy literature with a view to determining the evolution of information literacy from 1975 to 2018;
- analyse the broad subject areas in which information literacy is researched in order to determine the spread of information literacy across disciplines;
- determine the different types of literacies that were associated with information literacy between 1975 and 2018.

Theoretical underpinning of the study

The evolution of disciplines, research fields or subject domains has long been of interest to bibliometric

scholars. Scholars from various disciplines, including library and information science, have employed diverse theories, models and methods to assess scientific change or evolution of disciplines. The theory of evolution is one such theory that has attracted the attention of bibliometrics/scientometrics students, teachers and scholars. The theory has been adapted and has led to the development of approaches and methods that can be used to study the evolution of science. For example, Scharnhorst (as cited in Vitinov and Ausloos 2012: 74) proposed what he termed ‘geometrically oriented evolution theory’ as an approach for the analysis of scientific landscapes, where *scientific landscape* refers to a process of describing the

corresponding field of science or technology through a function of parameters such as height, weight, size, technical data, etc. . . . [leading to the construction of] a virtual knowledge landscape from empirical data in order to visualize and understand innovation and to optimize various processes in science and technology.

Cohen and Lloyd (2014) have highlighted six themes of the evolution theory in their quest to answer the question: Can evolution theory improve our understanding of disciplines? The themes are heredity, variations, speciation, extinction, parallel evolution and heterosis. The authors argue that whereas the evolution theory is not perfectly analogous with disciplinary evolution, the former’s principles can be applied to study the latter. There are different approaches, models and methods that have been used, taking into consideration the theory of evolution, to study scientific evolution of disciplines, fields or subject domains. The models and methods include those associated with the growth of scientific fields or research fronts, investigations on field mobility of scientists, long-term trend analyses of science, techniques of mapping science structure and models of diffusion of knowledge (Bruckner et al., 1990). E Silva and Teixeira (2012) divide the methods and approaches into two categories, namely qualitative and quantitative. The qualitative approaches or methods, according to e Silva and Teixeira (2012: 618), are biographical histories, historical accounts, field studies, historical views of concepts within a discipline and challenging histories. The quantitative methods include historical approaches based on keywords, historical approaches based on citations and visualization methods (e Silva and Teixeira (2012: 623). This study employed the visualization approaches to map the evolution of information literacy from 1975 to 2018. According to Geisler (as cited in e Silva and

Teixeira 2012: 623), ‘visualization studies focus on the mapping and creation of road maps for science and technology in order to envision scientific results’ and ‘allow us to understand and communicate the changing structure of science and technology and the dynamics of their boundaries’.

Visualization studies may focus on words in texts, keywords, journals or citations. The current study mapped the author-supplied keywords in order to understand the evolution of information literacy over time.

Research methodology

The source of data was the Scopus database. Scopus is the world’s largest abstract and citation database of scientific literature (Schotten et al., 2018). The database indexes the greatest number of journals, with diverse disciplinary foci, including a large number in the social sciences, within which information literacy is commonly researched (see, for example, Majid et al., 2015; Pinto et al., 2013). A search in the Scopus database using the phrase ‘information literacy’ within the title, abstract and keyword fields was conducted on 20 February 2019. The use of the phrase was meant to minimize the extraction of irrelevant records. Moreover, the current study’s purpose was not necessarily to investigate the volume of research on the concept; rather, it was to assess the development or evolution of the *concept* from 1975 to 2018. Finally, as Nettle and Frankenhuys (2019) argue, it is not necessary to consider all the publications in a field when assessing the evolution of a discipline or subject field. The search was thus limited to the period from 1975 to 2018.

After conducting the search, the initial results were filtered to obtain only the research articles, books, book chapters, conference papers and reviews. The limitation of the search to the aforementioned document types was based on the belief that they represent original research. A total of 6662 documents that met the search query requirements were obtained. Two approaches were used to analyse the data. Firstly, we used the Scopus database’s inbuilt *Analyze Research Results* option to analyse results by subject area, an analysis that yielded subject categories within which information literacy is researched. The analysis was conducted in four stages in accordance with the publication period, notably 1975–1990, 1991–2000, 2001–2010 and 2011–2018, in order to track the shifts in terms of the volume of publications in each subject area (see Tables 6 and 7). Table 1 provides the number of

Table 1. Number of information literacy documents and keywords, 1975–2018.

Period	Number of documents	Total keywords	Keyword analysis threshold	Number of threshold keywords
1975–1990	17	10	1	10
1991–2000	206	156	2	37
2001–2010	2125	2512	7	120
2011–2018	4314	7135	15	121

documents retrieved and analysed for the study in each year period of the four sub-periods.

Secondly, we used the VOSviewer to map the author-supplied keywords in each time period mentioned above. VOSviewer is a ‘software tool for creating maps based on network data and for visualizing and exploring these maps’ (Van Eck and Waltman, 2019: 3). Maps can be created based on network data, bibliographic data or text data. The software allows one to analyse bibliographic data extracted from bibliographic databases (e.g. Scopus and WoS) in five ways, namely co-authorship, co-occurrence of terms, citation analysis, bibliographic coupling and co-citation analysis using different units of analysis, such as authors, organizations, countries, keywords and journals. This study employed co-occurrence of terms as the type of analysis, whereby author-supplied keywords were the subjects of analysis. In order to track the evolution of information literacy, results were grouped into the four periods of publications as shown in Figures 1 to 4 and Tables 2 to 5. Finally, an analysis of the data was conducted to identify the literacies associated with information literacy over time in an attempt to use their evolution in the information literacy literature as a lens to assess the evolution of information literacy (see Table 8).

Limitations of the study

The use of the phrase ‘information literacy’ limited the study to publications that specifically mentioned the concept in their title, abstract or keywords fields and might have, therefore, excluded the literature discussing broader and/or related terms associated with information literacy. For example, it is possible that authors may mention other literacies like *digital literacy*, *media literacy*, *scientific literacy* and *computer literacy* in their papers without mentioning *information literacy* in the title, abstract or as a keyword. However, as mentioned above, the focus of the

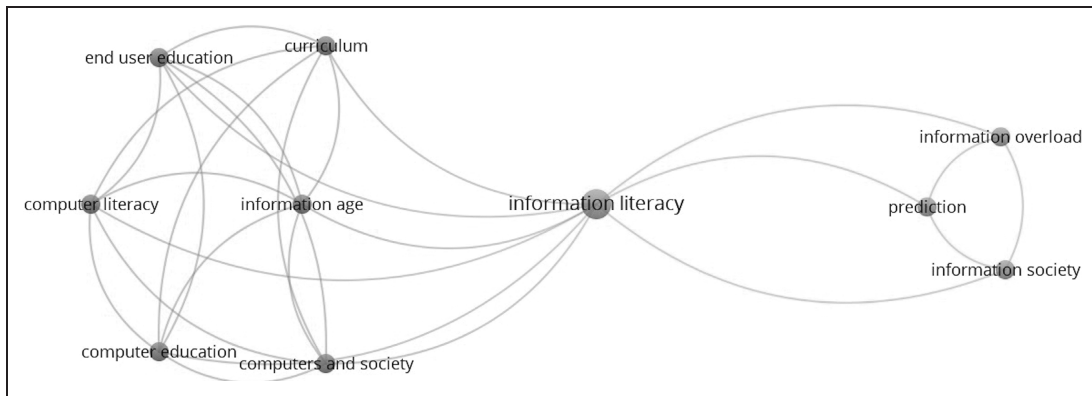


Figure 1. Visualization map of author-supplied keywords in information literacy literature, 1975–1990.

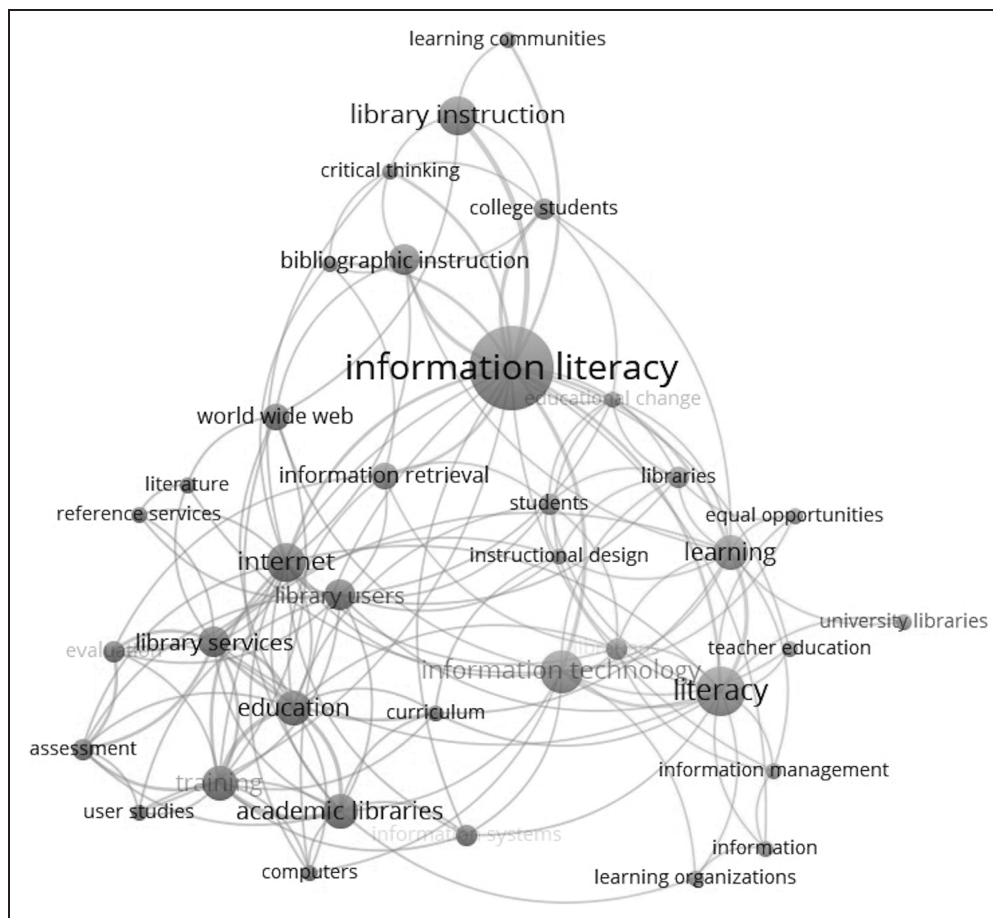


Figure 2. Visualization map of author-supplied keywords in information literacy literature, 1991–2000.

current study was on gauging the evolution of information literacy as a concept and not necessarily to measure the volume of research, which would have necessitated a search for broader and narrower terms associated with information literacy.

Although the use of author-supplied keywords to map and visualize the nature and evolution of a concept is a common practice among informetricians or bibliometricians (see Chen et al. 2015; Khan and Wood 2015; Liu et al. 2015; Yang et al. 2016), there

are some limitations, chief of which are (a) some journals do not require authors to supply keywords and (b) author-supplied keywords are not controlled vocabulary and therefore authors can refer to the same concept differently. The latter point was manifest when analysing the literacies that co-occurred with *information literacy* in the literature. An example would be such terms as *science literacy*, *scientific literacy* and *research literacy* which may be referring to the same thing.

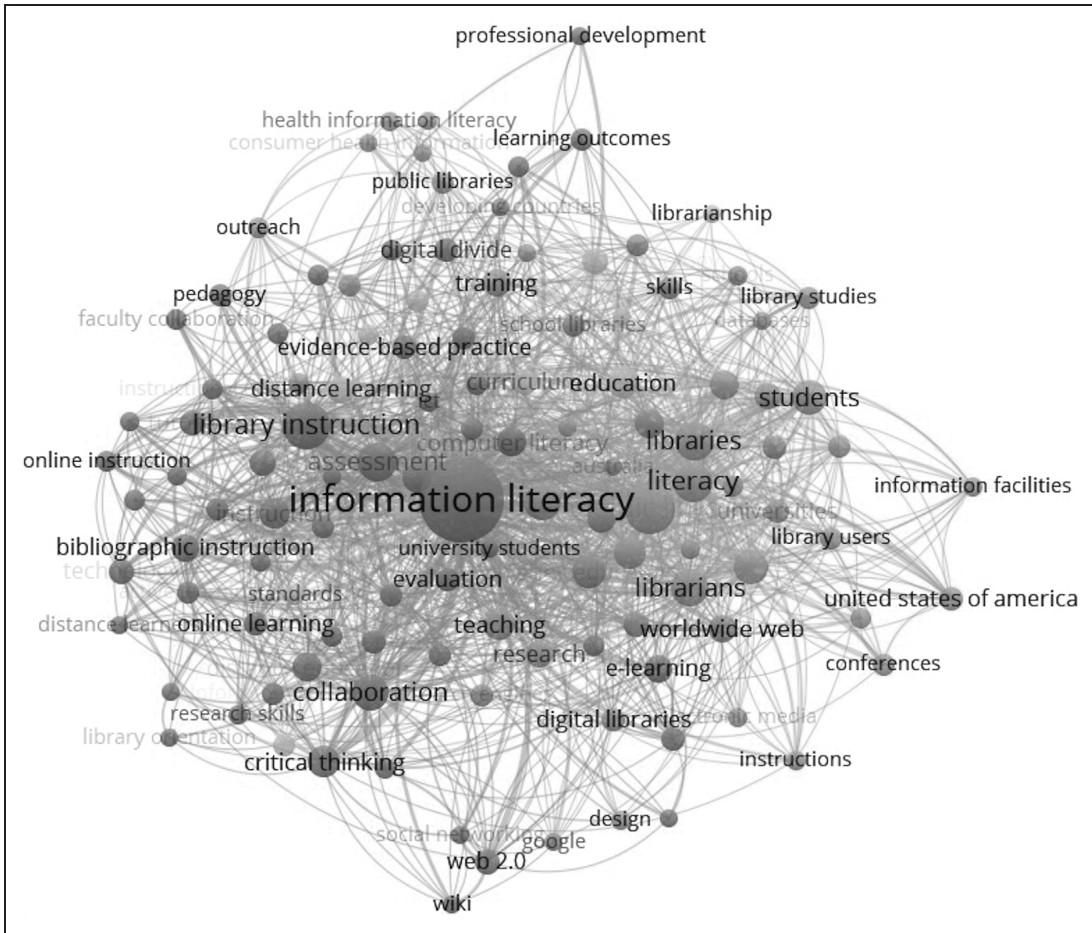


Figure 3. Visualization map of author-supplied keywords in information literacy literature, 2001–2010.

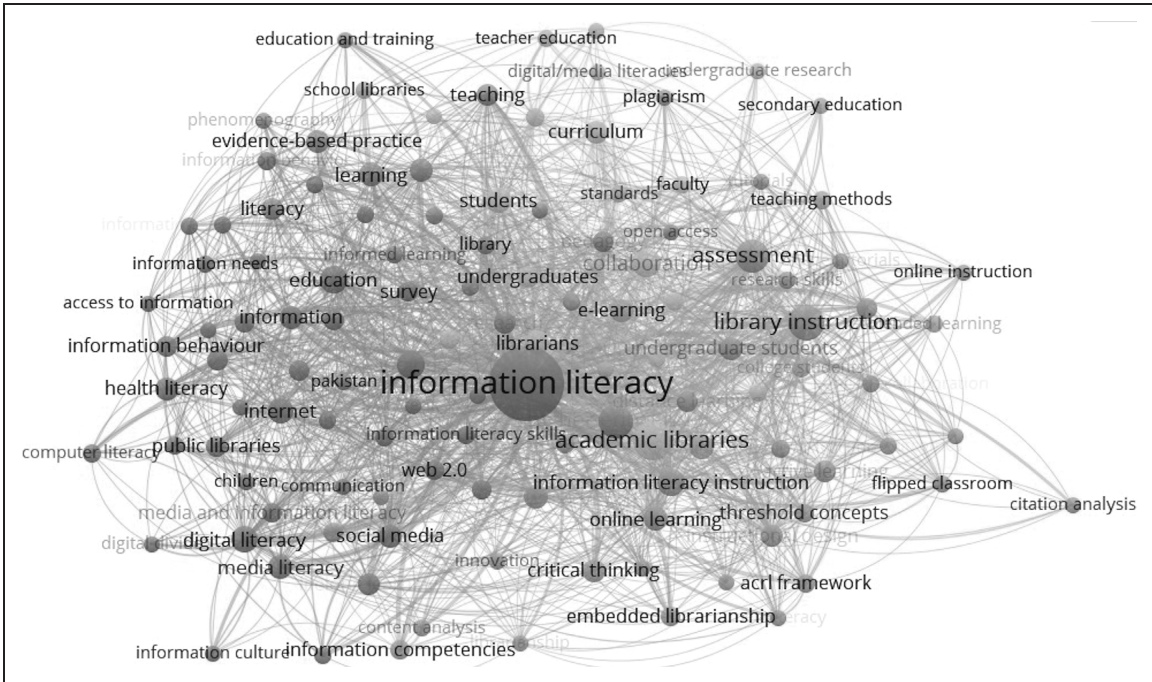


Figure 4. Visualization map of author-supplied keywords in information literacy literature, 2011–2018.

Results and discussion

In accordance with the objectives of the study, this section presents and discusses the findings in order to (a) track the author-supplied keywords in the information literacy literature from 1975 to 2018; (b) track the broad subject areas in which information literacy research is conducted; and (c) determine the literacies associated with information literacy from 1975 to 2018.

Author-supplied keywords in information literacy literature from 1975 to 2018

In order to track the developments in information literacy over the entire period of study, this section

Table 2. Author-supplied keywords in information literacy literature, 1975–1990.

No	Label	Cluster	Links	Frequency (f)
1	Information literacy	2	9	2
2	Computer education	1	6	1
3	Computer literacy	1	6	1
4	Computers and society	1	6	1
5	Curriculum	1	6	1
6	End user education	1	6	1
7	Information age	1	6	1
8	Information overload	2	3	1
9	Information society	2	3	1
10	Prediction	2	3	1

presents and discusses the findings over four time periods, namely 1975–1990, 1991–2000, 2001–2010 and 2011–2018. Figure 1 and Table 2 provide the keywords that appeared in the information literacy literature from 1975 to 1990. There were only two documents that mentioned information literacy as a keyword between 1975 and 1980 and, therefore, these were included in the analysis for the period of 1981 to 1990; hence, the 1975–1990 period consists of more publication years than each of the other three time periods. Figure 1 and Table 2 reveal two clusters consisting of 10 keywords that may be said to explain the focus of information literacy research between 1975 and 2018. The two clusters in Figure 1 reveal that information literacy revolved around computers, hence the keywords *information age*, *computer education* and *computers and society* in cluster one.

The period 1975–1990 comes just one year after Paul Zurkowski introduced the term *information literacy* for the first time (Behrens, 1994). The 1980s saw the emergence of new information technologies beginning to permeate society, with *Time* magazine recognizing computers as the machine of the year (Behrens, 1994). Citing several sources, Behrens outlines the following computer-aided tools and technological innovations that existed in this period: online databases, telecommunications services, electronic mail, custom searches, library networks, microcomputers, cable TV, electronic publishing, fibre optics, satellite communications, videotext, high-density

Table 3. Author-supplied keywords in information literacy literature, 1991–2000.

No	Label	L	TLS	F	No	Label	L	TLS	F
1	Information literacy	20	37	22	21	Information systems	6	6	3
2	Literacy	17	21	10	22	Curriculum	7	8	2
3	Information technology	14	17	8	23	Instructional design	8	8	2
4	Internet	17	20	7	24	Critical thinking	6	7	2
5	Library instruction	5	9	7	25	Educational change	7	7	2
6	Training	13	22	6	26	Computers	6	6	2
7	Academic libraries	13	18	6	27	Research	5	6	2
8	Education	12	18	6	28	Information management	5	5	2
9	Learning	14	17	6	29	User studies	5	5	2
10	Library services	12	17	5	30	Equal opportunities	4	4	2
11	Library users	13	14	5	31	Information	4	4	2
12	Bibliographic instruction	7	9	5	32	Learning organisations	4	4	2
13	Information retrieval	7	8	4	33	Literature	4	4	2
14	World Wide Web	7	7	4	34	Reference services	4	4	2
15	Assessment	8	11	3	35	Learning communities	2	3	2
16	Evaluation	7	9	3	36	Teacher education	3	3	2
17	College students	6	8	3	37	University libraries	2	2	2
18	Librarians	8	8	3					
19	Libraries	8	8	3					
20	Students	8	8	3					

Table 4. Author-supplied keywords in information literacy literature, 2001–2010.

No	Label	L	TLS	f	No	Label	L	TLS	f
1	Information literacy	119	1360	822	21	University libraries	34	66	29
2	Academic libraries	84	432	149	22	Lifelong learning	39	69	28
3	Library instruction	72	296	128	23	Training	30	78	26
4	Literacy	53	213	73	24	World Wide Web	28	72	26
5	Assessment	61	211	70	25	Bibliographic instruction	33	67	25
6	Libraries	54	181	70	26	Information retrieval	29	61	25
7	Librarians	55	182	62	27	E-learning	20	37	24
8	Internet	54	150	60	28	Distance learning	29	55	24
9	Collaboration	51	151	58	29	Information technology	25	50	22
10	Information	45	136	51	30	Reference services	29	62	21
11	Students	46	151	48	31	Research	36	65	20
12	Higher education	43	114	42	32	Information literacy instruction	14	19	19
13	Education	43	101	40	33	Curriculum	28	45	19
14	Learning	40	115	38	34	Technology	25	49	18
15	Critical thinking	33	79	35	35	Web 2.0	19	48	18
16	Teaching	40	116	35	36	Library services	28	54	18
17	Instruction	42	103	33	37	Tutorials	21	44	16
18	Computer literacy	29	60	30	38	User studies	19	37	16
19	Distance education	28	61	29	39	Evaluation	21	37	15
20	Information services	40	97	29	40	Evidence-based practice	14	25	15

Table 5. Author-supplied keywords in information literacy literature, 2011–2018.

No	Label	L	TLS	f	No	Label	L	TLS	f
1	Information literacy	120	2836	2000	21	Information	46	104	50
2	Academic libraries	89	623	250	22	Undergraduate students	43	130	50
3	Library instruction	72	460	187	23	Evidence-based practice	36	84	49
4	Higher education	78	379	172	24	Social media	38	97	49
5	Assessment	72	359	151	25	Information skills	42	105	47
6	Collaboration	66	250	98	26	Health literacy	24	56	46
7	Education	49	144	82	27	Curriculum	32	83	45
8	Libraries	63	187	81	28	Instructional design	45	121	43
9	Information literacy instruction	53	126	80	29	Undergraduates	39	109	42
10	Digital literacy	52	158	77	30	Lifelong learning	27	76	40
11	Students	57	176	68	31	Research	43	90	40
12	Internet	48	99	61	32	Literacy	29	67	39
13	Instruction	55	153	59	33	Teaching	41	115	39
14	University libraries	46	146	57	34	Active learning	33	91	38
15	Librarians	46	143	55	35	Distance education	35	105	37
16	Media literacy	33	94	54	36	Pedagogy	39	89	37
17	Learning	44	119	53	37	Public libraries	27	65	37
18	Online learning	51	134	52	38	Information behaviour	28	67	36
19	Critical thinking	35	88	50	39	Health information literacy	21	35	35
20	E-learning	37	95	50	40	Distance learning	34	79	33

CD-ROM storage and robotics. It is not surprising, therefore, that the emphasis on information literacy programmes in this era centred around computer education, hence the keyword *computer literacy*, which was initially simply defined as follows: 'Computer literacy has to do with increasing our understanding of what the machine can and cannot do. There are two

major components of computer literacy: hardware and software' (Horton as cited in Behrens, 1994: 311). As Koltay et al. (2016: 113) explains, the first IL statements had a 'strong technological stance, in which the development of and need for IL is brought into connection with technological transformations of information tools and sources'.

Table 6. Distribution of information literacy literature according to Scopus subject areas, 1975–2018.

Subject area	1975–1990	1991–2000	2001–2010	2011–2018	Total (N = 6 662)	
					n	%
Social science	8	174	1758	3182	5122	76.88
Computer science	3	36	513	1139	1691	25.38
Medicine	5	9	88	427	529	7.94
Engineering	5	10	107	281	403	6.05
Arts and humanities	–	4	75	314	393	5.90
Mathematics	–	–	13	296	309	4.64
Business, management and accounting	1	6	77	151	235	3.53
Health professions	–	2	42	94	138	2.07
Nursing	–	7	48	76	131	1.97
Psychology	–	2	18	74	94	1.41
Decision sciences	–	2	26	40	68	1.02
Biochemistry, genetics and molecular biology	–	1	11	44	56	0.84
Chemistry	–	–	6	47	53	0.80
Earth and planetary sciences	–	1	6	12	53	0.80
Economics, econometrics and finance	–	3	7	36	46	0.69
Agricultural and biological sciences	–	3	5	34	42	0.63
Immunology and microbiology	–	1	–	9	40	0.60
Pharmacology, toxicology and pharmaceuticals	–	1	6	27	34	0.51
Chemical engineering	–	–	2	18	20	0.30
Environmental science	–	2	2	15	19	0.29
Neuroscience	–	–	–	19	19	0.29
Materials science	–	–	4	12	16	0.24
Dentistry	–	–	5	9	14	0.21
Multidisciplinary	–	–	–	11	11	0.17
Energy	–	–	1	9	10	0.15
Physics and astronomy	–	–	2	8	10	0.15
Unidentified	2	1	–	–	3	0.05
Veterinary	–	–	1	1	2	0.03

In the next phase of the information literacy evolution, as indicated in Figure 2 and Table 3, several terms emerged to constitute the main areas of research focus in information literacy. There were 156 author-supplied keywords in 206 documents. A comparison between Tables 2 and 3 reveals that the keywords *computer education*, *computer literacy* and *computers and society*, which largely defined the focus of information literacy in 1975–1990, had fallen away to the periphery – or out of the picture altogether – and were replaced with the term *computers*. Instead, the terms that had emerged to become the main technology-based drivers and shapers of information literacy during this period included *information technology*, a term that appeared in eight information literacy documents, *internet* (7), the *World Wide Web* (WWW) (4), *information systems* and *computers*. The information literacy-associated literacy frameworks or programmes included *library instruction*, *bibliographic instruction*, *user studies* and *reference services*.

Explaining the development of information literacy in the 1990s, Pinto et al. (2013: 1073) termed the period as the concept's 'growth phase', in which the 'concept evolved towards a preferentially systemic and document-based focus, characterized by a major contextual component which stressed information literacy's cognitive, attitudinal, informational, and pragmatic aspects'. In addition, the authors observed that information literacy co-habited with technologically inclined literacies (e.g. computer literacy and digital literacy). Citing Sundin (2005), Aharony (2010) notes that the concept of information literacy was synonymous with user education and attributed such consideration to librarians who were the key drivers of earlier information literacy literature. However, user education is not a term that is commonly used in the information literacy literature as in the current study.

The characterization of the development of information literacy in 1991–2000 by Pinto et al. (2013:

Table 7. Percentage contribution and change in information literacy research, 1975–2018.

Subject area	Percentage contribution per period				Percentage change			
	1975-1990	1991-2000	2001-2010	2011-2018	1975-1990	1991-2000	2001-2010	2011-2018
Social science	33.33	65.66	62.27	49.84	–	95.40	90.10	44.75
Computer science	12.50	13.58	18.17	17.84	–	91.67	92.98	54.96
Medicine	20.83	3.40	3.12	6.69	–	44.44	89.77	79.39
Engineering	20.83	3.77	3.79	4.40	–	50.00	90.65	61.92
Arts and humanities	0.00	1.51	2.66	4.92	–	100.00	94.67	76.11
Mathematics	0.00	0.00	0.46	4.64	–	0.00	100.00	95.61
Business, management and accounting	4.17	2.26	2.73	2.36	–	83.33	92.21	49.01
Health professions	0.00	0.75	1.49	1.47	–	100.00	95.24	55.32
Nursing	0.00	2.64	1.70	1.19	–	100.00	85.42	36.84
Psychology	0.00	0.75	0.64	1.16	–	100.00	88.89	75.68
Decision sciences	0.00	0.75	0.92	0.63	–	100.00	92.31	35.00
Biochemistry, genetics and molecular biology	0.00	0.38	0.39	0.69	–	100.00	90.91	75.00
Chemistry	0.00	0.00	0.21	0.74	–	0.00	100.00	87.23
Economics, econometrics and finance	0.00	1.13	0.25	0.56	–	100.00	57.14	80.56
Agricultural and biological sciences	0.00	1.13	0.18	0.53	–	100.00	40.00	85.29
Pharmacology, toxicology and pharmaceuticals	0.00	0.38	0.21	0.42	–	100.00	83.33	77.78
Earth and planetary sciences	0.00	0.38	0.21	0.19	–	100.00	83.33	50.00
Immunology and microbiology	0.00	0.38	0.00	0.14	–	100.00	0.00	100.00

1073), as espoused in various sources, was not clearly visible in the current study. Whereas the term *digital literacy* did not appear among the author-supplied keywords in 1991–2000, *computer literacy* co-occurred with information literacy only once. However, the presence of such terms as *internet*, *computers*, *information technology*, *World Wide Web* and *information systems* may imply the delivery of programmes associated with *computer literacy* and *digital literacy*. We consider the presence of such words as *literacy*, *education*, *training*, *curriculum*, *instructional design*, *critical thinking*, *educational change*, *user studies* and *learning communities* as evidence of Pinto et al.'s (2013: 1073) observation about the focus on information literacy's cognitive, attitudinal, informational and pragmatic aspects. The link is implied in the outcomes of the processes, which – according to the results depicted in Figure 2 and Table 3 – take place in universities in general and, specifically, in academic libraries. It has been observed that it was during this phase (i.e. 1991–2000) that information literacy education and training commenced in earnest (Behrens 1994; Pinto et al., 2013). Behrens (1994), for instance, observed that the early 1990s was characterized by the following three main trends: (a) educating for information literacy enjoyed wide attention; (b) information literacy was considered part

of the wider literacy continuum; and (c) librarians were evaluating their role in the information literacy movement. The co-occurrence of education-related terms with information literacy in Figure 2 and Table 3 seem to support Behrens and other scholars' opinion (e.g. Pinto et al., 2013) about information literacy education and training's being a subject of consideration in the 1990s, a period in which the American Library Association (ALA) published their first information literacy standards in the USA. Bandyopadhyay and Boyd-Byrnes (2016) attribute the information literacy education and training phase to information overload, which arose because of the birth of the World Wide Web (WWW) in the 1990s. They explain as follows: 'The information overload influenced academic institutions to recognize the need for formal instruction to educate students about the critical evaluation and the effective and ethical use of information' (Bandyopadhyay and Boyd-Byrnes 2016: 599).

Pinto et al. (2013) label the 2001–2010 period as an integrative phase in information literacy evolution. Citing several authors, Pinto et al. (2013: 1073) argue that the phase beyond 2000 witnessed the 'recognition of information literacy as a holistic process to be integrated into different contexts of a citizen's life – social, political, cultural, educational, economic,

Table 8. Top 40 types of literacies in information literacy literature, 1975–2018.

No.	Label	1975–1990	1991–2000	2001–2010	2011–2018	Total
1	Information literacy	2	22	822	2000	2846
2	Digital literacy	–	–	10	77	87
3	Media literacy	–	–	12	54	66
4	Computer literacy	1	1	30	25	57
5	Health literacy	–	–	7	46	53
6	Health information literacy	–	–	8	35	43
7	Media and information literacy	–	–	–	29	29
8	Visual literacy	–	1	1	16	18
9	Metaliteracy	–	–	–	16	16
10	Critical information literacy	–	–	1	14	15
11	Digital/media literacies	–	–	–	15	15
12	Business information literacy	–	–	1	12	13
13	New literacies	–	–	2	10	12
14	Workplace information literacy	–	–	1	10	11
15	Critical literacy	–	–	1	9	10
16	Scientific literacy	–	–	–	10	10
17	Content literacy	–	–	–	9	9
18	Financial literacy	–	–	–	9	9
19	ICT literacy	–	–	3	6	9
20	Science literacy	–	–	1	8	9
21	Computer and information literacy	–	–	–	8	8
22	Data literacy	–	–	1	7	8
23	Academic literacy	–	–	1	6	7
24	Data information literacy	–	–	–	7	7
25	Digital information literacy	–	–	2	4	6
26	Information technology literacy	–	–	2	4	6
27	Multiliteracies	–	–	2	4	6
28	Transliteracy	–	–	–	6	6
29	E-literacy	–	–	5	–	5
30	Media information literacy	–	–	–	5	5
31	News literacy	–	–	1	4	5
32	Technological literacy	–	–	2	3	5
33	Academic literacies	–	–	1	3	4
34	E-health literacy	–	–	–	4	4
35	Research literacy	–	–	1	3	4
36	Chemical information literacy	–	–	1	2	3
37	Civic literacy	–	–	–	3	3
38	Copyright literacy	–	–	–	3	3
39	Embedded information literacy	–	–	1	2	3
40	Information literacies	–	–	–	3	3
41	Multimodal literacy	–	–	1	2	3
42	Research information literacy	–	–	–	3	3

work, and health'. The highly ranked author-supplied keywords, as shown in Figure 3 and Table 4, do not seem to support the observation that information literacy was being integrated in many different contexts.

The top-ranked author keywords in Table 4 suggest that information literacy occurred mainly in academic institutions, as reflected in such terms as *academic libraries*, *higher education* and *university libraries*. There is no evidence that information literacy took

place in any other context. However, the trend of research, according to Scopus's broad subject terms, reveals that information literacy was slowly permeating other contexts (see Table 6). Another observation, based on the findings in Table 4, is that distance education (as reflected in terms like *distance education*, *e-learning* and *distance learning*) played a key role in the shaping of information literacy in the period 2001–2010. In addition, the presence of technology-

associated terms (e.g. *internet*, *World Wide Web*, *information technology*, *technology* and *Web 2.0*) among the top 40 terms in the information literacy literature is evidence of the role of technology in information literacy evolution. Information technology was either a medium or subject of information literacy instruction during this phase. As a result of its being a subject of information literacy instruction, *computer literacy* bounced back and was ranked number 18 in Table 4. We also witnessed the emergence of such terms as *digital literacy*, *digital information literacy*, *information technology literacy*, *technology literacy* and *ICT literacy* between 2001 and 2010 (see Table 8). However, the term *information literacy* was still the most popular, having appeared in 822 documents, followed by *academic libraries* (149), library instruction (128) and *literacy* (73).

The presence of information literacy across many contexts – as Pinto et al. (2013) had observed regarding the 2000-phase – seems to have been established in 2011–2018. This phase witnessed the introduction of a few terms that were beyond the academe (and particularly academic libraries), with which information literacy was largely associated (see Table 5). Such terms as *digital literacy*, *media literacy* and *health literacy* imply the diverse contexts in which information literacy was researched/discussed or practised. Information literacy seems to have permeated other levels of education, such as high schools, as reflected in such terms as *secondary education* and *school libraries*. Other contexts with which information literacy was associated in 2011–2018, as reflected in Figure 4, include *blended learning*, *teaching methods*, *learning outcomes*, *research skills*, *faculty-librarian collaboration*, *flipped classroom*, *informed learning*, *teacher education*, *inline education and tutorials*, *student engagement*, *consumer health information*, *digital divide*, *self-efficacy*, *curriculum development* and *knowledge management*. Apart from information literacy's being part of the curricula, the aforementioned terms imply a deep learning process, which is collaborative in nature, hence the multiplicity of literacies that appeared in information literacy literature in the period 2011–2018.

Distribution of information literacy literature in broad Scopus subject areas, 1975 to 2018

The classification of information literacy literature according to the broad subject areas in which information literacy was researched between 1975 and 2018 is one way of determining the 'home' of information literacy, as well as the breadth and scope of the concept. It has been observed that information literacy

is multidisciplinary in nature, spreading across several disciplines (Aharony 2010: 270; Kuri and Hajje 2014).

Indeed, Table 6 shows that information literacy is spread across 26 unique Scopus subject areas (excluding *unidentified* and *multidisciplinary*). Information literacy is most common in *social science*, which yielded a total of 5122 (76.88%) articles, followed by *computer science* (1691, 25.38%). The two fields yielded more than three-quarters of the entire information literacy literature published between 1975 and 2018. The other subject areas (or disciplines) that contribute the most to information literacy literature include *medicine*, *engineering*, *arts and humanities*, *mathematics* and *business, management and accounting*, to mention just the areas that contributed more than 200 articles each. In terms of the narrower disciplines within which information literacy research is conducted, Aharony (2010) found that *information science library science* was the most productive field, with a contribution of 31.82% of the total number of publications on information literacy, followed by *education*, *educational research* (10.76%) and *public, environmental and occupational health* (10.15%). The author listed a total of 19 fields, which yielded over 25 articles each. Aharony (2010) found that information literacy was spread across a total of 69 fields. The current study found that the distribution of information literacy literature according to the broad subject areas shown in Table 6 differed from one time period to another. The number of subject areas in which information literacy research has taken place since 1975 is as follows: 1975–1990 (5), 1991–2000 (17), 2001–2010 (27) and 2011–2018 (27). Evidently, the number of subject areas has increased from 5 in 1975–1990 to 27 in 2001–2018, thereby accounting for a 440% increase. Information literacy research has consistently taken place in *social sciences*, *computer science*, *medicine*, *engineering* and *business, management and accounting*. The other fields have offered inconsistent contributions during the period under study, as reflected in Table 6. However, all 27 fields (including *multidisciplinary*) have contributed at least one article each in the periods 2001–2010 and 2011–2018.

But which subject area(s) on information literacy has/have attracted increasing attention by researchers? An analysis of the percentage change was conducted to assess the growth of the information literacy literature across the study periods.

The percentage contributions in columns 2 to 4 in Table 7 were calculated as follows:

$$\left(\frac{n}{N}\right) \times 100$$

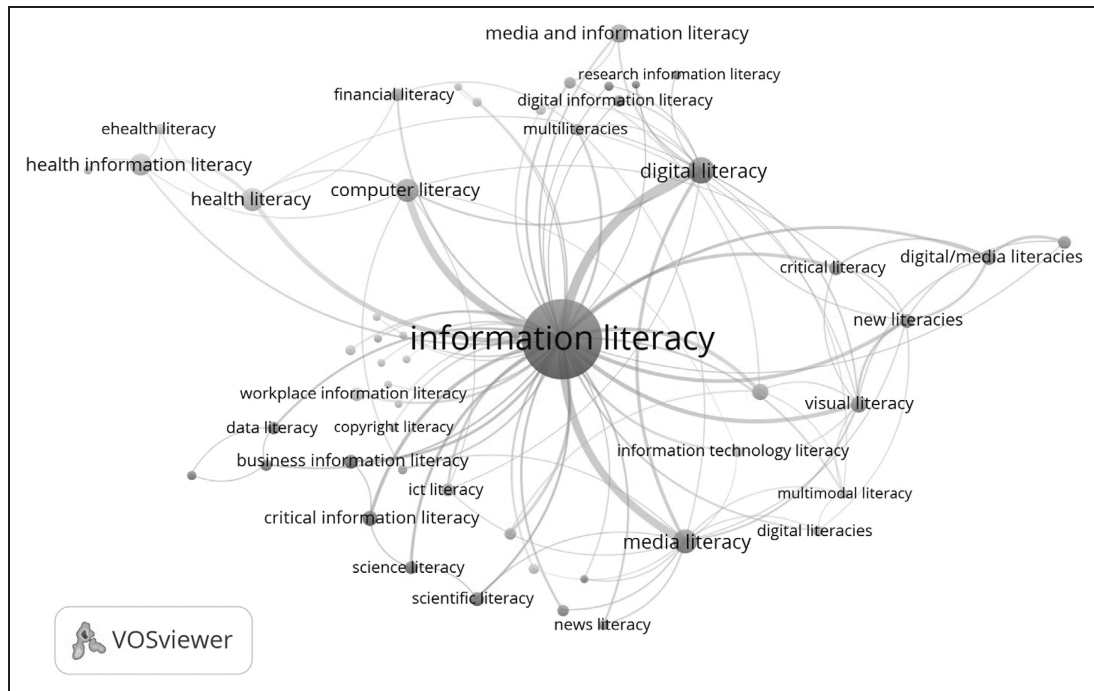


Figure 5. Types of literacies in information literacy literature, 1975–2018.

where n was the number of articles produced in a time period in a given *subject area* and N was the total number of articles produced in the time period in all *subject areas*.

The percentage change was calculated as follows:

$$\frac{n_t - n_{t-1}}{n_{t-1}} \times 100$$

where n_t is the number of articles produced in a given *subject area* in time period t and n_{t-1} is the number of articles produced in the *subject area* in the previous time period.

A comparison of the two variables, namely percentage contribution and percentage change (columns 2–4 vs columns 6–8), reveals that while *social science* showed that it is the major contributor to information literacy literature in each period of analysis (as shown in Table 7, whereby it contributed 33.33% in 1975–1990, 65.66% in 1991–2000, 62.27% in 2001–2010 and 49.84% in 2011–2018), it is *computer science* that seems to be growing and more stable in its contribution and consistent in the growth of the information literacy literature that is associated with the field. For instance, whereas there was a 90.10% and 44.75% increase in the number of articles in *social science* in 2001–2010 and 2011–2018, respectively, *computer science*'s information literacy literature grew by 92.98% and 54.96% in the same periods. This trend can be attributed to the information-age environment to which information users have become increasingly accustomed.

Types of literacies in the information literacy literature, 1975 to 2018

Table 8 provides the top 40 concepts that denote the most common literacies mentioned as the author-supplied keywords in the information literacy literature published between 1975 and 2018. There were 73 unique literacies that co-appeared with information literacy in the information literacy literature during the study period (see Figure 5). The following observations can be made in view of the results depicted in Table 8 and Figure 5.

Firstly, the number of literacies cohabiting with information literacy in the literature has grown from just two in 1975–1990 to 54 in 2011–2018. The only literacies that appeared in the information literacy literature in 1975–1990 were *information literacy* and *computer literacy*. These literacies were joined by *visual literacy* in 1991–2000. Thereafter, a proliferation of literacies took place, culminating in 54 literacies in 2011–2018.

Secondly, it was noted that *computer literacy*, which has consistently appeared in the information literacy literature, has been overtaken by several literacies so that it ranks seventh in 2011–2018, after *information literacy*, *digital literacy*, *media literacy*, *health literacy*, *health information literacy* and *media and information literacy*.

Thirdly, several unique terms have appeared in 2011–2018, implying the extent of information literacy's scope. The emerging terms include *scientific*

literacy, content literacy, financial literacy, data information literacy, transliteracy, metaliteracy, e-health literacy, civic literacy, copyright literacy and research information literacy. These literacies are labelled in various ways in the literature, for example *new literacies* (Karvalics, 2014; Koltay et al., 2016), *related literacies* (Koltay et al., 2016; Mackey and Jacobson, 2014;), *discrete literacies* (Mackey and Jacobson, 2014), *combined literacies* (Mackey and Jacobson, 2014) and *transformational literacies* (Karvalics, 2014), in an attempt to describe the contemporary information literacy landscape.

Fourthly, *information literacy* is still a very popular term among information literacy scholars. The keyword appeared in 2846 documents. In second position, but far behind in terms of the number of documents in which the concept co-occurred with information literacy, is *digital literacy*, which appeared in 87 documents, followed by *media literacy* (66). The latter two terms, which are among the recently introduced terms, seem to be gaining in popularity and attracting considerable interest among scholars. In fact, the two terms, among others, seem to have developed into independent concepts and therefore are not always tied to information literacy. For example, using the same approach used in the current study to search the Scopus database for *digital literacy* and *media literacy* yielded 2175 and 2162 publications, respectively, within the same time period (i.e. 1975 to 2018). The number of publications on *digital literacy* and *media literacy* that did not mention the term *information literacy* within their titles, abstracts or keywords were 2010 and 1990, respectively. In other words, approximately 92% of the literature on *digital literacy* and *media literacy* does not mention *information literacy* in the three fields mentioned above. There is therefore a need to investigate the independence of the other literacies associated with information literacy through such measurements as extent of word association, one of the techniques of co-word analysis. The strengths of word association may shed more light on the independence and the rise and development of the new and emerging literacies.

Finally, a number of literacies that appeared in the information literacy literature in 2001–2010 had disappeared by 2011–2018. These include *e-literacy, library literacy, project information literacy, scientific information literacy, adult literacy, course-integrated information literacy, electronic-information literacy, emergent literacy, emerging-technology information literacy, faculty information literacy, genomics literacy, geographic information literacy, graduate information literacy, information resource literacy, information tool literacy,*

leadership literacy, library information literacy, reading and writing literacy, science information literacy, technology literacy and web literacy. The disappearance of these concepts as author-supplied keywords in the 2011–2018 period does not necessarily translate to their extinction. Rather, it simply means that the terms, as author keywords, no longer appear in the information literacy literature, at least in their current form. It is therefore possible that some of these concepts are discussed in the information literacy literature under different formats. For example, *technology literacy* might be discussed under *ICT literacy* or *technological literacies* which appear in Table 8.

The conglomeration of literacies associated with information literacy, as well as the diversity and complex nature of the information and learning environments, have persuaded some scholars to suggest a name change for or redefinition of the information literacy concept (see, for example, Cowan (2014) as cited in Koltay et al., 2016: ix; Jacobson and Mackey, 2011). We believe that the situation will become more compelling courtesy of the fourth industrial revolution (4IR), which is largely driven by fusing technologies and agile technology, including the Internet of Things (IoT) (Nordin and Norman, 2018; Schwab, 2016; World Economic Forum, 2017). The other drivers or characteristics of the 4IR, such as ethics and identify, inequality, business disruption, disruption to jobs and skills, security and conflict, and innovation and productivity may well result in or require different types of literacies. So far, there have been attempts to develop frameworks that capture the evolving nature of information literacy, which has become increasingly associated with many literacies, as reflected in Figure 5. *Media and information literacy* (see UNESCO, 2013), *multiliteracies* (see Sukovic, 2017), *multimodal literacy* (see Tobin, 2018), *transliteracy* (see Sukovic, 2017) and *metaliteracy* (see Mackey and Jacobson, 2014) are some of the frameworks or models suggested to redefine *information literacy* in the 21st century.

Conclusion

Since its coinage in 1974, *information literacy* has evolved over time in terms of its scope and practice. Initially, information literacy instruction focused on computer education, that is, increasing users' understanding of what computers could and/or could not do. Hence, information literacy was closely associated with *computer literacy*. The scope of the concept grew, as it was no longer restricted to libraries and librarianship, but was also widely embraced by

educators as a formal instruction programme. However, major changes took place after 2001, in line with Park and Kim's (2011: 62) recommendation that there was a 'need to expand research territory of information literacy into areas beyond education into information literacy instruction for the diverse population in communities in the workplace, and other contexts'. The evolution of information literacy from a library- or librarianship-oriented concept to a multidisciplinary field has resulted in the introduction of 'new literacies', including *digital literacy*, *media literacy*, *health literacy*, *health information literacy*, *business information literacy*, *workplace information literacy* and *science literacy*. The 2011–2018 period has followed suit and witnessed the expansion of the scope of information literacy, as reflected in the number of keywords and literacies associated with the concept, thereby signaling the need to redefine the concept. Broadly speaking, the current study's findings support widely held suggestions that developments in and evolution of information literacy reflect the developments in as well as the characteristics and features of the information environment(s) (see Koltay et al., 2016: 127).

In addition, the concept is no longer restricted to *social sciences*, but is spread across 27 disciplines – as reflected in Scopus. This leads us to ask the following questions: Has information literacy lost its identity or gained additional attributes, thus acquiring a new identity? Is its identity really new? Is it feasible to have an information literacy model or framework that unifies information literacy models and related frameworks/models in the current diverse and complex information and learning environments? What is the future of information literacy? We do not have answers to these questions at present, but it is apparent that information literacy has evolved over time and we are likely to witness additional changes in terms of the following: learning and teaching, practice, instruction, technological uptake, relationship with other literacies, disciplinarity, content and context and so on.

Implications of the study for information literacy education, research and practice

The study has widespread implications for information literacy education and instruction, research and practice. One, the numerous literacies that have emerged in the last decade pose a big challenge for stakeholders (including librarians) in their pursuit to deliver effective information literacy programmes. Consequently, interdisciplinary and collaborative approaches to curricula design, teaching and learning as well as library instruction programmes are required

for an effective delivery of the programmes. The collaborators can be drawn from the library and information services, LIS teachers, teachers in other disciplines (see examples in Table 6) and learners who, according to Mackey and Jacobson (2014) are considered as active producers of information in digital environments. The metaliteracy model, developed by Mackey and Jacobson (2014), is a big consideration when designing information literacy programmes and may offer additional solutions to information literacy delivery in formal environments, which are characterized with social media technologies. Two, given the diverse territorial contexts (see Bruce, 2016; Lloyd 2005, 2010) and disciplinary contexts within which information literacy is practised, there is equally a need for increased research collaboration in information literacy as many fields seek to contribute to the deeper understanding of the scope and breadth of the concept, thereby strengthening the information literacy territory. As Bruce (2016: 242) opines concerning the future of research on information literacy, there is need to investigate 'how the outcomes from different studies can be brought together' or 'integrated perhaps to form a different level of theorisation about information literacy, and also to build theory of information, literacy or learning from within the field'. However, while the diverse contexts are likely to bring on board varied perspectives to achieve the aforementioned goal, they may at the same time complicate efforts and the need to explore and clarify the meaning of the concept as well as the body of research in the subject domain.

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Refining information literacy practice: Examining the foundations of information literacy theory

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Abstract

There are many ways for an academic librarian to contribute to the teaching and learning mission of an institution ranging from direct instruction to assignment design. Given this plethora of information literacy educational practices, what should academic librarians and educators focus time, labor, and resources on, and why should they do so? With an eye towards improving information literacy educational practice and addressing these fundamental questions, we examine the foundational philosophical commitments of two information literacy theories, Critical Information Literacy and Informed Learning. We find that these information literacy theories may be biased towards a 20th-century European worldview. This finding supports the idea that “good” IL educational practice in higher education requires active engagement with information literacy theory to justify what one does as an educator and to demonstrate why information literacy can be integral to learning in higher education.

Keywords

Critical Information Literacy, information literacy, information literacy theory, Informed Learning

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Introduction

Information literacy (IL) practice in a higher education context can be defined as what academic librarians and other educators do to enable students to become more sophisticated consumers and producers of information (UNESCO, 2017).¹ Providing instruction in the classroom, working with instructors to refine assignments, or measuring how information is used to learn subject content are a few examples of common IL educational practices.

There are many ways for an academic librarian to contribute to the teaching and learning mission of an institution. It raises important questions – *what* should academic librarians and educators focus time, labor, and resources on, and *why* should they do so? *Why* focus on direct classroom instruction, for instance, rather than training the instructor about IL or assessing how students are using information in a course?

If an academic librarian cannot answer *why* they are engaging in one practice over another, then they could be wasting valuable time, labor, and resources on efforts that do not further their goals. The answer, in part, lies in IL theory. Theory provides justification and guidance for IL educational practices.

With an eye towards improving IL educational practice and addressing these fundamental questions, we examine foundational philosophical commitments of IL theory. This includes epistemological questions about how we come to know things, metaphysical commitments about what the world is, and ethical questions about acting in the face of injustice. Insights

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gained from examining the philosophical foundations of IL theory may contribute to academic librarians' instructional knowledge and may provide new insights on how to approach and execute IL instruction.

We will investigate the philosophical foundations of two IL theories being used in the field today, Informed Learning, and Critical IL,² by examining the historical provenance of each theory. Subsequently, we argue that IL practice in higher education may be advanced through academic librarians identifying as scholarly practitioners who actively engage in dialogue about practice and theory. In this paper, we will:

1. make explicit the philosophical foundations of Informed Learning and Critical IL;
2. show the benefits of investigating IL theory in this manner, and;
3. demonstrate how investigations into IL theory may improve IL educational practice.

Analytical framework

This project provides a theoretical examination of the philosophical foundations of two IL theories for the end goal of improving IL educational practices in higher education. This will involve making the meta-physical, epistemological, or ethical assumptions of IL theory more explicit. In examining the relationships *between* the philosophical foundations of two IL theories, we aim to reveal potential problems that would need to be addressed to further IL educational practice. Comparing the philosophical foundations of two IL theories will provide a more in-depth understanding to why such theories are practiced in various ways and indicate ways to refine such practices.

This will first require an explanation of the basic tenets of the historical and theoretical aspects of Critical Theory and Phenomenology which ground Critical IL and Informed Learning, respectively. Next, we briefly demonstrate the link between such philosophical commitments and IL theory. Our analysis of Critical IL and Informed Learning yields two principal conclusions. First, a historical examination of the similarities of Phenomenology and Critical Theory reveals the potential for 20th-century Euro-centric bias in Critical IL and Informed Learning. This kind of finding demonstrates the value of investigating the foundations of IL theory. Second, to be a "good" IL practitioner in higher education means being a scholarly practitioner. IL educational practices can be effectively refined by academic librarians and other educators engaging in rigorous dialogue about

individual IL theories – determining their merits and shortcomings.

Critical Theory and critical theories

The phrase "Critical Theory," as a proper noun, refers to a particular philosophical movement, specifically "several generations of German philosophers and social theorists in the Western European Marxist tradition known as the Frankfurt School" (Bohman, 2016). One can think of the beginnings of Critical Theory, most notably from the work of Horkheimer and Adorno, as furthering Marxist thought by including the work of social sciences, as well as refining and modifying Marxist thought to make it more rigorous and address well-founded criticisms. The explicit end goal of Critical Theory is to advance human emancipation from oppression (Horkheimer and Adorno, 1972). The phrase "critical theory" refers to any such theory, in philosophy or any other discipline, which focuses on systemic forms of oppression and injustice. Critical Theory and critical theories originated as furthering and refining the thought of Marx – merging philosophy with other disciplines and approaches like psychology and sociology to alleviate human suffering and repression.³

Critique and Critical Theory

It is also important to note that the word "critical" is not synonymous with the contemporary notion of "critical thinking." Historically, the word "critical" was analogous to the concept of "critique" in the modern western philosophical tradition. German thinkers, in particular, have used the concept extensively. In the *Critique of Pure Reason*, Immanuel Kant (2009) sought to determine the limits of human reason. Hegel also used "critique" in a similar sense – he, in fact, critiqued Kant's critique of traditional metaphysics, arguing that Kant "was not free from the sorts of ungrounded metaphysical assumptions he criticized in others" (Redding, 2018).

Rather than critique the limits of "pure reason," or how the mind limits and shapes our experience of the world we live in, Marx critiqued socio-economic factors of labor. He did not talk about Reason in the abstract, but instead used Hegel's unique philosophical method, labeled the Hegelian Dialectic, to investigate the lived experiences of people working for their livelihoods in a capitalistic society. Hence, the common phrase that Marx turned "Hegel on his head." He sought to investigate the intersections of economics, politics, and class struggle. Marx's investigation is far afield from an intellectual critique of rationality, hence Marx's famous saying, "Philosophers have hitherto

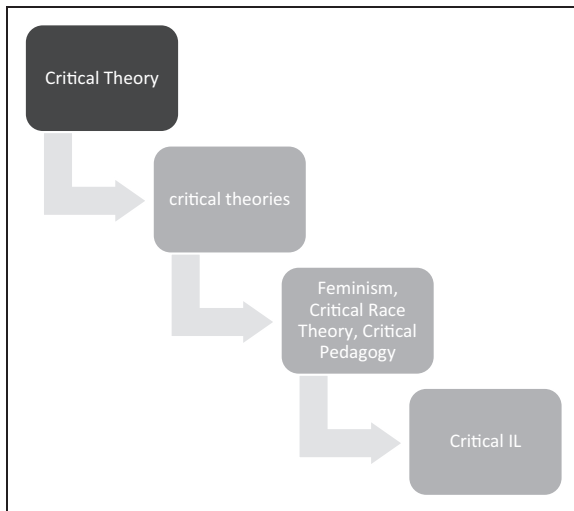


Figure 1. Historical progression of theories leading to Critical IL.

only interpreted the world in various ways; the point is to change it” (Marx and Engels, 1968: 30). Critique for Marx had real-world implication, and it dealt with the limits of capitalist notions of value and labor, while Kant and Hegel investigated the human mind and rationality.

It is for this reason that “Marx’s conception of critique became paradigmatic for the tradition of critical theory and continues to be so up until today” (Celikates, 2011: 101) Hence, Horkheimer’s (1982: 244) formulation that a theory is “critical” insofar as it seeks “to liberate human beings from the circumstances that enslave them.”. The word “critical” in “Critical Theory” then can be traced from 19th-century thought to contemporary critical theories. Whether the target of critique is Reason in the abstract or concrete socio-cultural concerns of latinxs in the workforce, the fundamental principles of examining limits and foundations are cornerstones of Critical Theory and critical theories.

Critical Theory and Critical IL

A distinct, historical line can be drawn from the original members of the Frankfurt School who created Critical Theory to critical pedagogy (specifically Friere and Giroux), to contemporary Critical IL (see Figure 1). Tewell (2018: 11) states that “As a theory and practice, Critical information literacy . . . aims to understand how libraries participate in systems of oppression and find ways for librarians and students to act upon these systems.” Critical IL scholarship draws heavily from Friere (Elmborg, 2012; Tewell, 2015) and Giroux (Kopp and Olson-Kopp, 2010; Pankl and Coleman, 2010). One of Elmborg’s main arguments for a Critical IL approach is that traditional

skills- and process-based IL instruction buys into what Freire describes as the “banking model” of education where the instructor feeds nuggets of knowledge to students. This approach is anathema to the kinds of social and real-world change that critical pedagogy advocates envision for education. Other LIS scholars argue that Giroux’s work can help academic librarianship address injustice and inequality brought about by a “capitalist, consumerist society” – helping students to develop a critical consciousness (Mirtz, 2010: 297). Libraries have the capacity to bring about more democracy and justice in higher education, yet this outcome requires more concerted efforts, such as academic librarianship enabling greater participation for historically disadvantaged students (Mirtz, 2010: 300) as well as the profession critically examining itself for how it may further inequity (Drabinski, 2016). The Critical IL perspective makes specific ethical demands on academic librarians.

A critical perspective is utilized in a classroom setting in a variety of ways. For example, Critical IL may emphasize a “democratic, collaborative classroom,” where an instructor will deliberately ensure all students have a chance to speak on an issue, so that the lived experiences of all students are valued and heard (Accardi, 2013: 41). A Critical IL approach may task students to investigate Library of Congress and Dewey classifications as anthropologists from the future to hypothesize on the values and norms on a society that organize information in such ways. (Tewell, 2018). Critical IL approaches have broached classroom discussions of power and inequality by tasking students to investigate the sources used in Wikipedia articles, and adding new citations to Wikipedia “about persons from groups that have been historically marginalized” (Foster-Kaufman, 2019: 272). Critical IL educators have also used Queer Theory in describing learning activities where students investigate how objective the peer review system is rather than simply telling students how it works or why it is used (Ireland, 2016). Critical IL can look very differently in the classroom and be steeped in a variety of critical theories – though the central notions of inequality and justice, among others, remain the same.

Phenomenology

As with Critical Theory, Phenomenology is both a school of thought and a disciplinary field of philosophy with a variety of offshoots (e.g. Heidegger’s existential phenomenology). Historically, it originated from work of German mathematician Edmund Husserl in the early 20th century. It can roughly be

defined as “the study of the structures of consciousness as experienced from the first-person point of view” and was initially conceived as a fundamentally new foundation for all of philosophy (Smith, 2018). Husserl found several contemporary philosophical approaches inadequately addressed questions such as: Does reality lie in the mind or an external world? And can the laws of mathematics and logic be reduced to laws of the human mind? To Husserl and, to varying degrees, many other phenomenologists who followed him, we must “bracket” questions of existence in order to more directly analyze what humans have immediate and unquestionable access to, their consciousness and thoughts. This has serious epistemological repercussions – Husserl uses this reasoning to put aside questions about objective truth in what we perceive, and instead prioritizes individual experience.

Intentionality

An important aspect of the phenomenological approach concerning how we experience the world is “intentionality” – or the “aboutness” of consciousness (Husserl, 1970: 330). To think is to think *about* something, to experience is to experience *something*. Our minds are directed towards things, whether or not those things are objectively real or fictional. The concept of intentionality attempts to answer questions like, how can the name “Fido” on a printed page, a picture, and the spoken word “dog” all “mean, represent, or stand for, one or several hairy barking creatures” (Jacob, 2019)? It is these kinds of characteristics that separate mental from physical phenomena – and begins to provide answers to metaphysical questions about reality. From this perspective, if we first investigate our mental phenomena, we can then better understand what we observe, how we experience things, and how our reality is constituted. Phenomenology has many different interpretations, most famously from Heidegger, Sartre, and Merleau-Ponty. These philosophers collectively argued that reality lies somewhere between subject and object, between perceived and perceiver.

Phenomenology and Informed Learning

Phenomenology takes a first-order perspective, focusing on an individual’s experience. Phenomenography takes a second-order perspective, aiming to describe “people’s experience of various aspects of the world” (Marton, 1981: 177). While Phenomenology describes the nature of individual experience and sense perception, phenomenography aims to understand multiple perspectives of a phenomenon. A phenomenographic

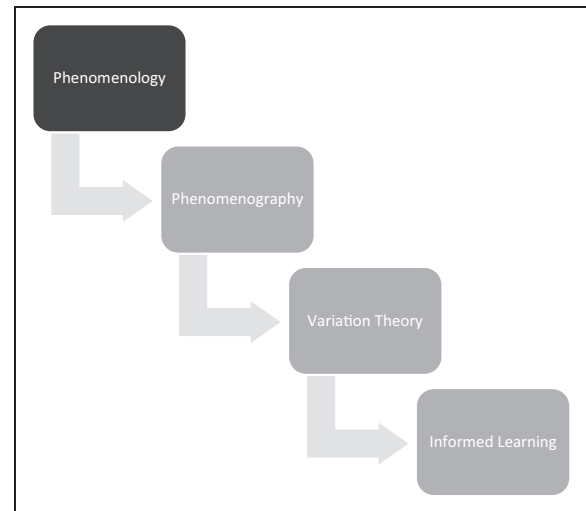


Figure 2. Historical progression of theories leading to Informed Learning.

study may investigate the varied experiences of university students’ understanding of basic physics – such as what forces act on a car driving down a highway (Johansson et al., 1985).

Variation Theory is a learning theory developed through reflection on phenomenographic research findings, which posits that learning may occur when learners become aware of key aspects of the phenomenon being studied (Marton and Tsui, 2004). Phenomenography and Variation Theory informed Bruce’s (2008) development of Informed Learning, an approach to IL that emphasizes “learning” as an outcome of engaging with information. Informed Learning suggests that learners need to become aware of key aspects of using information when they are involved in a learning process. Similar to the line that may be drawn between Marx, critical pedagogy and Critical IL, there is a clear trajectory between Husserl (and other 20th-century phenomenologists), Phenomenography, and Informed Learning (see Figure 2).

Informed Learning requires that students learn to use information at the same time as they learn disciplinary content, such as the facts, theories, or concepts. For example, Hughes and Bruce (2012) described an online cyber-learning course that focused on Master’s students learning through simulated real-life activities involving the use of online tools as students learned about theories related to learning in online environments. Maybee et al. (2016) studied Informed Learning in a writing course which focused on exploring language and gender topics by tracing and analyzing their evolution through scholarly discourse. This required students to engage disciplinary content, such as a feminist

theory, while simultaneously reflecting on how feminist literature evolved over a period of time.

As Informed Learning involves disciplinary content, academic librarians have collaborated with classroom instructors to develop Informed Learning activities that are implemented in the disciplinary classroom. Ranger (2019) describes working closely with faculty to apply an Informed Learning approach in a variety of communications courses at Grand Valley State University. At Purdue University, a large-scale course development program, Instruction Matters: Purdue Academic Course Transformation, uses the Informed Learning model to guide how librarians coach instructors to teach their students to use information to learn in undergraduate courses (Maybee, 2018). For instance, a librarian may help an instructor develop a learning activity where students need to find and synthesize information to answer an open-ended question.

Analysis

Given the briefly outlined theoretical links between Critical Theory and Critical IL, and Phenomenology and Informed Learning, it is now appropriate to discuss why such knowledge may be informative for IL educational practices. First, while IL theories may appear to play out differently in practice, Informed Learning and Critical IL have similar theoretical foundations. Both Critical Theory and Phenomenology are rooted in early 20th-century western Europe, suggesting a potential bias towards a specific way to view and experience the world. Second, we make the case that “good” IL educational practice requires active engagement with IL theory to justify what one does as an instructor and to demonstrate why IL can be integral to learning in higher education.

20th-century European bias

Critical IL and Informed Learning both have roots in early 20th-century western – specifically German – philosophy. Phenomenology is generally understood to have been founded in 1901 with Husserl’s publication of *Logical Investigations* (published in German). Critical Theory is generally understood to have been established by the “Frankfurt School” at Goethe University Frankfurt in approximately 1918 (Corradetti, n.d.). Philosophically, they both turn away from the scientific method to investigate the world (also called antipositivism). Both philosophies could also be employed to investigate more existential questions, such as the lived experiences of women (hooks, 1984) or the place of technology in modern life (Heidegger, 1977).

While the two theories share a common foundation in 20th-century western philosophy, they can appear to support drastically different IL practices. Let us first examine this in terms of a concrete instructional scenario, such as an instructor asking an academic librarian to provide an instructional session to help students complete their first research paper. Mirtz (2010) offers several Critical IL strategies, including giving a demonstration of the library webpage, a lecture on a basic search process, describing how a researcher may accomplish the task, and providing time for students to search on their own. Mirtz argues that these activities may be appropriate, but it is in *how* one provides instruction and whether students learn to become dynamic and reflective in the research process that is important. Adopting a Critical IL perspective, a teacher may ask students to consider who has access to the information they are engaging with, and what are the implications of some people having limited access to scholarly information sources. If there are enough content-related restrictions and not enough time for “establishing a critically thoughtful and socializing environment for thinking about information,” then outside activities like one-on-one meetings may be needed to address this (Mirtz, 2010: 301).

An Informed Learning academic librarian may take a different approach, emphasizing the practical outcomes of finding and using information like a scholar of philosophy. Such a librarian may emphasize the fundamentally different way one can go about approaching research, ranging from simply finding recent, relevant scholarship to viewing scholarship as a conversation within a community of philosophers (and philosophy students). An instruction session might begin by having students consider how information is used to make arguments in philosophic texts, and then have them create similar texts by determining what information sources support the argument being made. While various contextual factors may contribute to the instruction appearing more or less similar, the realization of the two theories in the classroom would look distinct and emphasize different aspects of IL. A Critical IL approach, for example, may emphasize an ethical dimension of information that an Informed Learning practitioner may not.

Within the LIS community, Critical IL and Informed Learning are considered distinct theories with *distinctly different practices*. What appears to be fundamentally different ways to approach IL practice is, in fact, rooted in similar answers to fundamental metaphysical, ethical, and epistemological questions. Not only did Phenomenology and Critical Theory originate from a similar place and time, but

they both prioritize lived human experience over scientific inquiry and investigate new notions of reality relating to experience (Merleau-Ponty, 2014) or being a black woman in higher education (hooks, 1994), as just two examples. The rich conversations about the best ways to approach IL educational practice draw from a narrower band of intellectual thought than what is typically acknowledged by practicing librarians, who may assume that theoretical IL approaches stem from a range of diverse intellectual history or varied philosophical commitments.

An alternative to leading IL theories could be one derived from American Pragmatism developed starting in the 19th century, where metaphysical questions about truth are resolved by observing what works, and meaning resides in practical consequences. Such an IL approach may focus on different philosophical assumptions than Critical IL or Informed Learning, primarily focusing on whether students have met intended learning outcomes and avoiding questions concerning the variety of students' experiences or if students have developed a critical consciousness that will ultimately lessen systemic oppression. An IL theory rooted in the American Pragmatist tradition may entirely sidestep issues about what IL is, e.g. an experience or tool to lessen systemic injustice, and instead focus on how IL can bring about a desired outcome, such as IL demonstrably helping students' grades on course assignments. A pragmatist may experiment with various IL theories and practices and apply them in different contexts depending on what has worked best in the past.

Another approach could use eastern philosophy to develop an ethical awareness for an IL theory, much like Critical IL attempts to do.⁴ Watsuji, a Japanese philosopher from the 19th–20th century, is critical of individualistic ethics “which he associated with virtually all Western thinkers to some degree” and instead argues for prioritizing both the individual and social nature of humans (Carter and McCarthy, 2017). According to Watsuji, ethical approaches that fail to address the important relationships an individual has with his or her family, society, and the environment are flawed (Carter and McCarthy, 2017). This approach emphasizes relationships over systems or economic aspects of ethics. In using this kind of philosophical approach to base an IL theory on, we may come to a fundamentally different way to address disinformation and misinformation in contemporary news – perhaps focusing more on our ethical responsibility to vet the information one shares with one's friends. This may also mean, in practice, tasking students to consider the ethical implications of

plagiarism from the ethical lens of what is owed to the scholarly community.

These are two short, yet illustrative examples, of the variety of philosophical ideas and traditions from which IL theory could draw. Such traditions may or may not be conducive to grounding IL theories, but what is most important to note is that there are many different answers to fundamental epistemological and ethical questions. The LIS profession need not limit itself to 20th-century European thought.

Without investigating the underlying philosophical positions of Informed Learning and Critical IL, some IL practitioners may be under the assumption that such theories are radically different. Using other disciplines like psychology or learning theory could yield further insight into the differences and similarities between IL theory. Such investigations could help advance IL theory which could in turn progress IL educational practices.

Virtues of being a scholarly practitioner: Implications of our investigation

Advancing IL practice necessitates a dynamic interplay between theory and practice, where practitioners continually question and refine theory, ultimately leading to better educational IL practices. If this approach is not supported and enacted by the profession, then we risk devolving into a kind of dogmatism, where the answer to: “Why do X in the classroom instead of Y” becomes an uncritical answer of: “Because an organization says so” or “That's what we do here.” Yet, which theory should librarians look to in their instructional and scholarly work?

Choosing a theory simply because it is backed by a large organization may be attractive for a busy practitioner looking for resources to support one's IL efforts. There is an *ACRL Framework for Information Literacy* sandbox replete with searchable classroom activities, program-level assessments, and professional development resources (ACRL, n.d.). Using the *ACRL Framework* to execute an instructional program is justifiable, given that academic librarians participating can explain the benefits of treating IL as a Threshold Concept (ACRL, 2015). Yet this may also be problematic, as choosing a theory or framework based on a professional organization brings a practitioner closer to theory but still avoids answering the fundamental question of *why* – “why the Framework instead of Critical IL or Informed learning?”

Critical pedagogy suggests that the *why* (i.e. the goal of instruction) is “action” aimed at undermining systemic oppression. Thus, instruction developed using critical pedagogy requires students to take

action. A Critical IL perspective in an undergraduate environmental studies course may focus on the power dynamics at play in the use of information to create new environmental legislation. As an outcome, students may create plans for a local protest or develop new policy suggestions to share with government officials that reflect their recognition of how information used to create and communicate about the new legislation disadvantages select groups. In contrast, the *why* of Variation Theory is for students to “experience” aspects of what they are studying of which they were previously unaware. The same course taught from an Informed Learning perspective would aim to have students learn to use information in new ways to recognize different perspectives on an environmental issue. As an outcome, students might be asked to role play as a legislator, community member, business owners, and so forth, to debate the new legislation.

Without a theory to provide a meaningful context for the project, then the librarian will not be able to answer the necessary question “*why* are we doing what we are doing?” If unable to answer the important *why* question, then he or she will be unable to ask for more resources to advance or change one’s IL efforts. A theoretical background for IL practice helps turn assessments and data into a meaningful narrative.

It is also essential to engage in critical reflection of one’s foundational assumptions and theoretical framework to answer this *why* question. While this questioning may not realistically be done frequently, ignoring the ideas and assumptions underlying the theories and practices we engage with hinders us from refining our IL educative practice, and impedes our ability to meaningfully contribute to student learning.

Baer (2016) highlights critiques of the “utopian” and idealist discourse of critical pedagogy, pointing to the lived experiences of those who felt social pressure against questioning critical pedagogy.⁵ She quotes Gore’s (2003) concern about the word “empowerment” being employed in ways that could serve as furthering domination. For instance, Gore argues that an instructor, believing they are “empowering” students, could unintentionally reinforce methods of domination by implying that the instructor allows students to act. Others are concerned that critical pedagogy’s emphasis on bringing about meaningful change through action may fail to take into account historical or cultural contexts which may prohibit a student from being fully “empowered” (Gore, 2003). This is not to argue that critical pedagogy or Critical IL is fundamentally flawed, only that there are legitimate critiques of Critical IL that are worth discussing. Asking and answering these

questions will help refine Critical IL practice, and academic librarians’ educative IL practices more broadly.

Whitworth’s *Radical Information Literacy* argues that the genre of the academic paper is so rigid as to be self-stultifying, being unable to “evolve” as follow-up studies are rare and fail to engage with practitioners in meaningful dialogue (Whitworth, 2014: 174). Furthermore, he describes “documented examples of teaching and educational practice that encourage[s] students to explore variation” as Informed Learning argues, but also claims that studies about the real impact such practices have are rarer (Whitworth, 2014: 174). This is a fair critique of Informed Learning. If it is unclear how useful investigating the variation of students’ experiences of using information to learn are, then why should a practitioner use practices described in Informed Learning scholarship?

The implication for tasking IL educators, who work day to day to further teaching and learning missions in higher education, with continually engaging with IL theory, is that to be a “good” practitioner means being a *scholarly* practitioner. To critically engage with IL theory and practices alike, academic librarians and other educators need to engage with the scholarly literature describing theories and practices, as well as comparing and contrasting different approaches. This could be implemented in a host of different ways, such as hosting scholars from diverse theoretical perspectives, “brown bag” lunches where constructive feedback is given on current projects, or forming a reading group where IL practitioners discuss seminal scholarship together.

Conclusion

In this paper, we investigated the metaphysical, ethical, and epistemological foundations of IL theory. It is worth noting that our analysis is limited – only tackling two IL theories among a variety used in practice. The philosophical traditions we use are also described broadly, with nuances lost in describing such complex theories succinctly. Nonetheless, we aimed to provide concrete examples of how an analysis of theory can benefit practice. Despite these limitations, we found evidence that some contemporary IL theories could be biased towards a 20th-century European worldview. This may or may not necessarily be the case. However, what is important is that such an analysis posits one of many “real” concerns that IL educational practitioners need to consider when engaging with IL theory.

Answering the *why* question – *why* execute an IL program from a *Framework* perspective instead of a

Critical IL perspective – is not simple. Analyzing IL theory, whether from a philosophical perspective or otherwise, can help answer this important question. Academic librarians concerned with student learning in higher education can better contribute to IL educational practice by identifying as scholarly practitioners, actively helping practice to refine theory, and theory to refine practice.

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Notes

1. While not discussing IL educational practices specifically, UNESCO's approach to media and information literacy is useful for our purposes.
2. While there are many other IL theories to consider, to limit the scope of this research, we will discuss only two theories.
3. Other theoretical perspectives are common with critical theories like feminist thought and critical race theory.
4. This paper acknowledges the complexity and variety of "Eastern" thought, and so recognize the inarticulate nature of the phrase "eastern philosophy."
5. Baer cites Thomas-Bunn's 2014 article "Are they empowered yet? Opening up definitions of critical pedagogy" and Ellsworth's 1989 article "Why doesn't this feel empowering? Working through the repressive myths of critical pedagogy".

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Theory into practice: Challenges and implications for information literacy teaching

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Abstract

This article is informed by a mixed-methods research study into librarians' critical information literacy awareness and teaching practices in higher education institutions within British Columbia, Canada, and the literature related to critical pedagogical and literacy theory. I explore the perceived gap in librarian knowledge of theories that underpin their pedagogy, the value of learning about and applying theories to information literacy teaching, and strategies that can enable improved awareness and application of theory to librarians' practices in higher education.

Keywords

Critical perspectives on LIS, information literacy and instruction, LIS education, pedagogy in LIS, principles of library and information science, services to user populations, standards and standardization of LIS practices

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Introduction

The perception that there are minimal or poorly articulated theoretical underpinnings to library practice is prevalent in the library literature (Bruce and Candy, 2015; Budd and Lloyd, 2014; Carlin, 2009; Hjørland, 2000; Myburgh and Tammaro, 2013; Tuominen et al., 2005). With a growing interest in developing more critical approaches to librarianship, there is considerable literature that reports the limited grasp of criticality with respect to librarian pedagogical practices (Bruce and Candy, 2015; Downey 2016; Radomski, 2000; Schachter, 2018). At the same time, new theoretical approaches to library information literacy teaching are being encouraged, such as through the Association for College and Research Libraries' (ACRL) *Framework for Information Literacy in Higher Education* (2015) which is informed by a number of teaching and learning theories and concepts, such as threshold concepts, transliteracy (defined as the ability to analyse critically information that appears in any form) (Thomas, 2008), and meta-literacy (incorporating self-reflection as an aspect of information access and use (Mackey and Jacobson, 2011). Within the context of the developing critical

librarianship movement, librarians have been looking to critical theory, critical pedagogy and critical literacy to inform the disciplinary development of librarianship (Accardi et al., 2010; ACRL, 2015; Swanson and Jagman, 2015; Tewell, 2018). While the critical information literacy (CIL) approach has had a North American academic focus, other theoretical approaches are also being explored to support developments in library practices. These theoretical approaches include a number of learning theories that have informed understanding of information literacy (IL), such as practice theory (Lloyd, 2010); metacognition (Budd and Lloyd, 2014), informed learning (Bruce et al., 2012); and social theoretical approaches, such as phenomenology (Limberg et al., 2012) and sociocultural perspectives (Limberg et al., 2012; Budd and Lloyd, 2014).

With respect to IL teaching, the literature recommends that librarians develop more explicit

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understanding and application of pedagogical theory into library practices. While IL teaching is the primary focus of many discussions, other library practices are being informed by developments in pedagogical and learning theories. James Elmborg has been frequently referenced with respect to identifying the theoretical underpinnings to the work of librarianship: “Building on the foundation of the process models and other relevant learning theory, critical literacy represents the next evolutionary stage in the development of a theory of educational librarianship” (Elmborg, 2006: 194). Elmborg (2006), Jacobs (2008), Downey (2016), and other authors have further developed the argument that librarians need to consider the interrelationship between all of librarians’ educational activities for understanding and developing practices:

When librarians talk about pedagogy, we frequently conflate it with information literacy sessions. Indeed, pedagogy and information literacy sessions are inextricably linked. However, I would like to argue that in order to work toward the theoretically informed praxis . . . we need to broaden our definition of pedagogy beyond the teaching of information literacy sessions and think critically about how we describe our pedagogical work. (Jacobs, 2008: 256)

Arguments that promote the need for librarians to better understand or develop their knowledge of teaching, learning and information theories also highlight the barriers that librarians encounter to developing effective practices – the most significant of which is that librarians’ knowledge may be categorized frequently as procedural rather than declarative in nature:

[P]rocedural knowledge tends to be implicit and hence inaccessible, whereas declarative knowledge involves quite explicit representation of its content, and hence tends to be conscious and accessible for different uses. (Dienes and Perner, 1999: 743).

The challenge of relying upon procedural knowledge is that it is difficult to teach effectively when librarians do not understand the theoretical basis of their knowledge. The paradox of procedural knowledge is evident in professions whereby “individuals master more and more knowledge in order to carry out a task efficiently [but] they also lose awareness of what they know” (Berry, 1987: 145). Similarly, the challenge of asserting librarianship as a distinct profession, and library and information science (LIS) as a distinct discipline, is only exacerbated by librarians’ inability to articulate the theoretical underpinnings of

our practices, and in contrast to other recognized disciplines. As argued in relation to the development of a discipline, Cornelius (2002: 419) states “Theory development is part of the working apparatus of a field of study, and the facility to develop theory must itself be kept in good order”. Furthermore, Carlin (2009: 4) claims that:

if information professionals are more concerned with the outcomes of theorizing from LIS rather than the theorizing itself, then they could be the unwitting recipients of inferior forms of theory. This is one reason why library workers should be engaged with the nature of theorizing in LIS, to contribute to and monitor the adequacy of theoretical debates conducted within the field.

These ideas will be further addressed in the following sections.

Information literacy and theoretical underpinnings

There are a number of education theories that have impacted the development of library pedagogy and IL practices, including practice theory (Lloyd, 2010); metacognition (Budd and Lloyd, 2014), informed learning (Bruce et al., 2012); and social theoretical approaches, such as phenomenology (Limberg et al., 2012) and sociocultural perspectives (Budd and Lloyd, 2014; Limberg et al., 2012). In particular the theories underpinning critical pedagogy and critical literacy have had significant impact on the development of critical librarianship and CIL, particularly in the North American environment (Accardi et al., 2010; Gage, 2004; Pagowsky and McElroy, 2016; Ryan and Sloniowski, 2013). Critical pedagogy stems from critical theory developed by the Frankfurt School, and arose out of Paulo Freire’s work with marginalized peoples in Brazil. This educational theory “seeks to understand and is concerned with the ways that schools and the educational process sustain and reproduce systems and relations of oppression” (Porfilio and Ford, 2015: xvi), and in ways that support the emancipation of oppressed peoples. Critical literacy may be described as “a process that moves education beyond skills-based learning (the ability to read and write) to one that engages students at a level that creates an ‘awakening of their consciousness’” (Schachter, 2019: 65, quoting Shor, 2009: 298); and as a “mindset; it is a way of viewing and interacting with the world, not a set of teaching skills and strategies” (Mulcahy, 2008: 16). As with other critical educational theories, critical literacy is intended to be emancipatory in nature – through reading and contributing to writing and discourse – to help students to

develop their awareness of, and means to address, inequalities in society (Wallowitz, 2008). It has been seen as a process that has application to IL, and in particular the context of critical literacy within wider literary theory, such as reader response theory, but applying a critical perspective, which:

questions who has the power in a text; whose viewpoint is being presented; and what the author appears to want the reader to think. This stance also considers whose voices are missing from the text and how these alternative perspectives might be represented. McNicol, 2016: 5)

The development of critical librarianship is based on the principles that are articulated in critical pedagogy and critical literacy, and is understood to form a foundation for developing library pedagogy and practices beyond skills development or instrumental approaches: “a critical information literacy can encourage and enable learners to systematically reposition themselves in relation to dominant and non-dominant modes and sources of information” (Luke and Kapitzke, 1999: 486). It has developed under this term, and in parallel with critiques of information literacy practices early in the 21st century (Marcum, 2002; Špiranec and Zorica, 2010; Tuominen et al., 2005), including the debates over how best to define IL: “there is no consensus on how to define the concept of information literacy and often both ‘skills’ as well as ‘understanding’ are incorporated” (Sundin, 2008: 27).

The definition of “critical” information literacy has evolved since it was first articulated by Luke and Kapitzke in 1999. It has been perceived as a means to “reframe conventional notions of text, knowledge, and authority, and in the process changes the traditional roles of students, teachers, and librarians” (Kapitzke, 2001: 453). Its roots in critical pedagogy and critical literacies are evident in more recent definitions: “Critical information literacy is a deliberate movement to extend information literacy further than the acquisition of the research skills of finding and evaluating information. Instead, it is the ‘reframe[ing] [of]conventional notions of text, knowledge, and authority’ in order to ask more reflective questions about information” (Simmons, 2005: 300). Elmborg (2006, 2016) has refined a definition of CIL over time, from “...developing a critical consciousness about information, learning to ask questions about the library’s (and the academy’s) role in structuring and presenting a single, knowable reality” (Elmborg, 2006: 198) to more explicitly addressing social justice implications for library teaching: “... an approach to

education in library settings that strives to recognise education’s potential for social change and empower learners to identify and act upon oppressive power structures” (Elmborg, 2016: 11). With recent definitions revealing the debt to critical pedagogy and critical literacy the definition continues to evolve “information literacy teaching that addresses critical consideration of information, its source and authority, and the implications of library teaching, regardless of context, for developing social justice awareness, including the power structures inherent in information production and use” (Schachter, 2019: 156). Even while the crystallization of a definition continues in higher education, the debate over whether “critical” information literacy is a distinct concept, or one contextualized to the North American environment of IL teaching, continues (Webber and Johnston, 2017).

Librarians’ understanding of critical theories

In 2014, Schroeder and Hollister published the results of a survey conducted with American academic librarians regarding librarians’ familiarity with critical theory. They determined that “[r]oughly two-thirds of the respondents reported that they had some understanding of a critical theory” (p. 99), even though only 12% reported being very familiar with the theory. In a recent mixed methods study involving questionnaires and subsequent semi-structured interviews with the teaching leads representing the British Columbia, Canadian public higher education libraries, I found similar results as in other North American studies (Downey, 2016; Schroeder and Hollister, 2014; Tewel, 2018). My findings identified that the majority of respondents (14 of the 24 institutions’ teaching leads) confirmed that they understood critical pedagogy, even though they were unable to fully define the term. Without the ability to define the conceptual underpinnings to practices, however, critical approaches to library practices will be limited in their effectiveness. What may have been considered discrete library activities in the past are now being explicitly interconnected through the developments of a specific library pedagogy, which seeks to incorporate IL teaching both within the classroom and in library educational activities outside of the formal teaching setting (Torrás and Saetre, 2009). “Library pedagogy” refers to the practice of library teaching and instruction within academic libraries, and has emerged as a concept following the expansion of IL teaching from single (one-off) instructional sessions to more reflective pedagogical teaching practices (Drabinski, 2014; Nicholson, 2014). These

developments have implications for IL teaching practices and the curricula of the subject disciplines in academia particularly with respect to the interface between the IL work that librarians are responsible for, and the incorporation of core literacy competencies or accreditation requirements (such as digital, multi-literacies, or visual literacy) within course curriculum (Blummer and Kenton, 2018; Harris, 2012), or through the development of interdisciplinary curricula (Simons, 2017). Furthermore, library pedagogy goes beyond formal classroom teaching to include research and reference services, library collections, and any documentation or guides that support self-directed learning.

With social justice frequently recognized as underpinning the values of the profession (Bales, 2017; Gregory et al., 2013; Jaeger et al., 2016) librarians across library sectors and nations have been actively looking to critical theories, including critical pedagogy and critical literacy, to inform specific library practices in support of social justice (Bales, 2017; Elmborg, 2016; Leckie and Buschman, 2010; Pagowsky and McElroy, 2016). Critical librarianship and CIL are recent theoretical development in librarianship that attempt to apply a critically informed theory to library practices. These directions in librarianship are seeking to connect theories more explicitly into librarianship. The benefits of doing so, the barriers, and potential opportunities for engaging in theorizing within librarianship, continue to be themes explored in the library literature (Myburgh and Tammaro, 2013; Schroeder and Hollister, 2014).

Procedural versus declarative knowledge and why it matters

In the research that I conducted with higher education librarians in British Columbia, Canada into their application of CIL the majority of survey participants stated clearly that they felt a need to understand how to apply CIL in practice. While librarians were able to describe aspects of CIL and demonstrate an understanding of applying criticality in their information literacy practice, few were able to explicitly define the multiple aspects of CIL as identified in the literature. When they described their critical practices, defined as reflective practices that aim to identify and address hegemony or implied bias in practice, most of the librarians expressed an implicit understanding of the concept of criticality, rather than the ability to articulate clearly a definition. In other words, they demonstrated procedural (implicit) rather than declarative (explicit) knowledge; their inability to define and explain their library pedagogies, drawing

on theoretical concepts, is problematic, and reveals these practitioners' knowledge is exhibited as procedural knowledge. Librarians' knowledge, resting in the procedural rather than based on a deep understanding of theoretical underpinnings, should be a concern to the profession (Crowley, 2017; Dienes and Perner, 1999) as "[d]ependency on context and embodiment makes implicit knowledge almost impossible to convey to others . . . and renders explicit knowledge superior with respect to . . . teaching" (Schilhab, 2007: 236). In addition, understanding tacit knowledge is important for critiquing practices: "tacit practices and assumptions in order to position disciplinary norms and structures, which can potentially contribute to oppression or exclusion, as sites for critical examination" (Miller, 2018: 412). Due to the many different contexts in which librarians work, the ability to access and convey the theories that inform our practices, is critical to the development of librarianship in the 21st century (Carlin, 2009; Myburgh and Tammaro, 2013).

Within the higher education context and IL teaching, for example, without librarians' ability to define the "why" of our practices – from collection development to information literacy teaching – convincing the teaching faculty to allow librarians to teach in new ways within their courses will continue to be a challenge. As long as librarians are unable to define the how and why of practices it will be difficult to convince other professions of the need for the expertise of librarianship, as a distinct LIS discipline (Bombaro, 2014; Church, 2003; Crowley, 2017; Manuel et al., 2005; Nalani Meulemans and Carr, 2013).

Barriers to learning about theory

Librarians have been actively reflecting on their need to understand theory better (Downey, 2016; Shroeder and Hollister, 2014; Tewell, 2018). In my study of the higher education libraries in British Columbia (BC) when asked how they perceived a need to understand better CIL, the majority stated that they needed to learn how to apply CIL in practice. Some of the comments included: "applying it in a meaningful way"; "apply it effectively"; and "we could be more intentional and consistent about our application of CIL theory". The application of CIL includes potential developments in both teaching and reference practices. In trying to identify ways that this could be accomplished surfaced a number of challenges that are consistent in the literature related to developing practices in librarianship (Accardi et al., 2010; Drabinsky, 2016; Tewell, 2018). These challenges include resistance to change, the barrier of time, and

lack of LIS education and professional development opportunities related to understanding theory. Barriers identified in the study of BC librarians were similar to those in the literature, as outlined in the following sections.

Addressing institutional culture and resistance to change

One barrier to librarians' aspirations to apply new practices and theoretical approaches has been identified as the organization's culture (Limwichitr et al., 2015; Maloney et al., 2010; Ramzan and Singh, 2010; Seymour, 2012; Wilkinson and Bruch, 2014). Within my study with Canadian academic librarians, a significant number of respondents who represented the teaching at their institution (42%) identified the challenge of bringing about change in their institutions as a significant barrier, including the hurdle of developing the teaching faculty buy-in to be able to effect change. This theme included the impact of the organizational culture on the potential to change and evolve, as reflected by comments such as "innovators here are suspect", or simply the challenge that librarians encounter of trying to implement change to their IL pedagogy within the context of a discipline faculty members' course: "Mainly convincing faculty to let me try something new". Other barriers revealed as an aspect of change resistance included a lack of interest by the librarians themselves, and poor training in or understanding of pedagogy.

What has been revealed in my research, based on the thematic analysis of questionnaire and interview data, is that barriers to incorporating new theoretical approaches are often institutional rather than internal to the library. Barriers that were surfaced included the teaching faculty being unsupportive or disengaged from librarian pedagogical developments. Librarians felt discouraged by lack of understanding about IL teaching and their library pedagogy within their own institutions. Librarians reported that "there needs to be awareness at the institutional level... among senior educators, the senior leadership or senior education team, about what [are] the changes in information literacy"; and "... there's often a failure of imagination" related to librarians themselves. The specific experience of a lack of imagination leading to developments in practice suggests librarians' internalized attitudes based on historic barriers.

As noted earlier, some librarians identified examples of their ability to engage with theory related to CIL, threshold concepts, and other learning theories. In particular those theories highlighted within the ACRL *Framework for Information literacy*,

particularly learning theory involving threshold concepts and metaliteracy, were remarked upon as far as how engaging with theory improved librarians' interactions with the teaching faculty. Using the *Framework* was reported by one interview participant to offer a means of gaining the interest of the teaching faculty, particularly with the theory of threshold concepts:

I've presented it here to our faculty at our teaching and learning conference in a poster format. And I got a lot of traction that way. Because faculty could recognize that there is a point that students cross in their programs that changes fundamentally how they think about things. (Interview participant)

The limited opportunities for engaging with the teaching faculty on pedagogical or critical IL theory, however, suggests that this may be one of the areas where it would benefit libraries and librarians to invest their time for improving relationships with teaching faculty and enabling new library pedagogy practices to be accepted (Tuominen et al., 2005).

It is also interesting to note that my study also revealed significant resistance to change by librarians themselves. A quarter of the BC public higher education libraries pointed to librarian resistance or lack of interest by their librarian colleagues, as a significant barrier. This is consistent with the literature and librarians' experiences in other contexts (Limwichitr et al., 2015; Maloney et al., 2010; Ramzan and Singh, 2010; Seymour, 2012; Wilkinson and Bruch, 2014). Addressing librarian resistance to new approaches is a critical first step in achieving the aim of implementing new theoretical approaches to library practices. In the higher education context, this can be accomplished by librarians engaging with educational learning theories, workshopping theories into practices, and mentorship for those who have limited awareness of theories. Librarians could also focus on partnerships with other academic services, such as the teaching and learning services and working collaboratively with the teaching faculty as a shared approach to pedagogical developments (Bolan et al., 2015; Dawes, 2019; Otto, 2014; Seal, 2016).

Support for library scholarship: Addressing the barrier of time

Barriers to librarians' ability to learn about and apply new theories and approaches to their practices have been identified in the literature (Booth, 2011; Gross et al., 2018; Hess, 2015; Kim, 2005; Tewell, 2018; Yearwood et al., 2015) and these barriers include a sense of lack of time to learn about new theories.

A recent study by Tewell (2018) reported librarians' sense of lack of time as a barrier to information literacy teaching. This barrier included the amount of time needed to prepare for classes; the amount of time available to teach IL in a single class; and the lack of time to increase IL teaching to reach a significant portion of the institution's student body (Tewell, 2018). Addressing the lack of resources in any one institution is possible through peer support and sharing initiatives between institutions. Partnering with teaching faculty and through the teaching and learning services in individual institutions could be another way of addressing the lack of time and teaching resources, as described in the next section, and can incorporate opportunities for librarians to lead scholarship into teaching and learning theories within a supportive environment. Underpinning all of this potential activity is the premise that improving knowledge of teaching and learning theories will support the development of library practices, overall.

The development of practical application of new models of theory-informed IL teaching are enabled through participation in peer networks (Bilodeau and Carson, 2015; Carson, 2014; Osborn, 2017; Walkley Hall, 2018). Sharing not just the theoretical implication of practices but also the implementation strategies offers great potential for the development of practices across libraries. An expectation of scholarship and research into practices and theory would involve a commitment at library association and institutional levels, in support of practitioners

Librarian education

Librarians have traditionally had little teaching training or pedagogical development as part of traditional library or iSchool curricula, even though teaching is a significant component of the work of librarians in all contexts (Helkenberg, et al., 2018; Schroeder and Hollister, 2014; Sproles et al., 2008; Wheeler and McKinney, 2015; Xue et al., 2019). "While K-12 teachers take numerous classes on teaching methods and educational psychology . . . before they're thrown into the classroom, most non-school librarians must learn on the fly or from colleagues at conferences" (Hodge, 2015: 155). This lack of exposure to pedagogical theory, and the lack of attention to the development of pedagogical expertise through the library school curriculum, may lead to ineffective teaching practices in new librarians. A response to this challenge should come from the institutions that teach the librarians to: (1) offer more structured pedagogical coursework; and (2) further encourage librarians' engagement in both the scholarship of librarianship

and that of teaching and learning, as expectations of their contribution to the development of the profession. A specific course on the developments of library pedagogy, including the intersections of critical theory, critical pedagogy and critical literacy with the work that librarians have more traditionally been responsible for (IL) would be beneficial for librarians intending to work in any library sector.

Further or continuing education should also become an important mandate for the library schools (iSchools) to support librarianship's development and scholarship. The library schools could help to close the gap in library scholarship, beyond the graduate degrees, by offering courses to graduates in the developments in library pedagogy and critical librarianship, as well as other emerging topics.

Collaboration with other professions

Badke (2017) argues that librarians must work with their peers beyond the library environment to develop IL teaching within their institutions: "the task of information literacy needs to be turned over largely to disciplinary faculty, guided by the information literacy expertise of librarians" (p. 24). Using an approach that promotes an understanding within institutions related to library pedagogy, and then encouraging discipline faculty to integrate IL within their curriculum, is a strategy found in other pedagogical developments, such as through the scholarship of teaching and learning. Potential to explore and share library pedagogical developments through incorporation into institutional teaching and learning initiatives is a significant opportunity for librarians to develop a deeper knowledge of teaching and learning theories that further lead to development of specific library pedagogy.

Current developments in library pedagogy challenge the persistent instrumental or skill-based IL teaching to move toward more transformative learning experiences for students (Accardi et al., 2010; Swanson and Jagman, 2015). The nature of librarians' procedural versus declarative knowledge related to teaching and learning theories, including CIL, is both a barrier and an opportunity to explore new pedagogies. This opportunity can be expressed through processes that librarians can undertake to work on pedagogical practices with the teaching faculty. In particular, librarians and teaching faculty frequently share expected outcomes and work together on shared teaching approaches for information teaching within the disciplines; but this is not a universally consistent approach. Barbara Fister (2013) came to the same conclusions in her LOEX presentation when she

recommended that “[l]ibrarians should spend as much time working with faculty as working with students” (cited in Poremski and Lilton, 2013). In order to meet these aspirations, librarians would benefit from engaging more effectively with the teaching faculty within their own institutions. Reports by librarians that some of their most effective work in embedding IL teaching has been through partnering with the institutions’ teaching and learning services, leads to further recommendations (Schachter, 2019). When librarians engage with the teaching and learning functions, they have opportunity both to develop their own teaching and library pedagogies, and to create supportive allies who are open to partnership opportunities that embed information literacy across the curriculum. At the same time, the scholarship of LIS and developments in librarianship could benefit from support across all library types, encouraging librarians to conduct research, to look to current research on developments in librarianship, and to seek opportunities to attain an understanding of the theories that underpin our practices.

Conclusions

While studies have shown that librarians express an interest in learning about theories that underpin their practices (Accardi et al., 2010; Downey, 2016; Schroeder and Hollister, 2014) there is evidence of lack of awareness and lack of application of theory to the development of library practices (Bruce and Candy, 2015; Budd and Lloyd, 2014; Radomski, 2000). Developments in library practices, such as in the recent publication of the *ACRL Framework for Information Literacy*, are explicitly attempting to incorporate aspects of educational and learning theories into developing IL practice. Librarians are being encouraged to seek a greater understanding of theories that inform practices, whether that is through independent study, accessing and applying research being conducted, or through the leadership of associations and library educational institutions. Whether in support of developing social justice initiatives, decolonizing library practices, supporting the critical thinking of students in an age of “fake news”, or improving the recognition of librarianship as a discipline, the development, articulation and application of theories that underpin library practices is essential to the future of the profession.

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Playful learning for information literacy development

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Abstract

Play is often seen as frivolous, childish, suitable only for young children. In contrast, this paper will discuss the idea that using playful learning approaches is often a good fit for the development of information literacy in all ages. To do this, it will outline the meaning of information literacy that the author takes, explain where playful learning is placed within learning theories and pedagogies, and show why and how they fit together. Examples of playful practice in library and information literacy training will be given to illustrate current practice, together with gaps within that practice. It will briefly address some of the barriers to using playful learning approaches in information literacy development, and offer some ways forward for information literacy practitioners.

Keywords

Game based learning, information literacy, pedagogy, playful learning

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Information literacy

While there are many definitions of information literacy, for this article we are taking an approach aligned to those definitions and frameworks that recognise the contextual, or relational nature of information literacy.

Information literacy is the ability to think critically and make balanced judgements about any information we find and use. It empowers us as citizens to reach and express informed views and to engage fully with society. (CILIP, 2018)

These are different from some of the older definitions of information literacy in that they focus on the way that people approach information, which may vary depending on subject area and context. They tend to stress critical thinking and reflection, rather than competencies that may be presented as a checklist of characteristics that combine to make up an information literate person.

Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new

knowledge and participating ethically in communities of learning. (ACRL, 2016)

This contextual, relational nature of information literacy started with the work of Christine Bruce (1997), but is now widely adopted (e.g. Andretta, 2012; Boon et al., 2007; Bruce and Hughes, 2010; Edwards, 2006; Walsh, 2012; Williams, 2007). It can be seen reflected within the definitions given above, particularly through this shift towards phrases such as ‘reflective discovery’ (rather than ‘search’) and making ‘balanced judgements’ (rather than ‘evaluate’).

Within this paper, we will refer to information literacy in line with these approaches, as being something that is deeply contextual, something that it is problematic to teach directly (as it depends on the context in which each person is operating), but a set of behaviours, attitudes and skills that are important to help people become fully engaged members of society and their communities.

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Playful learning

Playful learning is an approach that recognises that playfulness, a mental state that is characterised as being open to play behaviours, can be beneficial to learning. It can use a range of techniques and strategies to enable that playfulness, including formal games, to gain the benefits of play in learning. Playfulness, in enabling play to occur, rather than the particular aspect of play that emerges, is the important feature. It is a state of mind that includes a willingness to 'try something new; to attempt something difficult where success is not guaranteed' and can 'embrace whimsy, the spirit of the carnival, creativity, humour, surprise and imagination' (Whitton and Moseley, 2019: 14). As such, playful learning can sometimes enable the unexpected to happen, as learners explore new possibilities and learn through failure.

Nørgård et al (2017) describe how implicitly playful structures within a teaching approach help to build a magic circle where it is safe to play. These include encouraging a 'lusory attitude' (Suits, 2005), or an openness to play, amongst learners; encouraging an acceptance of democratic values and openness, where learners feel they are valued; enabling an acceptance that failure is a normal part of learning; and recognising that playful learning is intrinsically motivated, rather than being dependent on external rewards. These structures, in Nørgård's model, help to enable an environment of active and physical engagement with learning activities: one in which it is easy to collaborate with a wide range of people; with an openness to new experiences and possibilities the norm, and novelty and surprise being welcomed. They discuss how the game structures that most people might be familiar with (such as engaging game mechanics) are only the surface layer of any truly playful learning approach, dependent on the deeper layers outlined above.

Playful learning has traditionally been situated within children's learning, particularly in young children. Key learning theorists, such as Piaget and Vygotsky discuss at length how children learn through play. For instance, Vygotsky's (1978: 92–104) Zone of Proximal Development in play is central to the creation of situations where the child can creatively imitate others to enable learning to take place. Piaget (1962) puts play less central to the learning of new concepts, but important to allow the child opportunity to practice ideas that they may have already learned, allowing them to make their environment match their developing concepts for this practice to take place.

Both of these have been built into constructivist learning theories, that is where knowledge is constructed based around building upon the learner's prior knowledge, which is often negotiated socially. Constructivist learning theories are often applied to adult learning, though the theoretical basis was developed within children's learning. Particular pedagogies that are aligned with constructivist learning theory include active learning, problem-based learning, experiential learning and constructionism.

These learning theories often lose explicit elements of play when articulated into specific pedagogical approaches, though they may still be implicit. For instance, Active Learning, which may be thought of as 'learning by doing' (Gibbs, 1988), is a constructivist approach. It may not discuss play directly, though many active learning techniques are inherently playful. Similarly, inquiry-based and problem-based learning both construct an environment where people are challenged to explore a problem, tend to be group based, and often require you to play a role (which may be a professional viewpoint) against which the learning takes place. They look much like a game, where the rules are set by a mixture of the assessment guidelines and the constructed reality of the profession in which students may be imagining themselves. They include elements of role play and may be thought of as quests, simulations or puzzles to be solved. In reporting results from inquiry-based or problem-based learning we may make resources to show our results, and use storytelling to present what the group learnt and how they learnt it. These are clearly elements within playful learning approaches (Whitton, 2018), though they may not be expressed as such to learners (Table 1).

Within adult learning, and Higher Education in particular, the 'lusory attitude' (Suits, 2005) is often not explicitly enabled, that is, the acceptance of the arbitrary rules of a game in order to facilitate the experience of play, that transition into the magic circle of play. This lusory attitude, the psychological acceptance of play, can be seen as vital for a learning space to emerge as truly playful, and for the learning activities to become meaningful (Nørgård et al., 2017).

Attempts to develop specific playful learning pedagogies, such as in Figure 1, clearly 'mirror core elements of constructivist learning' (Nørgård et al., 2017: 277), while adding explicitly elements of playfulness, such as novelty and surprise.

Playful learning pedagogies, in young children or in adult learners, whether the principles are explicitly stated, or implicit in many activities, can therefore be seen as coming from a constructivist approach. The

Table 1. Playful learning: Tools, techniques and tactics.

Playful learning . . .	Description	Examples
Tools	Objects, artefacts and technologies that signify a playful environment.	Games Toys Simulations Puzzles Virtual environments
Techniques	Pedagogies and learning approaches that facilitate play.	Role play Making Performance Problems Quests
Tactics	Mechanics and attributes that engender playfulness.	Surprise Humour Chance Competition Storytelling Mystery Badges

Source: Whitton (2018).

nature of play, which has an inherently socially negotiated aspect to it, perhaps pushes playful learning into a *socially* constructivist approach to learning.

Playful learning approaches in teenagers and adults, 'have the potential to improve the higher education practices of students and tutors' (Whitton and Langan, 2018), through the increase in 'fun' and enjoyment, through increased creativity (Chang et al., 2011), and the ability to encourage Playfulness; Practice; Engagement; Scaffolding; Feedback; and Digital Literacy (Whitton, 2012). It creates safe places to explore and innovate as learners (Walsh, 2015), particularly through the use of metaphors (Francis, 2009; Gauntlett, 2011). It can be seen as especially important at transitional periods, particularly through the innate social aspects of play, which help to provide 'a non-threatening forum for experimentation and a means to form a cohesive subculture/group in which the student feels a sense of belonging or relatedness' (Cooper, 1996: 33).

These transitional periods, where people may play with belonging to new groups and echoing the language and concepts they find within, have significant overlaps with the idea of threshold concepts (Meyer and Land, 2003). Students do exactly the same thing in the 'liminal spaces' of this theory, where they play until they achieve understanding – a transformative step in their development. When learners are in these liminal states, struggling to understand concepts, they tend to move between old and new, or growing,

understandings. This can feel risky and unsafe to learners, so they tend to try to situate themselves in the space through mimicry of the language and structures they see presented to them.

This can be a way of constructing their own safe spaces while undergoing their learning journey (Cousin, 2006), analogous to role play, where the player inhabits a safe space through inhabiting an alternative character. It feels much like the 'lusory attitude' (Suits, 2005) required to enter play. As we need to accept the arbitrary rules of a game to enter it playfully, so we need to accept the same rules around language and behaviours that we see people mimicking as they move towards fuller understanding of threshold concepts. In the case of threshold concepts and becoming embedded in a particular discipline, the rules are often hidden, making it even more playful, requiring experimentation to discover how to play the 'underlying game, which requires the learner to comprehend the often tacit games of enquiry or ways of thinking and practising' (Land et al., 2010: x).

The fit between playful learning and information literacy development

If we see playful learning as fundamentally socially constructivist in approach, where meaning and understanding are created in relation to the context in which we are operating, and in negotiation with our colleagues, then this makes it a good fit for the development of information literacy. Information literacy is not a purely individualistic feature: it is something that develops as we interact with information within a specific context, and in relation to others operating within that context. This applies whatever the age group, or subject matter, under consideration, whether we are discussing a child doing their homework, or a member of a fire service using information within their job (Lloyd, 2005).

As information literacy develops contextually, so pedagogies that draw upon learning theories that recognise the socially constructed nature of knowledge and learning should fit well. Playful learning has been shown above to be a pedagogical approach that does this for all ages, even though it tends to be seen as one that is typically taken with young children.

There are many examples (e.g. Angell and Tewell, 2015; Broussard, 2012; Smale, 2011; Walsh, 2015; Wilson et al., 2017) of taking a playful learning approach with a range of ages in libraries, particularly within Higher Education settings, which may be a reflection of the focus on this within Higher Education, and the culture of dissemination through books and articles. Unfortunately, few of the examples of

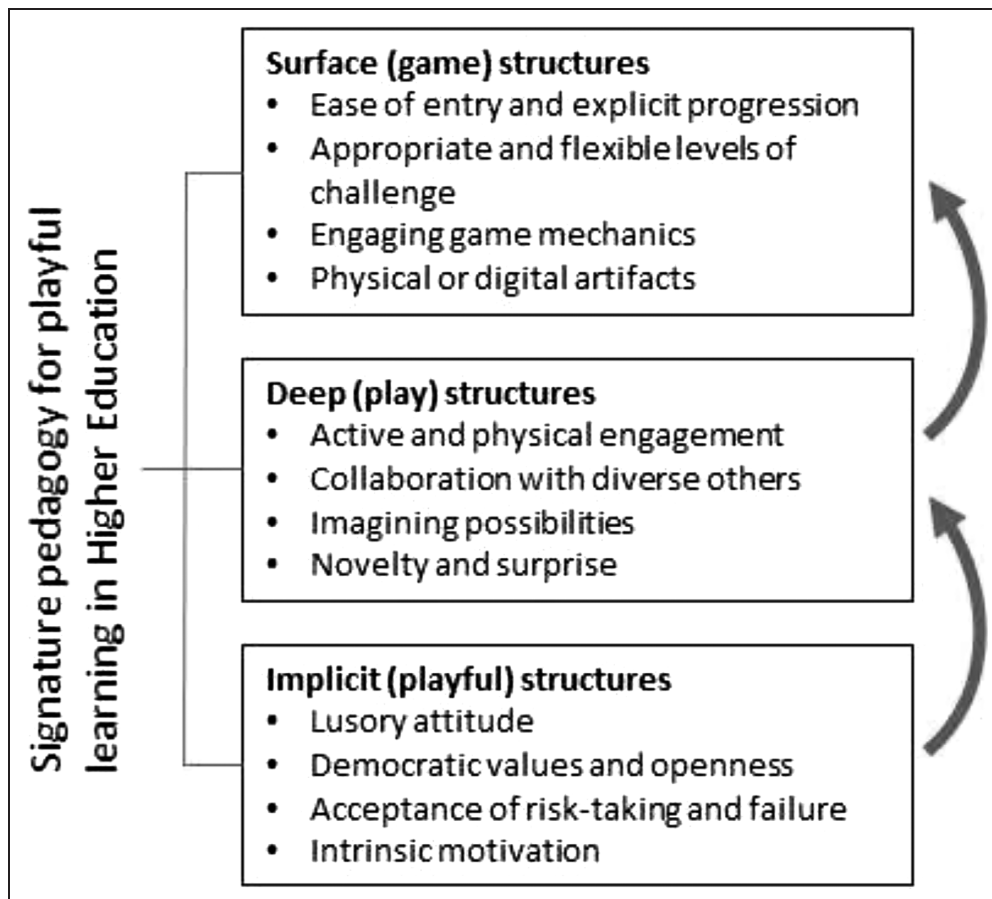


Figure 1. Signature pedagogy for playful learning in Higher Education.

Source: Nørgård et al. (2017: 278).

play- and game-based learning reported in the literature explicitly address learning theory (Wu et al., 2012), which is echoed in the literature on playful learning and information literacy.

It can be seen, however, that taking a contextual, relational approach to information literacy suggests that it is developed in relation to others, building upon prior knowledge and experience. Information literacy development fits into the constructivist approach to learning discussed above. Any pedagogical approach, therefore, that supports a social constructivist approach to learning, could be seen as a good fit for such development. This seems re-enforced by the application of threshold concepts to information literacy within the most recent ACRL Framework for Information Literacy for Higher Education (ACRL, 2015). Threshold concepts (Meyer and Land, 2003), recognise the idea that learners spend time in liminal learning spaces before gaining full understanding of these key concepts. They may echo language that they have heard, practice with ideas and skills, before moving across that threshold of understanding that situates them within a professional (or educational) context. This sounds like the socially constructed learning that

is discussed above, and particularly the idea that playful learning is powerful within transitional learning spaces (Cooper, 1996).

The idea that playful learning is aligned with the way that people develop information literacy seems to be supported, suggesting that playful learning as a pedagogical approach should be effective with adults, as well as younger, learners. However, despite the examples we have of games and play in developing information literacy, they rarely mention ‘play’ as a driver beyond ‘engagement’ or fun. This is despite the idea that play is always engaging being problematic (Whitton, 2018), as although play itself may be engaging, there are barriers to achieving a play state in learning situations. We cannot force people to play (many definitions of play include this as a core component), and there are barriers to anyone who is not a young child playing, as well as for the use of playful learning approaches.

Barriers to using playful learning

Many of the examples of playful learning in information literacy development from the literature focus on

structured games, or gamification, and only lightly touch on the concept of play or playfulness. This is not too surprising, as *play* is often perceived as a childhood, or child-like activity. Information literacy in early childhood, the time that play is seen as most acceptable, is rarely discussed. By later childhood, and particularly adulthood, play is increasingly seen as inappropriate, as potentially embarrassing and requiring ‘alibis’ to enable it to take place (Deterding, 2017).

This is especially true for free or imaginative play activities, and opportunities to take a playful attitude to work or education are significantly reduced as we get older (Van Vleet and Feeney, 2015). Play can even be seen as becoming a ‘political act’ (De Koven, 2014; Koh, 2014), one that makes a statement about how we interact with the world, and one which requires a certain amount of bravery to embrace. This goes some way to explaining the focus on formal games, especially computer games in the literature on playful learning and information literacy instruction, as these sorts of formal games provide a vehicle in which play is formalised, reducing the opportunity for this embarrassment. Sometimes explicit ‘alibis’ such as ‘fun’ or ‘increased engagement’ are used to justify games (Whitton and Langan, 2018), again reducing the explicitly stated benefits of play beyond these elements.

There are ways of explicitly making play more acceptable for all age ranges. Walsh (2018), writing about permission to play in Higher Education, suggests that this can be done through giving cues from the time a learner starts; making the environment conducive to playful activities; using tools like learning objectives to put agency in the hands of the learner through structural invitations to play; using playful pedagogies; and easing people into play by inviting it, not forcing it. These are expanded upon below.

Induction or orientation tasks, those activities that happen **at the time a learner starts**, preferably at a new institution, but also at the start of course or module, can act strongly to give cues around normal behaviour. The initial days and weeks in a new setting is where the new ‘frame’ of social expectations are set out, and prior expectations are reinforced or destroyed. So interactive, playful activities and games can signal to learners that it is the norm to learn through play in that context. Introducing play at a later date, once those norms of behaviour have been set and reinforced, is much more difficult than introducing it an initial transitional period.

Making the environment conducive to playful activities, or giving environmental invitations to play signal to learners that the environment they are in is

conducive to play. Often teaching spaces, like lecture theatres or libraries, immediately signal particular ways of behaviour. People expect to be passive, quiet, receivers of knowledge, rather than active participants. To interfere with this perception, it can help to consider the space in which we teach and how we may signal playful behaviours within them. We can use objects on tables such as Lego or modelling clay, pens and paper (to encourage thinking with your hands), and bubbles or fidget toys (as distractions as concentration aid). In classrooms without fixed seating, we can move tables into different configurations (or remove them entirely), encouraging activity, groupwork, and active modes of participation.

Using tools like learning objectives to put agency in the hands of the learner through structural invitations to play disrupts the traditional power structures normally found within teaching at all levels. These tend to focus power on the teacher, lecturer, librarian, as the person who is imparting knowledge to the learner. In play, however, power is normally more evenly distributed, with players able to change the rules to suit the group that is playing at the time. In order for learning activities to be truly playful therefore, more of the power needs to be in the hands of the learners. For instance, although learning objectives are important, they should be set in a way that allows serendipitous and emergent learning to happen, with the learner able to diverge from pre-set objectives. With assessment, regurgitation of facts discourage play, whereas creative exercises that promote critical thinking can encourage it.

Using playful pedagogies is perhaps one of the most explicit invitations to play in learning and teaching. Designing lessons as playful learning experiences ensures that those invitations are built into the pedagogical approaches used. Learning games can be used to allow self-discovery of facts and processes, simulations used to practice skills, and creative exercises to apply and knowledge all encourage a playful approach to the classroom.

Easing people into play by inviting it, not forcing it, fits alongside the normal definitions of play that say it must always be a voluntary activity to count as play. This flags the importance of recognising that people can choose not to truly ‘play’ while still carrying out learning activities that are designed to enable play. It is important that playful learning activities should still be good, or effective, learning activities without forcing people to fully engage in play, even though the full benefits may not be seen without it. The focus should always be on encouraging and enabling play to happen, rather than trying to force it,

as once play becomes compulsory, it is no longer play.

These suggestions from Walsh (2018) aim to build an expectation that play is 'normal' and 'acceptable' within a particular context, making it instead 'embarrassing' to choose not play. These were written within a Higher Education context, but could readily be adapted with specific examples from information literacy settings from any library sector or age group.

Instead of explicitly referring to play, playful learning approaches often use more readily acceptable phrases or vehicles for delivering playful experiences. This can be seen in the literature earlier in this article, where computer games, other games and creative exercises are the vehicles through which playful learning are delivered. This is due to 'play' being seen as a childlike activity, whereas alternatives such as 'creative exercises' can be more acceptable for a range of ages, even though the underlying activity may be the same.

Foregrounding the play in existing approaches

A way forward in improving information literacy instruction may therefore be to acknowledge the playful elements within existing teaching. By foregrounding playful aspects of our teaching, together with reflecting upon the theories around play and learning, we may be able to improve our pedagogical approaches.

Redesigning existing information literacy interventions might not be necessary, but reframing them may be, in order to see the extra benefits that a playful approach brings. In terms of Nørgård et al. (2017) this could be seen as a shift from focusing on the surface structures (our activities), to more implicit structures. The tools and techniques that Whitton (2018) discusses may be laid on top of approaches such as problem-based learning, or other active learning interventions, but the acceptance of risk-taking and failure; openness; and a lusory attitude can be enabled whatever the surface layer (such as game mechanics) suggests at first glance.

To do this we do not require specific learning games, or play activities. Instead we need to be aware of playful pedagogies, learning theories and the barriers to playing as adults. This can allow us to bring playfulness, or a lusory attitude, to pervade our existing teaching methods. Playful learning does not depend on any tool, but on an attitude, a willingness to embrace play, and to facilitate that for our learners.

Enabling information literacy classes to be within the magic circle of play, being aware of the many

barriers that prevent this (Deterding, 2017; Walsh, 2018) and explicitly trying to address this in our teaching, can help enable understanding of troublesome concepts to emerge in a socially constructivist way. Learners can safely test ideas out, slowly moving towards an understanding of what it means to be information literate within their own contexts.

Summary and conclusion

If we accept that information literacy is contextual, socially constructed, and therefore difficult to teach directly, but instead may be more effectively enabled through constructivist approaches, then we should consider playful learning as a good 'fit' for information literacy instruction. Playful learning approaches seem to be suitable for a range of ages and settings, and are inherently socially constructed in style as pedagogical tools.

There are, however, barriers to using playful approaches outside of early childhood settings, though there are ways of making them more acceptable, or less 'embarrassing' for potential learners and instructors. These barriers to using play may be why it is rarely foregrounded in articles that describe the use of games, play and creative activities to develop information literacy. This is despite achieving a state of play or playfulness being a major factor in these interventions. By not explicitly recognising and acknowledging play when it is used to develop information literacy interventions, some of the core benefits can potentially be missed. We therefore expose ourselves to increased risk of failure when we do not engage with the established literature and the communities that work with play.

Few articles within the information literacy literature, when discussing these approaches, mention underlying learning theory at all, meaning that librarians and learning developers miss out on both the learning theory, and the specific pedagogical applications of it as it applies to the use of playful learning approaches.

By recognising that many existing information literacy interventions fall within the socially constructivist, playful learning umbrella, we can improve the design and implementation of them. With design and application better informed by theory and existing practice, we should have the opportunity to improve information literacy interventions.

Without such informed design and use of games, playful and creative approaches to information literacy development, our learners potentially miss out on the full benefits that may otherwise be within reach.

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Curating knowledge, creating change: University Knowledge Center, Kosovo national transition

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Abstract

A collaborative system design initiative at the University for Business and Technology in Kosovo aims to make local knowledge visible and to enhance local knowledge creation, within the university and throughout the country. Since its inception in 2015, design activities aimed to activate systems through modeling the global knowledge landscape, technology enabled systems, and human activity processes. Within the framework of Informed Systems, application of Informed Learning Theory and Information Experience Design (IXD) guided prototyping systems that informed building an institutional repository named the UBT Knowledge Center. The knowledge vision anticipates that sustained curation, organization, discovery, access, and usage processes will accelerate academic engagement, national development, and global visibility, over time and with practice to further theory-to-practice and practice-to-theory.

Keywords

Co-design, information experience design, informed learning, Informed Systems, Kosovo, Soft Systems Design

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University for Business and Technology context

In 2008, Kosovo unilaterally declared its independence from Serbia. The country has since gained

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diplomatic recognition as a sovereign state by 112 United Nation member states. This change in status accelerated Kosovo's transition from an agricultural economy to a knowledge economy, without industrial age encumbrances.

To develop Kosovo's knowledge economy, the University for Business and Technology (UBT) was founded in Pristina in 2001. Educational programs grant Bachelor and Master degrees in a variety of subjects, including mechatronics, computer science, integrated design, engineering, economics, architecture, public policy, law, and medicine (University for Business and Technology, 2019a). The curriculum aims to favorably position Kosovo industries in European knowledge and labor markets. UBT has seen bold growth, since its initial offering of one Master's program in engineering management for 28 students. Now 15 Faculties offer 32 accredited academic programs and 84 majors, which anticipate workforce requirements in an increasingly digital, global world. Disciplinary curricula delivered on five campuses to 17,000 students is enriched by 40 research labs, 7 research institutes, and 20 research centers which investigate national and regional issues, producing more than one thousand publications each year. Such a robust intellectual milieu results in workplace ready graduates, as evidenced by a high placement rate.

Showcasing scholarly intellectual productivity, the founder and President recognized several years later, requires that research productivity and creative work must be discoverable if it is to be usable within the university and beyond. In response, he engaged UBT computer science students in programming a platform, named RIIMS (University for Business and Technology, 2019b), to present bibliographic references for faculty publications. The software was then shared with the Ministry of Education for use by all institutions of higher education in Kosovo, as a national academic database with multiple access points at individual, institutional, and national levels. To further stimulate intellectual productivity, the University also initiated an annual international conference in 2011 to foster dialogue and collaborations among UBT faculties and international researchers. From these early beginnings, a Knowledge Center concept evolved, in response to growing recognition that the University lacked systemic processes and information practices for curation, organization, discovery, use and preservation of local scholarship.¹

UBT Knowledge Center evolution

Over the years, the conceptualization and implementation of a Knowledge Center has assumed increasing

importance for this relatively young university in an even younger country. As stated in the UBT Knowledge Center vision, "the University for Business and Technology intends to build collaboration environments to enable discovery and access, interpretation and analysis, creation and sharing of knowledge" (Hajrizi et al., 2017a: 1). This aspiration quite naturally led to exploration of possible approaches to advance a knowledge center to further local knowledge visibility and advance local knowledge creation. The initiative addresses IFLA Global Vision values and goals, which foster innovative practices and tools, shared expertise and resources, and resilient systems and solutions to provide access and ensure preservation of the world's documentary heritage (IFLA, 2018).

In order to advance the knowledge vision and further this thought leadership, an Informed Systems approach (Somerville, 2015a, 2015b) was adopted and adapted by the University for Business and Technology. Significantly, this theoretical framework advances information literacy, interpreted as the experience of using information to learn (Bruce, 2008) during systems design and within designed systems. The approach evolved since 2003 in North America, through contributions from a distributed team of multi-disciplinary researchers working in Europe, Australia, and North America. Informed Systems draws antecedent theoretical insight from Informed Learning Theory which values variation in information experience and use to enrich awareness and promote learning (Bruce, 2008), thereby advancing information literacy. It further draws upon information experience theory (Bruce et al., 2014) and, more specifically, Information Experience Design research and design phases (Bruce et al., 2017). These information-centered elements are paired with human-centered Soft Systems Methodology (SSM) design tools that can situate and evolve systems within ecosystems (Checkland and Poulter, 2006, 2010). Within this rich theoretical and methodological construct, Informed Systems acknowledges the learning efficacy of systems design and designed systems. In so doing, an Informed Systems initiative enables learning through use of information in different ways, during design and following implementation, thereby enriching practice and theory of Informed Learning.

At its essence, Informed Systems is a participatory approach for system co-design *with and for* users. These systems enable learning through use of information during the design, for beneficiaries and stakeholders involved in the design process for the system and within the built environment for system users.

The simultaneous emphases on ‘user’, ‘system’, ‘technology’, and ‘learning’ made Informed Systems a particularly suitable theoretical background for the Knowledge Center, which aims to transform knowledge generation at a Kosovo university. The Informed Systems theoretical construct also encouraged customization of this inclusive approach to the local circumstances and cultural perspectives of the primary stakeholders, who serve as co-designers and co-learners (Somerville, 2015b).

As Informed Systems initiatives in the United States from 2003 to the present have demonstrated (Somerville, 2009, 2014, 2015a, 2015b; Somerville and Mirijamdotter, 2014; Somerville et al., 2017, 2018a, 2019), collective learning is progressed through information experiences that acknowledge content, the information itself, and context. Collective learning thereby promotes interrelationships between people and their environment. Over time, robust exchange relationships advance the sharing of information, skills, expertise, and experience with the aim of establishing common ground and shared practices that evolve local values and performance behaviors. This inclusive and emancipatory approach, which underpins the Kosovo initiative to further institutional and national aspirations, evolved through contributions from a distributed interdisciplinary (Gibney et al., 2018) and international (Somerville, 2015c) research team with contributors from Sweden, Australia, the United States, and – since 2015 – Kosovo.

The paper presents an original application of Informed Systems through a theory-to-practice initiative. It also, through explanation of this implementation, furthers appreciation for its practice-to-theory contributions. Within an Informed Learning (Bruce, 2008) lens, Information Experience Design (IXD) research and design phases (Bruce et al., 2017) guide the inception and expression of a UBT Knowledge Center. SSM (Checkland and Poulter, 2006, 2010) tools situates and visualizes the initiative within a global knowledge ecosystem. In these ways, Informed Systems catalyzes local knowledge creation and learning practice during systems design and for systems users (Somerville, 2015a; Somerville et al., 2018b). Results enrich understanding of nuanced aspects of theory to practice and practice to theory, which culminates in recommendations for Knowledge Center enhancements to more fully experience Informed Learning.

Ecosystem modeling

Initial design activities for the UBT Knowledge Center commenced with modeling the knowledge

ecosystem in which students lived, worked, and studied. In the spring semester of 2017, three instructors, two from Sweden and one from the United States, facilitated a one-week course in which 10 graduate students in information systems co-created their collective understanding of the institutional knowledge context, within a national and international context. Assigned readings preceded course commencement, and final reports were due several weeks after course meetings, to ensure ample time for preparation and reflection.

Also drawing from the systems sciences, the course used the SSM ‘rich picture’ technique to enable students to represent collective perceptions of the current information landscape for the University and for Kosovo, within the larger global scholarly communications network. A rich picture technique aims to “capture, informally, the main entities, structures and viewpoints in the situation, the processes going on, the current recognized issues and any potential ones” (Checkland and Poulter, 2010: 210). This modeling tool recognizes that: “The complexity of human situations is always one of multiple interacting relationships. A picture is a good way to show relationships. . . . (Checkland and Poulter, 2010: 209).

Students contributed to the UBT Knowledge Center concept through working in groups guided by systems thinking processes and techniques and fortified by conceptual understandings about information, research, and scholarship. As the *Framework* (Association of College and Research Libraries, 2015: 8) states: “Information literacy is the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning”. Informed Learning information literacy practice fostered through engagement with the campus community provided rich opportunities to both explore and practice information literacy, in the spirit of Informed Learning which encourages simultaneous attention on discipline content (systems sciences) and information use (Bruce and Hughes, 2010). Analysis of mixed methods data also fostered students’ appreciation for relationality, as expressed through the multiple ways that others use information to learn (Bruce and Hughes, 2010). When expressed as ACRL Framework concepts, students gained deep insights into information creation as a process, research as inquiry, and scholarship as a conversation, which subsequently guided their systems design efforts.

Various UBT Knowledge Center models emerged from these student studies on information use and

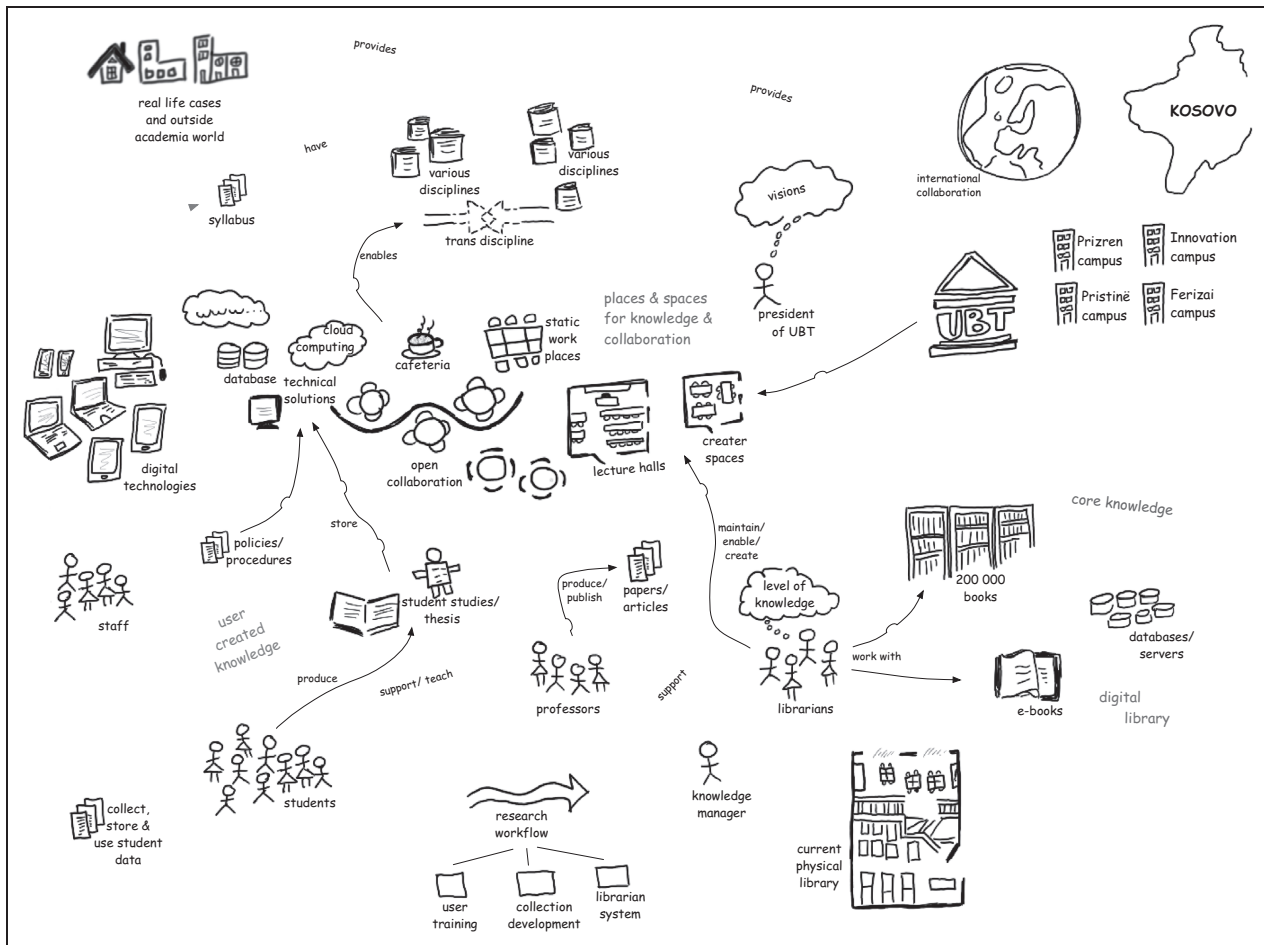


Figure 1. Composite UBT Knowledge Center rich picture cc-by 4.0 (Mirijamdotter A, Somerville MM, Salavati S, et al., 2018).

information landscape. One group model emphasized four aspects: library (physical library), electronic archive (e-archive), globalization platform, and online communication (Aliu et al., 2017). A second group developed library use scenarios that informed their visualization of the University's Knowledge Center concept. Drawing from focus groups and personal interviews with professors, administrators, information technologists, librarians, and students, students concluded that the initiative "is a great idea that will change how we see and treat knowledge in the future" (Kasemi et al., 2017: 15). The third group perceived the whole UBT Innovation Campus as the Knowledge Center. They modeled an attractive, inclusive physical space for worldwide communication and learning materials to foster student learning, faculty teaching, and university research. They considered 'the whole life' of the student, such as the need for day care and need for nice surroundings to support creativity, besides having study materials and other resources for professor and peer exchange and co-creation (Xhemajli et al., 2017).

The Figure 1 composite rich picture illustrates UBT students' visualization of the Knowledge Center landscape. It represents physical and virtual 'places and spaces' for the human activities and interactive relationships that animate information exchange for knowledge creation. Further, the rich picture acknowledges the academic library collection – 200,000 print books, as well as e-books and publisher databases – represented as global 'core knowledge' to be complemented by situated local knowledge.

Student evaluations confirmed the efficacy of a rich picture visualization tool for representing the multiple relationships within a whole system deemed problematical, with the aim of improving it (Mirijamdotter et al., 2018). In that spirit, they asked questions about the situation, which promoted further conversation and deepened collective questioning, and subsequently required redrawing. In other words, pictures aided reflection, advanced thinking, and enriched dialogue – prompting the need for additional modeling to capture changes. Students also noted significant learning, including identification of "three essential

parts of a holistic Knowledge Center ecosystem: a digital environment to advance local knowledge visibility, an organizational environment to enhance boundary crossing collaboration, and a digital academic library environment to enable discovery of and access to published academic scholarship” (Hajrizi et al., 2017b: 2). These 2017 course learning outcomes constituted the starting point for the 2018 spring course, which advanced the Knowledge Center concept through prototyping.

Information experience design

In spring 2018, earlier Informed Systems results were enriched through Information Experience Design (Bruce et al., 2014, 2017) activities. IxD has its origins in Informed Learning (Bruce, 2008), which attends to the varying experience of information use, wherein what constitutes information takes different forms and varies within disciplines and communities (Bruce and Hughes, 2010), IxD encourages variation in experience of information use to learn to design variation in information use, in this instance within information-focused and human-centered systems. Through becoming more able to use information in a wider range of ways, co-designers advance their information literacy during systems design and within the designed systems, as conceptualized in Informed Systems.

The course was taught by four instructors, two from Sweden and two from the United States. In total, 34 undergraduate computer science and graduate information systems students participated, guided by the Informed Systems engagement principle *for and with* users. During the research phase preceding the design phase, students explored the variation in their academic information experience, with a special focus on local scholarship use. Building on the ACRL *Framework* (2015) information literacy concepts introduced in the spring 2017 course, students again used mixed methods to explore: information creation as a process, research as inquiry, and scholarship as a conversation. Required readings preceded the course start, to ensure individual preparation, and final projects were due several weeks after course meetings, to complete group work. In addition, a reflections assignment advanced the Informed Learning reflection concept, which encompasses both experiencing of information literacy (learning) and reflection on experience (being aware of learning) (Bruce and Hughes, 2010).

Course activities were guided by Informed Learning, the antecedent theory for both Informed Systems and IxD, which simultaneously focuses on

information use and learning. Instructors presented the seven qualitatively different ways of experiencing information and information use, including the relationships between information and its contexts of use (Bruce, 2008), to promote Kosovar students’ recognition of variation in information literacy, among their classmates and within their research subjects, with the twofold aim to advance information literacy among system users and to enhance information experience for system users. The seven Informed Learning classifications range from technologies, sources, and processes, to curating, organizing, and generating (new) knowledge, aimed at societal benefit. See Appendix for a fuller description of the Informed Systems categories.

In adopting an Informed Learning lens within this course, instructors asked students to recall stories about how they used information to learn. Such student stories required “being aware of the kinds of information we are using, how we are using information and how different forms of information come together to inform and transform” (Bruce et al., 2012, pp. 8–9). Then, to enliven shared vision and advance common purpose, students worked in groups to visually represent collective academic research experiences. This initial exploration of the relationship between information and the context of its use revealed that students only experienced the first three Informed Learning categories in their knowledge practice.

1. Information and communication technologies: Harnessing technology for information and knowledge retrieval, communication, and management;
2. Information sources: Using information resources (including people) for academic learning and action taking;
3. Information and knowledge generation processes: Developing personal practices or heuristics for finding and using information for novel situations. (Bruce et al., 2012)

Students’ rich picture drawings were then shared with classmates to clarify common patterns. Results revealed that while students typically used academic library resources from global academic publishers, they never used content produced by their UBT peers or professors. As one student group had expressed the dilemma during the spring 2017 course:

You are part of an institution and you are willing to generate some knowledge, but have no way of storing it or sharing it; or you’re looking for some important information that would have helped you on your work

but you have no way of reaching it. (Hajrizi et al., 2017c)

The next phase of the IxD process aimed to address problems that students identified through analysis of their information use stories, which revealed the absence of higher-level Informed Learning categories. In response, students designed system prototypes with curation and management processes to advance local knowledge visibility, access, and usage through intentional relationships and designed practices. To capture, organize, and use local knowledge to produce more local knowledge, students sought to ‘bridge’ individual learning capability and collective learning capacity, which was absent in their narrative stories.

Students were also introduced to another SSM tool, PQR (Checkland and Poulter, 2006, 2010), which aimed to further another 2017 aspiration for “connections with others to create knowledge” as “producers of something useful to society” (Hajrizi et al., 2017c). Students’ collective inquiry started with exploration of these questions: Why do it? (SSM R), What to do? (SSM P), and How to do it? (SSM Q).

In answer to Why?, students recognized that the curation, organization, discovery, access, and preservation of UBT knowledge could increase university impact within higher education and civic society. Co-designed systems and workflows for information exchange could improve local knowledge conditions and thereby increase both Albanian and English language content creation.

In considering What?, students envisioned the curation of faculty papers, faculty presentations, student research studies, and student creative work, such as architectural renderings, ‘recycle engineering’ inventions, and robotics prototypes. They further recommended designing robust relationships through human activity systems among and between Kosovar and global research communities.

To activate How?, students fostered information experience elements, including Informed Learning categories 1–3 (technologies, sources, and processes), which underpin Informed Learning category 4 (information curation and knowledge management) (Bruce et al., 2012). Prototyping processes included modeling how students use information to learn and how they could better use information to learn, within enabling systems and with associated practices.

These explorative questions guided collective thinking about how and why to save information, share information, and use information – the what – through a well-structured online platform to offer

easy access, update knowledge assets, and manage information flow. Interestingly, student-generated outcomes of this phase aligned with the fourth Informed Learning category, which forms a bridge from categories 1–3 to categories 5–7:

4. Information curation and knowledge management: Organizing and managing data, information, and knowledge for future academic needs. (Bruce et al., 2012)

Following the design phase of the IxD approach, the outcomes of this phase supported the identification of specifications, including the system-in-design features and functions, to further the enablement of Informed Learning within the Knowledge Center through a more holistic information experience that advanced the fourth Informed Learning category.

IxD aims to enable Informed Learning, during both the research phase described above and the design phase explained below, through fostering increasing variation. Since students reported experiencing categories 1–3 but not experiencing category 4, they naturally recommended platform features and functions for more variety in the experience of using information. They understood that enablement of the experience of the fourth category of Informed Learning, information curation and knowledge management, would thereby increase information literacy.

System requirements

During the 2018 course, students identified and expressed system requirements for an institutional repository that would bridge Informed Learning concepts 1–3 through a fourth concept leading to the completion of the cyclical research process in concepts 5–7. A repository’s primary functions are curation and management, to support and stimulate a research culture, which aligns precisely with Informed Learning category 4. The University President attended student presentations and heard their repository recommendations, which subsequently guided the University’s selection of an institutional repository platform.

Starting in May 2018, multiple discussions considered the needs of UBT with regard to an institutional repository, mindful of students’ insights. Decision makers – including the University President, 2018 course instructors, and UBT technology staff – considered whether it would be better to create an entirely new system, use an open source option, or purchase a hosted solution. It was ultimately decided to pursue a hosted solution which would allow for institutional

Figure 2. UBT Knowledge Center homepage, February 2019, <https://knowledgecenter.ubt-uni.net/>.

resources to focus on content population rather than system maintenance. UBT purchased a bepress Digital Commons repository platform in October 2018. Figure 2 shows the repository home page.

Beginning in October 2018, content was selected for upload to the repository based on critical collections identified by the University administration. Papers from the UBT International Conference, the *International Journal of Business and Technology*, and student Master's Theses were deemed priorities. These significant collections constitute knowledge

generated and published by UBT. Their inclusion thus promotes the visibility of research generated and now hosted by UBT. Each record has a digital object identifier (DOI) assigned to it, creating a persistent identifier and confirming author and institutional quality. UBT's institutional repository is the first in the country to assign DOIs to published records, which is a source of considerable pride for the University.

As previously stated, student recommendations from the 2018 course informed the UBT knowledge

repository vision and its subsequent platform selection. For instance, students suggested multiple content recommendations and platform functionalities, which are available in the selected Digital Commons environment, such as:

- Content
 - Open educational resources (OER)
 - Digitized books
 - Academic essays (by students)
 - Journal and conference papers (by faculty)
- Functionality
 - Categorized structure of projects
 - Designed for continuation of study/class project development
 - Anti-plagiarism checker

Within the bepress environment, all suggested content is possible and all but one suggested feature/function is offered. For instance, journal articles, conference papers, student theses, student course projects, and university newsletters offer core UBT content in the Knowledge Center. Digitized books and OER will be added as they become available. The proposed functionality, “categorized structure of projects”, is the focus of on-going discussions to foster best practice in user experience. While a built-in “anti-plagiarism checker” is not included in the bepress environment, contributions can be checked prior to upload in the UBT Knowledge Center using the institutional subscription to the software Turnitin, a commercial product that provides plagiarism detection.

Regarding the second suggested functionality, proposing that the repository is “designed for continuation of study/class project development”, this need highlights the cyclical nature of the research process at any institution of higher education. It is less a functionality needed in the system, though the bepress system can certainly accommodate it, than it is an academic mindset which fosters knowledge creation for future knowledge extraction and expansion. By creating assignments which build on past work in course learning, students are allowed to explore further and deeper, utilizing the work of their peers and professors. Hence, creating the fourth category of Informed Learning – information curation and knowledge management – served to bridge from categories 1–3 to reach 5–7. Concepts 5 and 6, in particular, stress the need to share and build upon information for future knowledge creation (again, see Appendix for a full definition of Informed Learning concepts). For UBT and the Kosovo nation of which it is a part, creation and management activities foster forward movement, as a university and as a nation, through

“systemic progression from concept to design to implementation and transformation – to animate creativity and innovation, accelerate adoption and adaptation, and amplify experience and knowledge” (Somerville et al., 2018b).

Concluding reflections

This paper describes an inclusive approach for co-design of holistic systems for enabling information literacy, as illustrated in the UBT Knowledge Center institutional repository at the University for Business and Technology, Kosovo. The enactment process was informed by the theoretical construct of Informed Systems and guided by the IXD method.

Both Informed Systems and IXD have roots in Informed Learning theory, a conceptualization of information literacy that acknowledges learning through experiencing information use in a range of different ways. As a result, implementation of Informed Systems through an IXD approach enacts informed learning and, hence, information literacy. Therefore, systems initiatives such as the UBT Knowledge Center, which emerge from the Informed Learning concept, are considered enablers of information literacy systems.

In this Kosovo example, course activities, user research, and design projects fostered exploration and enactment of the ACRL *Framework* Information literacy concepts, which recognize “the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning” (ACRL, 2015: 8). Exploration of variation in information use prepared students serving as systems designers to adopt and adapt IXD principles in their own practice, through heightened awareness of their own information experience and that of others. Further, students were especially motivated to design systems to advance the information awareness and information experience of the systems’ end users, thereby extending information literacy during system design and within designed systems.

While the seven categories of Informed Learning frame Informed Systems co-design aspirations, the context of local scholarship in a higher education setting of a transition nation, with a strong commitment to workplace readiness, required a high impact approach, which enabled knowledge production for social good. Therefore, students were eager to exceed their individual and collective information practices, which revealed the presence of only three Informed Learning theory categories, to accelerate information

curation and knowledge management. This fourth Informed Learning category bridges to the more advanced categories of knowledge construction and worldview transformation, collegial sharing and knowledge extension, and professional wisdom and workplace learning. Further IXD research and design is needed to integrate these other information experiences into the UBT Knowledge Center local scholarship environment, to generate a truly robust enabler of information literacy.

This Knowledge Center research and development initiative completes a full circle of theory-practice-theory around the theoretical construct of Informed Systems. Through practical implementation in the real world, the paper also intentionally furthers the articulation of Informed Systems, which adds to its theoretical robustness. The paper illustrates how the implementation of Informed Systems can be explained through an Informed Learning (information) lens, in contrast to earlier North American implementations which privileged the contribution of SSM (systems). This Kosovo example is further distinguished by the intentional integration of IXD, which showed how to enact Informed Systems with an emphasis on the information aspect.

Finally, the UBT Knowledge Center illustrates the efficacy of adopting and adapting high level theory through successful transfer of theory-to-practice, through research into practice and then back again, to benefit the institution, the nation, the region, and beyond. “In this way, the Knowledge Center initiative acknowledges the University’s continuing responsibility to foster democratic civil society and regional economic growth as well as further smart business practices and higher education efficiencies, through knowledge sharing for knowledge generation” (Somerville et al., 2018b). Of practice-to-theory significance, intentional inclusion of IXD makes Informed Systems more robust through amplifying Informed Learning, during co-design activities and within designed systems. Doing so qualifies this Kosovo initiative as the first to adapt Informed Systems to a transition nation’s circumstances.

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Note

1. Indicative of the problematical situation, as of August 2018 – before the implementation of the Knowledge Center institutional repository, Scopus listed only four UBT publications and Web of Knowledge listed only one UBT paper, which demonstrates absence of visibility and, hence, paucity of discovery and usage.

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Dr Ian Stoodley is course coordinator of Library and Information Studies at Queensland University of Technology, Australia. He is also the Associate Director of Language and Culture Archives for SIL International. Ian has extensive information research interests with emphasis on ethics, information literacy, and higher education learning and teaching. Ian has supported developing libraries in many parts of the world.

Appendix

Informed Learning categories

1. Information and communication technologies: harnessing technology for information awareness, communication, and management;
2. Information sources: using information sources (including people) for workplace learning and action taking;

3. Information and knowledge generation processes: developing personal practices or heuristics for finding and using information for novel situations;
4. Information curation and knowledge management: organizing and managing data, information, and knowledge for future professional needs;
5. Knowledge construction and worldview transformation: building knowledge through discovery, evaluation, discernment, and application;
6. Collegial sharing and knowledge extension: exercising and extending professional practices and knowledge bases to workplace insights; and
7. Professional wisdom and workplace learning: contributing to collegial learning through using information to learn to take better action to improve. (Bruce et al., 2012)



Adult learning theories and autoethnography: Informing the practice of information literacy

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Abstract

The learning theories of self-directed learning and lifelong learning can inform the practice of information literacy in higher education for adult learners. These theories lend themselves to the use of autoethnography, a research methodology that relies on the exploration of lived experiences through reflexivity informed by theory. In conducting an autoethnography on information literacy, its practice appears as both a singular and a collective activity. Multiple ramifications for practice come from this exploration. These ramifications include considerations of choices, barriers, conducive learning environments, informal learning opportunities, and the need for reflection for adult learners. Applying the learning theories of self-directed learning and lifelong learning to the practice of information literacy offers librarians new and useful perspectives on its practice with adult learners.

Keywords

Academic libraries, adult education, adult learning, autoethnography, higher education, information literacy, lifelong learning, self-directed learning

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Introduction

Adult learning theories offer librarians valuable educational tools for informing the practice of information literacy. The theories of self-directed learning and lifelong learning in particular hold much promise for offering deeper consideration of ways to accommodate the needs and preferences of adult learners in libraries. Autoethnography offers an equally valuable research methodology for investigating these theories in the practice of information literacy.

The following article describes the results of a research autoethnography conducted on information literacy and adult learning. It describes the lived experiences of engaging in information literacy as an adult learner in the capacity of being a student, practicing librarian, instructor, and researcher. In applying the adult learning theories of self-directed learning and lifelong learning to these experiences, findings arise from the resulting reflections.

The findings of this autoethnography show that engaging in information literacy can be both an

individual practice and a group practice. The ramifications of these findings involve considerations of choices, barriers, conducive learning environments, informal learning opportunities, and the need for reflection. Understanding and applying adult learning theories through the research lens of autoethnography can support and enhance the practice and understanding of information literacy in libraries.

Background literature

The field of adult learning encompasses many useful educational theories for librarians to delve into and apply to their practice. The two theories of self-directed learning and lifelong learning are an especially apt fit for the circumstances in which many librarians operate daily. Each theory will be described

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briefly below and examined for its appearance in the literature of librarianship.

Self-directed learning

The most well-known definition of self-directed learning comes from Malcolm Knowles who defined it as a process in which “individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating those learning outcomes” (Knowles, 1975: 18). That libraries may be a natural setting in which to study self-directed learning also comes out of Knowles’ work. At a speech given in 1976 in which he provocatively predicted what the future of adult education might be, he stated that:

There won’t be any teachers, there won’t be any need for them. We will have self-directed learners making use of resources of all sorts. Now when you think about it, what institution is most like that right now? Isn’t it the library? . . . We will all be more like librarians, we who are adult educators. (Knowles, 1976: 47)

The tenets of self-directed learning include self and others. Self-directed learning has been characterized as both “a method of organizing instruction and as a personal attribute” (Merriam and Bierema, 2014: 62). It can involve both individual effort and working with others. It can occur across many landscapes that encompass both individual learning and group learning.

Self-directed learning theory does appear in the library literature. Examples range from Ludovico’s plea to include general “adult education theory into our information literacy instruction” (2017: 250) to Abeyrathne and Ekanayake’s (2019: 14) claim that: “Self-directed learning (SDL) has become a significant concept adopted by higher education institutions. In this context, academic libraries become an essential entity as they create these better learning environments”. In advocating for libraries as places where learning occurs, self-directed learning has been seen as “a useful framework for studying library use because it lends itself to a deeper investigation of learning” (Bordonaro, 2018a: 3).

In terms of information literacy literature, self-directed learning appears often in case studies investigating online learning. An example is the successful development by librarians of an online self-directed learning model on how to write a literature review (Ladell-Thomas, 2012). In another study, the tension between how information literacy instruction is

offered and how students then engage in their own self-directed learning was examined (Garden, 2016). An investigation of whether asynchronous online tutorials can offer a sustainable model for information literacy notes the importance of considering self-directed learning as well (Nelson et al., 2015).

Lifelong learning

A concise definition of lifelong learning in adult education is more difficult to find because it is such a broadly encompassing term that is often used interchangeably with other similar labels such as lifelong education, adult learning, and adult education itself (Milana et al., 2018). In addition, its scope crosses both childhood and adulthood, so its understanding can be both broad and deep. A recent definition attempts to convey this breadth and depth by defining lifelong learning as “the sum of learning as a lifelong and lifewide endeavor” (Grace, 2014: 34). For the purposes of this current study, its use will refer to any type of learning engaged in by adults either in or through a library over the course of their lifetimes.

Both adult educators and librarians have long seen libraries as natural settings for lifelong learning. Libraries are sites for public pedagogy to many adult educators: “. . . as institutions of learning, libraries, zoos, parks, and museums offer opportunities for expanding the study and promotion of lifelong learning beyond its more formal education boundaries” (Taylor, 2010: 12).

The tenets of lifelong learning encompass formal, nonformal, and informal aspects: “. . . formal learning settings are those sponsored by educational institutions, whereas nonformal settings are organized learning opportunities sponsored by institutions, agencies, and community-based groups whose primary mission is other than educational. Informal learning activities are embedded in one’s everyday life” (Merriam and Bierema, 2014: 16).

Lifelong learning appears in the literature of librarianship, although not generally in the form of a theoretical consideration. Instead, library literature “frequently discusses lifelong learning but seldom defines it . . . [beyond seeing] the library’s role in lifelong learning [as] to provide content, access . . . [and] services” (Mahoney, 2018: 543).

The literature of information literacy is strongly connected to the perceived value of lifelong learning, however, even if the theory is not defined. For example, information literacy is seen as upholding the culture of lifelong learning (Siddiqui and Walia, 2011), as fostering global citizenship and lifelong learning (Stevens and Campbell, 2006), and as being a vehicle

for lifelong learning and knowledge management (Singh, 2008). Information literacy and lifelong learning serve larger social purposes as well by emerging “as fundamental factors for a sustainable development and the consolidation of democracy in Latin America” (Dudziak, 2007: 47), and by embodying cultural heritage support through lifelong learning models in Australia (Baker, 2013). Information literacy and lifelong learning have been invoked as necessary for worldwide economic development and human survival (Abid, 2004).

What this current study hopes to add to the knowledge base of librarianship is a deeper consideration of how the specific tenets of the adult learning theories of self-directed learning and lifelong learning theories can inform information literacy practice.

Methodology

Autoethnography is a recent form of qualitative research (Chang, 2016). This approach relies on words as the source of data, but it differs from other qualitative methodologies in that these words come directly from the researcher as the sole participant. These words represent the lived experiences of the researcher, as well as considerations of praxis (in this study, the practice of librarianship). Reflexivity, self-reflection connected to theory, and critical self-reflection are the prevalent forms of analysis used in autoethnography. In this study, theory comes from the application of the self-directed learning and lifelong learning theoretical tenets described above.

As a research methodology, autoethnography focuses “specifically on the realities of people’s everyday lives . . . to explore the self and the social” (Taber, 2010: 14). Self in a library setting could be both library user and librarian, and social could be the entire library operation or another collective part of it such as the practice of information literacy.

Autoethnography as an “encounter between broad theorizing and personal reflection” (Taber, 2010: 20) offers librarians a sound methodological way to say that “My research is framed by my life, but moves outside it” (Taber, 2010: 20). This research approach gives librarians worldwide an exceeding useful way to consider their own lived experiences in a thoughtful and reflective way that can serve to transform these analyses into a form of research.

Autoethnography is a relatively unknown research methodology in librarianship. A good start has been made, however, with a consideration on how it “offers a promising methodology to illuminate information experiences” (Guzik, 2013: 267). A recent book published by the Association of College and Research

Libraries opens this door wider by sharing a series of autoethnographic essays on librarian culture and identity (Deitering et al., 2017). What this current study hopes to add to the beginning of autoethnography use in librarianship is its use for the investigation of information literacy.

My method for conducting an autoethnography began with my written descriptions of lived library experiences both from daily journals and from memories that I have committed to paper. I arranged all of these records in chronological order, and then transcribed them into a set of word-processed documents online. Using these words as my data bank, I then identified experiences specifically related to information literacy. These identified information literacy experiences included my engagement in such activities as searching for information, asking for assistance, reaching dead ends in library searches, and achieving success with finding and successfully using library information. I labeled them by my status at the time of their occurrence.

The status labels I used were: undergraduate student, graduate student, practicing librarian, ESL (English as a second language) instructor, and researcher. The status labels superseded the original chronological order because I have multiple undergraduate and graduate degrees interspersed over a wide range of time. For example, I completed a Bachelor’s degree in German and Spanish in 1981, and an MA in German and an MLS in 1984, at which point I became a practicing librarian. However, I went back to graduate school and completed an EdM in TESOL (Teaching English to Speakers of Other Languages) in 2000 and then continued on to a PhD in Second Language Education in 2004, all the while remaining a practicing librarian. Most recently, I returned to school for a Bachelor’s degree in Adult Education in 2017 which I am now finishing, while still working as a librarian. Interspersed even with the work and schooling are part time jobs teaching ESL over the last 15 years, as well as research studies looking at ESL students and libraries. So I have many experiences from formal education, work, and research that can be studied for information literacy purposes. These lived experiences are presented below in summary form.

Lived experiences

As an undergraduate student, I experienced information literacy over a long period of time. This time span stretches from my first college exposure to an academic library as a freshman in the late 1970s up to my very recent experience this past year in online

undergraduate adult education courses. As an 18-year-old, I was overwhelmed by the need to do library research, unsure where to ask for help, and unclear about how to engage in it. Because I was an advanced student in high school, I did not take an English 101 course in college and so I had no formal library workshop. My only guidance was myself. I eventually worked up the courage to directly approach a reference librarian, and in that way, set off on a path of learning how to do library research. This past year, in contrast, having worked as a librarian for decades, I was not in need of asking for assistance. Instead, I was in a position to help other classmates make good use of library searching tips and assistance. So the level of my status remained the same, but I had two very different lived experiences of engaging in information literacy at these two different points in time.

As a graduate student, my confidence in engaging in information literacy activities improved dramatically. Having had exposure to doing library research in undergraduate courses, I felt ready to move to a higher level of engagement. This was accomplished both on my own, in working with librarians, and in working with other classmates. For example, group work with other classmates in library school afforded us all opportunities to hone our own searching skills and practice offering assistance to others who needed help. We practiced offering library workshops to each other, and we gave each other feedback. I could then immediately apply these lessons to my own graduate work in the language areas of German and TESOL again at two different periods of time. In conducting library research for graduate work in German, I made use of my newly acquired knowledge of reference sources in the Humanities. When I went back to graduate school to study TESOL, I already had a firm grounding not only in useful language resources but also in what kinds of help I could expect from a subject librarian. All of these graduate experiences then paved the way for me to learn how to do research at a doctoral level. Working at this level of engaging in research studies myself, I was once again able to help fellow classmates in conducting literature reviews for their own research projects.

As a practicing librarian, my engagement with information literacy crystallized. I watched information literacy begin as bibliographic instruction. My professional practice in information literacy encompassed both the original ACRL standards and their current framework. The change in emphasis from sources to process was something I participated in as a professional librarian. I remember the initial consternation with even using the term "information literacy" to describe any aspect of library work because

it was felt to be too ambitious and the purview of English instructors. I moved from that sense of trepidation to a sense that librarians were fellow educators, not just helpers of faculty. This sense has continued to the present day with my current understanding of librarians as partners with faculty who need to work together jointly to educate students into becoming critical thinkers, users, and creators of knowledge.

As an ESL instructor, I honed my information literacy delivery skills in a classroom, and I developed a deeper understanding of teaching and learning. My lived experiences with information literacy took on a changed understanding of ways to interact better with students. This changed understanding was directly related to the education courses I took as a graduate student in TESOL in order to become an ESL instructor. In these courses, I learned about teacher-centered classes versus learner-centered classes. I learned that students have responsibilities themselves for their own learning. I learned that everyone learns in different ways. I learned about multiple literacies. I was exposed to different forms of assessment in these classes as well. Finally, I was given opportunities to engage in microteaching projects with my classmates, and give and receive feedback on all of our own different teaching styles. Many of these ideas were picked up by practicing librarians in their daily lives without the need to take formal courses in education. For me, however, those courses really emphasized the need to change my earlier approach as the sole conveyor of information to instead promote the students as active participants in their own learning. The single biggest change in my information literacy practices occurred while I was working as an ESL instructor when I adopted a vocabulary learning approach to teaching library skills. This new approach allowed me to present information literacy as a language learning activity to ESL students. I used synonyms, phrases, and grammatical terminology like function words and content words to explain how to find and use academic vocabulary germane to a particular discipline when conducting library research. My status as an ESL instructor was therefore extremely important to my ongoing work as a practicing librarian involved in information literacy.

As a researcher, I had extraordinary opportunities to consider the research impacts of information literacy. My doctoral work looked at how non-native speakers of English use libraries to improve their English. Doing this research opened up many avenues of investigation for me. Because I was lucky enough to secure work at a university that recognized librarians as faculty members, I also had the resources to conduct more research of this nature. The information

literacy aspects of this work considered how information literacy skills improve as writing skills improve (Bordonaro, 2008), if database searching can be construed as a language learning activity (Bordonaro, 2010), how language teaching strategies can be incorporated into library instruction (Bordonaro, 2011), if the metaphor of scholarship as conversation works with information literacy for ESL students (Bordonaro, 2015), how best librarians can work collaboratively with ESL instructors in supporting library research (Bordonaro, 2018b), and how language learning can intersect very broadly with library learning (Bordonaro, 2014).

Applications of adult learning theories

Once lived experiences have been described and reflected upon, the next step of an autoethnography is to apply theory. The purpose of taking theories and applying them to these descriptions is to bring to the surface larger meanings that can reveal research findings. In my case, the theories of self-directed learning and lifelong learning offer useful ways to probe meanings of my adult learning experiences concerning information literacy.

Self-directed learning theory includes the tenets of self and others. In examining my own lived experiences with information literacy, I could see many instances of my engaging in it individually and collectively. My individual engagement with information literacy included instances of initiating library research myself and working through it myself, as well as initiating searches myself and working with others. Both are forms of self-directed learning.

Library research on my graduate thesis in German is an example of individual initiation and follow-through since I did this work completely as a solo effort. Yet I also engaged in information literacy through individual initiation and collaborative work later on as a doctoral student in Second Language Education. In this instance, my initial efforts to locate and effectively use library material in the study of how ESL students use libraries was done individually. However, I then presented my ongoing findings to my classmates through a series of classroom exchanges, and they were able to give me further suggestions on where else to look and what else to consider. In addition, I worked with a subject librarian to further enhance my searches and to gain even more focused suggestions on where even more helpful material might be found. So although the library research reviews I conducted as a doctoral student were initiated on my own, I certainly received a lot of assistance from others as I went about conducting that

research over time. In applying self-directed learning theory to my lived experiences with information literacy, I can see that I engaged in it in self-directed ways involving both self and others.

Lifelong learning theory offers the tenets of formal, nonformal, and informal learning. In applying this theory to my lived experiences of information literacy, I can also see instances of all three types of learning present.

Formal learning is quite prevalent in my experiences of receiving formal information literacy instruction as both an undergraduate and a graduate student. Its reverse, the formal delivery of information literacy instruction, is something I again experienced many times as a practicing librarian working with both undergraduate and graduate students across a wide variety of disciplines over the course of my librarian career. I also formally engaged in information literacy through course requirements to do so. All of these experiences took place in the formal setting of universities while working on accredited degrees, which also reflects much experience in a formal educational environment.

Nonformal learning experiences of information literacy are also present. I took French classes in a community education program, for example, that were not part of an accredited degree program. Instead, their intent was to offer instruction in a more social and leisure-based way that did not depend on testing or grading for completion. When I did an oral report in that class that used information I had found on a particular topic through library resources, it occurred in a spirit of oral practice rather than for a graded assignment. In another example, I attended museum workshops on arts-based topics for the sheer pleasure of learning more about the content. After these workshops were over, I often engaged in information literacy by searching for more information on these topics purely out of personal interest. These settings served as sites of public pedagogy for me, which are also recognized forms of adult learning outside of formal educational contexts (Taylor, 2010).

Informal learning experiences of information literacy are evident as well in my lived experiences. Seen as embedded forms of learning in daily life, they are almost too numerous to mention in a consideration of my own lived experiences with information literacy. For example, I make daily use of browsing newspaper headlines through library resources in order to stay up-to-date on current events. Every day that I read these headlines, I consider the newsworthiness of each individual site. I borrow books every month as a member of an historical fiction book club. While so doing, I also use online encyclopedias to

give myself background information on these different historical periods. Whenever I have conversations with family members on topics that I do not know much about, I conduct library searches to find more information to inform myself. The list goes on and on. In all of these instances, I am engaging in informal learning through information literacy. And, as suits the idea of lifelong learning, these lived experiences have occurred throughout the course of my life, from childhood to adulthood. As an adult learner, however, and as a practicing librarian, my engagement in informal learning has been most focused as an adult.

Findings

After the descriptions and reflections of my own lived experiences and the application of adult learning theories to them, I looked for emerging themes. What rose to the surface of all of this documentation was the nature of the practice of information literacy itself. For me, my own personal engagement generally took one of two forms: Either I was working alone or I was working with other people. These findings rise above my own personal experiences of self-directed and lifelong learning, however. They suggest to me that the practice of information literacy for everyone can be conceptualized as both an individual practice and as a group practice.

Information literacy as an individual practice can occur through self-initiation, as when a student needs to learn effective ways to search for information on an individual research topic. It can also occur as an individual practice through initiation by others, whether that comes from a librarian conducting a formal information literacy workshop or from a professor requiring its use for the completion of a research assignment. The individual practice of information literacy can appear in many guises. It could take the form of librarians creating online tutorials for individual student use, or an individual assignment in a classroom to research and present an oral report to the rest of the class. It could happen when a librarian conducts a research consultation with a student one-on-one, or when a doctoral student uses library databases to complete a literature review. What may be most important from this finding is that information literacy appears in many unique ways in its form of an individual practice.

Information literacy as a group practice is an equally important manifestation of its presence. In this form, it can appear through group engagement, and through collective efforts. It could include a group of students working together in a classroom to find and use information from library sources on

an array of topics for a group oral report. It could take the form of librarians working with their peer librarians in conducting environmental scans for administrative purposes. It could happen when a librarian partners with a faculty member to co-teach an information literacy session for students in a particular course. It could appear when graduate students work with subject librarians and then share those tips with their classmates. As with information literacy as an individual practice, the variety of ways in which information literacy appears as a group practice likewise seem limitless.

Informing practice

Ramifications for informing practice come from taking these findings and connecting them to adult learning. These ramifications can then offer ways to inform the practice of information literacy for adult learners. Generated in this way, ramifications include considerations of choices, barriers, conducive learning environments, informal learning opportunities, and the need for reflection.

Offering choices for adult learners could encompass librarians offering them support for work singly or collectively, in-person or online, synchronously or asynchronously. Formats of library materials could offer choices as well, as for example including text, video, and audio in information literacy tutorials. Other ways to personalize information literacy instruction could reflect choices too, such as incorporating multiple correct ways to answer questions. Choices in assistance could also inform practice by offering help online, in person, through chat, over the phone, through scheduled appointments or spontaneously in person.

Recognizing barriers means librarians becoming aware of impediments to adult learning that could be technological, access-related, or time-related. These could include becoming familiar or sympathetic to tight work schedules, family responsibilities, drawbacks of public transportation, lack of access to computer equipment, and potential unfamiliarity with university policies and processes.

Creating a conducive environment could inspire librarians to create multiple pathways, needed assistance, and feedback to students who are adult learners. Offering multiple pathways could involve posting instructions and assistance online and in print, offering library workshops for new adult learners, or reaching out to them through email messaging systems such as personal librarian systems. Making library resources available, accessible, and easily discoverable in both print and online forms could also help

create a conducive environment. Making sure that adult learners know that assistance and feedback from librarians is available also adds to the improvement of the learning environment.

Acknowledging the importance of informal learning can give adult learners a strong way to engage in information literacy in libraries. Informal learning in adult learning refers to learning embedded in everyday life. In information literacy, this can take the form of learning to engage in library research in ways outside of a formal classroom setting. These daily ways in a library setting could include casual interactions between librarians and adult learners at a reference desk, in an office, or in a hallway. They could also include daily exposure to library web sites and resources that are accompanied by individual librarian assistance in their spontaneous use or understanding at point of need.

Advocating for the importance of reflection in adult learning reinforces the role of librarians as educators in information literacy. Incorporating opportunities for reflection as adult learners engage in learning how to conduct library research could happen in formal library workshops as well as informally in one-on-one exchanges with a librarian.

Discussion

Library literature has proven itself amenable to learning from adult education as noted in the background section above. What this current study can add to the understanding of information literacy practice for adult learners is a deeper understanding of how tenets of self-directed learning and lifelong learning can enhance this understanding and further inform its practice.

In terms of self-directed learning, the practice of information literacy can encompass both self and others. This means that information literacy lends itself to individual adult learners engaging in it on their own as well as in conjunction with other learners. Self-directed learning has been connected with individual learning by adults in the library literature: "Self-directed learning can help librarians understand that some adult learners would rather figure things out on their own than necessarily be given step-by-step instructions for every library procedure" (Bordonaro, 2018c: 429).

In terms of lifelong learning, the practice of information literacy can take place in ways that include formal learning, nonformal learning, and informal learning. Adult learners engaging in information literacy therefore have many avenues for doing so. To library researchers, these avenues generally

differentiate themselves between formal instruction in an information literacy class (Dahlen, 2012) versus informal learning experiences (Murphy, 2014). Informal learning, in particular, is being recognized as a current library opportunity. A recent library journal article title states this explicitly in saying that: "Undergraduate students may prefer to learn about the library informally" (Miller, 2015: 82).

Informing information literacy through choices, barriers, creating conducive environments, and reflection has appeared piecemeal in the library literature in various segmented ways. Creating conducive environments, for example, has been addressed through studies on the library as place (Buschman and Leckie, 2007). Reflection likewise has a long history in librarianship, but it remains an important and relevant consideration in its use with adult learners (Nakayama et al., 2016). Choices and barriers for adult learners do appear as keywords in the library literature, but not generally as the source of investigation themselves.

This current study may be able to help widen librarian understanding of how adult learners learn. This in turn can inform practice by making information literacy more useful and relevant to their needs.

Limitations

The most obvious limitation to this study is its use of one person's lived experience and application of adult learning theories. A different person, therefore, could reach different conclusions. However, in choosing to shine a lens upon my own lived experiences as I understood them does offer a unique setting for its study. Its relevance may therefore lie in how well I described my own experiences to see if others might have had similar experiences. And in applying my newly acquired knowledge of adult learning theories and exposure to adult education, I have been given an opportunity to consider these experiences from a new angle.

Conclusion

The adult learning theories of self-directed learning and lifelong learning serve as a useful entry point for enhanced understanding of information literacy for adult learners. Employing these theories with the research methodology of autoethnography can deepen an understanding of the practice of information literacy for adult learners.


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Author biography

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Studying visual literacy: Research methods and the use of visual evidence

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Abstract

The proliferation of images and their increased use in academic and everyday information practices has sparked an interest in visual literacy as an area of research and library instruction. Teaching approaches and student learning are examined using a variety of research methods and utilizing images in the research process. This paper provides a review of research methodology adopted in empirical studies of visual literacy that were published in academic journals between 2011 and 2017. The results indicate that one third (33%) of the examined studies adopted a quantitative approach with surveys being the most popular strategy. Qualitative and mixed-methods studies were a minority but represented a greater variety of strategies and data collection techniques. One third (33%) of the studies in the sample did not report any research methodology. Most of the studies (87%) used visual evidence in the research process.

Keywords

Images, qualitative research methods, quantitative research methods, research methodology, visual literacy, visual materials

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Introduction

Visual literacy represents a set of essential competencies for modern learners in academic and everyday information practices. Image users are not only viewers, but also creators and active contributors of visual information. Visual literacy has traditionally been affiliated with art history and art education but is now becoming an important concept across academic disciplines and in social media environments. Advances in digital technology have contributed to the proliferation of images and increased the relevance of visual literacy. Images are used in professional, scholarly, and daily information practices (Beaudoin, 2014; Ewalt, 2016; Yoon, 2011). The abundance of visual resources has opened new possibilities for teaching and learning in an academic environment (Elkins, 2007; Matusiak, 2013; Ulbig, 2010). Among many literacy types, it is the visual one that is often recognized as the most essential for 21st-century learners (Avgerinou, 2009; Felten, 2008; Hattwig et al., 2013).

The importance of visual literacy skills has increased with the development of the Web as a highly visual medium and the ease of taking images and sharing them. Images are an essential component of communication in the social media environment. Online users can post images on Facebook, Instagram, Snapchat, Pinterest, and other applications. Visual information is an important element of messages shared on Twitter (Thelwall et al., 2016; Yoon and Chung, 2016). However, being surrounded by visual media does not necessarily mean that users know how to create images or interpret their meaning. In the Web 2.0 environment, people are not only consumers but also producers of visual content and need adequate skills in creating and processing images. In

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addition, evaluation skills are extremely critical as images are easily manipulated and used in creating distorted messages. In the world of fake news, users need to be multi-literate and be able to evaluate the authenticity and credibility of textual as well as visual information (Cooke, 2018; Shen et al., 2019).

With the expanding roles of images in communication, education, and everyday life practices, visual literacy is gaining more attention in research and in library practice. The concept of visual literacy has been debated for over five decades (Michelson, 2017). However, empirical studies investigating how individuals select, evaluate, and use images, or create and share visual content, are relatively new and often multidisciplinary. They present new opportunities as well as challenges in the selection of research methodology and the type of collected data. Researchers with diverse educational and disciplinary backgrounds may choose different research methods and strategies. Data can be collected in multiple forms of representation. In addition to textual and numeric data, researchers can use visual resources in the research process and collect data in the visual form.

The emerging character of visual literacy practices provides a fertile ground for studying the evolving field of research methodologies. Use of images in teaching and student learning with visual resources can be examined using a variety of research methods and sources of data. As Berg and Banks (2016: 470) note, “research does not only require a static set of skills and abilities (competencies), but rather the readiness to continually evolve and grow in experience, knowledge, and abilities”. This paper reports the findings from a study that examined the use of research methodologies in empirical studies of visual literacy practices and investigated the type of visual evidence gathered during the research process.

Background

Literacy practices mediated by digital technology involve interaction with resources in many different modes of representation and require multiple literacy skills. Information literacy has been at the center of library and information science (LIS) research and practice, but the LIS field is also acknowledging other literacy types and exploring the relationships between them. A taxonomy of literacies identifies multiple dimensions and lists a number of literacy types, including digital, information, scientific, media, technological, etc. (Stordy, 2015). The conceptual frameworks recognize the complexity of what it means to be literate in the digital environment and attempting to combine or unify different literacy types. Visual

literacy is a key component of metaliteracy and trans-literacy frameworks that identify a wide range of required literacy competencies and combine or integrate different literacy types (Ipri, 2010; Mackey and Jacobson, 2014; Thomas et al., 2007). Interestingly, visual literacy predates many of the newer literacy types and frameworks. It is even older than the concept of information literacy. Many definitions of visual literacy exist, and it has been only recently that researchers began to reach some agreement on the meaning of the term (Michelson, 2017).

Defining visual literacy

The early definitions of visual literacy were introduced in the pre-digital era. John Debes is generally credited with developing the first definition of visual literacy in the 1960s (Michelson, 2017). Debes and other scholars from the Rochester School emphasized the development of vision-competencies and their integration with other sensory experiences. This definition has been adopted by the International Visual Literacy Association (IVLA) and is featured on the organization’s website (IVLA, 2019). Early concepts emphasized visual cognition and perception, and the processes involved in understanding and interpreting visual resources. The skills in creating or processing images for the purpose of making meaning were generally overlooked, since at that time visual design was considered the domain of artists and craftsmen. Considine (1986) was one of the few scholars who emphasized comprehension as well as skills in creating images. The combination of skills in understanding and generating visual content became even more important when digital technology enabled users to create and share images easily.

Visual literacy is understood broadly and refers to the competencies in using and interpreting a variety of resources in the visual mode of representation, including still images, photography, film, video, mass media, and 3D objects (Chauvin, 2003; Messaris, 1994; Spalter and Van Dam, 2008). In many cases, visual and media literacy overlap. Visual literacy is listed in the UNESCO (2013) media and information literacy guidelines. The current understanding of visual literacy emphasizes visual cognition and perception as well as skills in visual design. The shift towards understanding visual literacy as going beyond “reading” and interpreting images has been evident in research literature since the late 2000s (Avgerinou, 2009; Brumberger, 2011; Felten, 2008; Spalter and Van Dam, 2008).

The Visual Literacy Competency Standards for Higher Education, proposed by the Association of

College & Research Libraries (ACRL), emphasize visual literacy as a multidimensional phenomenon, defining it as “a set of abilities that enables an individual to effectively find, interpret, evaluate, use, and create images and visual media” (ACRL, 2011). The document provides a foundation for developing a standard-based curriculum for library instruction to teach students skills and critical thinking with regard to visual materials (Hattwig et al., 2013). *The Visual Literacy Competency Standards for Higher Education* identify seven areas of competencies for visually literate individuals, including needs assessment and skills in finding, interpreting, evaluating, and using images. Design and creation of images and visual media features prominently as a separate standard. In addition to a set of standards, the framework also includes a list of associated performance indicators and learning outcomes. Visual literacy is also closely aligned with the current *ACRL Framework for Information*, particularly regarding the active role of users in the information creation process (ACRL, 2015).

Visual literacy has been defined and conceptualized in a variety of ways in the last 50 years since Debes proposed the first definition. Despite many reviews and theoretical discussions, however, multiple definitions prevail. Kędra (2018) attributes this lack of consensus to the multidisciplinary and elective nature of the field. The author argues that researchers should put aside the debate on definitions and focus on competencies evaluating what visually literate means. The focus on competencies and academic practices should help move research forward on visual literacy instruction and visual practices, and contribute to systematic education of visually literate individuals.

Teaching visual literacy

Recognition of the importance of visual competencies in the digital environment is accompanied by calls for teaching skills in visual literacy, especially that instruction in higher education has been traditionally focused on materials in the textual mode (Avgerinou, 2009; Felten, 2008). As Messaris (1994) points out, education focused on visual resources has been neglected by educational institutions despite visual modes of representation being more accessible than text alone. Most first-time viewers can interpret images on some level without preexisting skills. However, images can have several layers of meaning that are inaccessible to inexperienced viewers but can be revealed with more exposure and instruction. Research on visual literacy in higher education emphasizes the need to teach visual literacy across

disciplines (Felten, 2008; Little et al., 2010; Milbourn, 2013; Schoen, 2015).

Academic libraries have traditionally been involved in teaching information literacy through a variety of strategies, including one-shot library sessions, course-integrated instruction, and online tutorials. Visual literacy intersects with information literacy and typically emphasizes skills in selecting and evaluating resources. Visual literacy can be a component of library information literacy workshops, or entire sessions can be devoted to visual literacy concepts and competencies as is often the case in art, art history, and communications curricula (Schoen, 2015). Harris (2010) is a strong proponent of integrating visual literacy and information literacy instruction and offers a number of practical suggestions for incorporating visual literacy into library practice and theory. In addition to library workshops, visual literacy instruction can be embedded into classroom activities and taught in the context of disciplinary content (Milbourn, 2013; Schwartz, 2018)

LIS literature recognizes the importance of visual competencies for 21st-century learners and provides useful guidelines for integrating visual literacy into library instruction sessions or embedding it into the curriculum (Beatty, 2013; Harris, 2010; Hattwig et al., 2013). However, a recent survey of academic libraries in the United States indicates the lack of awareness of the *Visual Literacy Competency Standards for Higher Education* and limited visual literacy instruction (Schwartz, 2018). The majority of academic librarians (62.7%) who participated in the survey stated that they did not teach visual literacy; 53.4% were not aware of the *Visual Literacy Standards*. Schwartz (2018) conducted follow-up interviews with 16 participants and found that those academic librarians who are interested in visual literacy use creative approaches to incorporate it into instruction.

Methodological approaches

With the expanding role of images in an academic environment and social media and the calls for teaching visual competencies, visual literacy is becoming a new area of research investigations. In empirical studies, researchers can select from a variety of methodological approaches, strategies, and data collection techniques to study participants' skills in creating, interpreting or evaluating visual resources. Research in the LIS field tends to adopt methodological approaches established in social sciences, including quantitative, qualitative, or mixed-method designs (Connaway and Radford, 2017; Creswell, 2013).

Research practitioners in the library field typically use social science methods, although they often report lack of adequate training in research methodologies (Alemanne and Mandel, 2018; Kennedy and Branco-lini, 2012, 2018; Luo, 2011).

Early methodological reviews of LIS publications distinguish between qualitative and quantitative types of research and consider a combination of both (Järvelin and Vakkari, 1990). Furthermore, the authors identify research strategies, such as historical research, survey, case study, bibliometric analysis, and experiment. Data collection techniques include questionnaires, interviews, observations, thinking aloud, citation analysis, content analysis, and historical source analysis. Hider and Pymm (2008) adopted this classification and added new data collection techniques, such as focus groups, journal entries, transaction log analysis, and task analysis.

The typology of research approaches as qualitative and quantitative is now well established in the LIS field. Recognition of the mixed-method design, however, is relatively new. Fidel (2008) examined the use of the mixed-method approach and concluded that the implementation of this research design is minimal in LIS, accounting for 5% of surveyed publications. Low adoption of mixed-method approaches was also found in the methodological review of research studying information behavior of image users (Matusiak, 2017). Comprehensive reviews of research methods in LIS research studies indicate that surveys are one of the most frequently adopted methods (Aytac and Slutsky, 2015; Chu, 2015; Luo, 2011; Luo and McKinney, 2015; Matusiak, 2017).

Literature review of studies examining visual literacy provides examples of survey and case study research as well as attempts to adopt new research strategies. Brumberger (2011) conducted a survey of college students and evaluated their skills in interpreting images and in producing and editing visual communications. Emanuel and Challons-Lipton (2013) undertook a similar study surveying the visual skills of digital natives and focusing on image recognition. Case studies offer insight into teaching visual literacy in disciplinary contexts and provide examples of classroom activities (Beaudoin, 2016; Bell, 2014; Matusiak, 2013; Ravas and Stark, 2012). Matusiak et al. (2019a, 2019b) examined students' visual literacy skills and the use of images in the context of academic work in a qualitative exploratory study. The researchers adopted Consensual Qualitative Research (CQR), a method developed in counseling psychology.

However, the literature review provides only a snapshot of research methods used in studying visual

literacy practices. The purpose of this study was to examine the research methods in a systematic manner and to investigate the use of visual evidence collected during the research process.

Methodology

This study undertakes a systematic review of the research methodology employed in the study of visual literacy. It conducts content analysis of the articles on visual literacy in terms of research strategies within the quantitative and qualitative traditions and mixed-methods designs, data collection techniques, user populations, and use of visual materials in the research process. The following research questions have been posed for the study:

1. What types of participants are involved in the studies of visual literacy?
2. What research methods are used in the studies exploring visual literacy?
3. What type of visual evidence is used in the research process?

For the purpose of this study, the author analyzed empirical research studies of visual literacy published between 2011 and 2017 and indexed in two databases: Library, Information Science & Technology Abstracts (LISTA) and Communication and Mass Media Complete (CMMC). The selection of the date range is based on the literature review that indicates the scarcity of empirical studies in the early research on visual literacy (Hattwig et al., 2011; Schwartz, 2018). The publication of the *ACRL Visual Literacy Competency Standards for Higher Education* (2011) sparked more interest in this area of research.

This study consisted of two phases: (1) the identification of empirical studies that report research on visual literacy (2) content analysis of the sample. The core list of publications was identified through a series of structured queries using "visual literacy" or a combination "visual or image*" AND literacy in the subject field of LISTA and CMMC databases. All queries were limited to publications in English. After the duplicates were removed, the initial list of publications was further reviewed and filtered to focus on empirical studies. Many results retrieved from the LISTA and CMMC databases on the topic of visual literacy represented theoretical papers and were not selected for this analysis. The review process yielded a total of 30 empirical studies. Ten studies in the sample did not explicitly state the research methodology although they reported findings from informal observations and examples of interactions with visual

materials. They were included in the analysis. The unit of analysis in this study is a research publication.

In the second phase of the study, the selected publications were reviewed and analyzed systematically for the research methodology in approaches, strategies, and the use of data collection methods, as well as reporting of data about user populations and types of visual materials used in the research process. Content analysis was used as a method of examining and coding the variables. The following variables have been examined in the study:

- *Research approach* is an overall plan or design for conducting research, not just a method of data analysis (Creswell 2012; 2013). The typology used in social science research includes three approaches:
 - Qualitative
 - Quantitative
 - Mixed methods
- *Research strategies* are types of qualitative, quantitative, or mixed-method approaches that provide a specific direction for procedures and the selection of methods in data collection and analysis.
 - Survey and experimental design are common strategies within the quantitative approach.
 - Examples of strategies within the qualitative approach include ethnographic research, case study, grounded theory, narrative, and phenomenology (Creswell, 2012).
- *Data collection methods* include techniques used to collect data; examples include questionnaires, interviews, and observations.
- *Types of participants* represent individuals recruited for the studies.
- *Types of visual evidence* used in the research process encompass two categories:
 - Types of visual resources selected from secondary sources;
 - Types of images created by participants during the research process.

Findings

The articles in the analyzed sample were published in 14 journals. The largest number of articles ($n = 14$, 47%) were published in the *Journal of Visual Literacy*, followed by *Art Documentation: Bulletin of the Art Libraries Society of North America* ($n = 4$, 13%) and *Journal of Documentation* ($n = 2$, 7%). Ten journals were a source of one study (33%). The

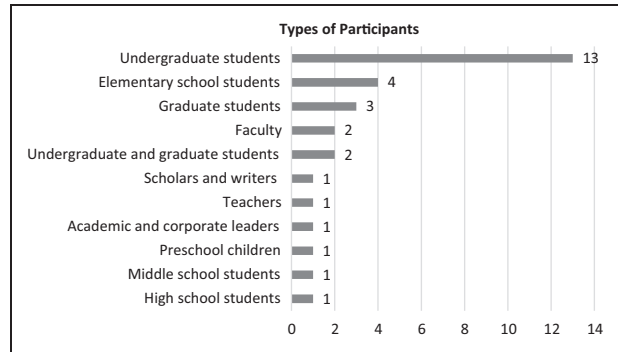


Figure 1. Types of participants reported in the articles ($n = 30$).

international coverage was extremely limited with 25 studies (83%) taking place in the United States and two (7%) in Sweden. Three countries were a place of one reported study: Cyprus, Nigeria, and Puerto Rico. The selection of the LISTA and CMMC databases as a source of publications and restricting the queries to English likely contributed to the limited international coverage of the sample.

Most of the reported studies were conducted in educational settings, including elementary schools, high schools, and universities. Academic libraries and university classrooms provided fertile ground for examining student visual literacy competencies and testing the impact of instruction. As demonstrated in Figure 1, many studies ($n = 18$, 60%), engaged undergraduate, graduate, or a mix of undergraduate and graduate students. While architecture, visual studies, and art history students (24%) were represented heavily in the sample, several studies also involved participants from the Science, Technology, Engineering and Mathematics (STEM) disciplines (18%), education (18%), cultural studies (4%), and library and information science (4%). A significant portion of the studies was conducted with undergraduate students across multiple disciplines (32%).

The studies analyzed in the sample represent the three research approaches: quantitative, qualitative, and mixed-methods. As Figure 2 demonstrates, 10 studies in the sample (33%) were conducted using quantitative methodology, 27% ($n = 8$) were qualitative, and a smaller number of studies ($n = 2$) undertook a mixed-method approach. Five studies in the quantitative category used surveys as a data collection technique. These surveys focused on the participants' skills in recognizing iconic pictures and symbols or interpreting images. Four studies in the quantitative category adopted experimental design by conducting comparison between groups that received no intervention and those that were exposed to a form of visual literacy instruction or worked with visual materials.



Figure 2. Research approaches adopted in the examined studies ($n = 30$).

Case studies, grounded theory, ethnography, and design-based research were used as qualitative strategies. Qualitative studies demonstrated a higher number and a greater variety of data collection techniques with a combination of observations, interviews, and content analysis. The two studies classified as mixed-methods consisted of quantitative and qualitative data collection techniques, such as questionnaires and observations, but also employed quantitative and qualitative approaches to data analysis and reporting.

Ten articles (33%) did not discuss the research methodology. The studies could be classified as case studies as they described participant interaction with visual resources and visual literacy instruction in specific classroom or workshop contexts. However, the case descriptions were based on the instructor's informal classroom observations and description of student work rather than systematic data collection and analysis.

The use of visual resources as a source of data in the research process is a unique aspect of studies focused on visual literacy practices. Most of the studies in the sample ($n = 26$, 87%) used images in the research process. Both analog and digital formats were present. The images were selected from secondary sources ($n = 18$, 60%) or produced by participants during the research process ($n = 11$, 37%). Three studies involved the combination of images from secondary sources as well as those made as part of a research project. Visual materials were used to elicit comments, as a subject of content analysis, or as a component of observation or testing of participant skills. Table 1 lists types of visual resources selected from secondary sources, provides source information (when reported in the study; otherwise is marked as NA – not available), and relates the use of images to the research strategy.

As Table 1 demonstrates, the studies employed a wide range of visual resources from picture books to

images selected from digital cultural heritage collections. The studies that included images in surveys or in classroom instruction focused on participants' skills in analyzing and interpreting images.

More than one-third of the studies ($n = 11$, 37%) analyzed images produced by participants and involved the investigation of participants' competency in interpreting images and creating visual forms of communication. Table 2 lists types of materials generated by participants and used actively during the research process. Three studies adopted comparative experimental design and quantitative analysis. Many of the studies in this category are classified as case studies that relied on informal classroom or workshop observations.

A significant number of studies using visual materials in the research process is understandable and expected in research of visual literacy. The variety of image types and sources points to the prevalence of visual materials and wealth of sources that can be used by students, librarians, and instructors for learning and teaching purposes and for researchers as a form of data. The types of visual materials identified in this study demonstrate the diversity of the modern information environment and the need to teach visual literacy competencies.

Discussion

The findings of this study indicate that empirical research of visual literacy practices is a new and multidisciplinary area. The diverse background of participants with students from art as well as STEM disciplines indicates a multidisciplinary character of visual literacy research. The examined studies included participants from multiple disciplines and were made up of university students and school children of different ages. The studies were conducted in libraries but also in the classroom and other educational settings. The findings about the type of participants signify that visual literacy is no longer an exclusive domain of art history and art education at universities. Research on visual literacy has expanded to other disciplines and school environments.

A relatively small number of studies indexed in the LISTA and CMMC databases points to the emergent character of this research. The limited number of visual literacy studies is somewhat surprising, especially that images are prevalent in social media and everyday practices but may reflect the traditional focus on text as a primary source of knowledge in academia. Visual literacy is still on the margins of academic discourse despite calls for making it part of the core curriculum in liberal education (Elkins,

Table 1. Types of visual resources selected from secondary sources.

Image type	Image source	No. of studies	Research strategy
Digitized photographs and artwork	Digital image collections	3	Qualitative case studies
Paintings and icons	Web	3	Quantitative surveys
Digital photographs	Web	3	Qualitative case study; ethnography experimental design
Diagrams, maps, and visualizations	Scholarly publications	2	Experimental design; design-based research
Cartoons	NA	2	Case study; experimental design
Pictures in books	Books	2	Case study – classroom observation
Graphics	Graphic novels	1	Case study – classroom observation
Images of paintings	NA	1	Mixed-methods
Film	NA	1	Case study – classroom observation
Total		18	

Table 2. Types of images created by participants during the research process.

Image type	No. of studies	Research strategy
Drawings	2	Experimental design; case study – classroom observation
Photographs	2	Ethnography case study – classroom observation
Art work	1	Case study – workshop observation
Cartoons	1	Experimental design;
Digital posters	1	Experimental design;
Graphic novels	1	Case study – classroom observation
Posters	1	Mixed-methods
Video	1	Case study – classroom observation
Visualization	1	Case study – classroom observation
Total	11	

2007; Little et al., 2010). The results are also aligned with recent studies on library instruction and students' skills and perceptions. Schwartz (2018), who reported the lack of awareness of the *Visual Literacy Competency Standards*, pointed to the lack of training in visual literacy in the LIS programs as one of the reasons for the limited adoption of visual literacy in academic libraries. Information literacy with its focus on textual resources remains at the center of library instruction. Studies reporting the students' lack of basic skills in selecting, evaluating, and using images

for academic work relate it to the limited library and classroom instruction in visual literacy concepts and competencies (Matusiak et al., 2019b).

The methodological approaches of the studies in the sample mirror the trends in LIS empirical research. The dominance of the quantitative approach with the use of experiments and surveys and a lower number of qualitative and mixed-methods strategies were also found in other content analysis or survey studies (Aytac and Slutsky, 2015; Chu, 2015; Luo, 2011; Matusiak, 2017). However, the high number of studies that relied on informal observations as opposed to a systematic data collection found in this study is unusual. Many studies in the sample were conducted by practicing librarians or teachers, and as Aytac and Slutsky (2015) note, practitioner research tends to be descriptive and site specific. The lack of reporting on research designs and data analysis in those studies may also be related to the limited training in research methods in LIS education that was discussed in previous research (Alemanne and Mandel, 2018; Kennedy and Brancolini, 2012, 2018; Luo, 2011).

Kennedy and Brancolini (2012, 2018) identified a number of factors that contribute to the successful completion and dissemination of research by library practitioners, including confidence, mentorship, institutional support, and training. Interestingly, 77% of academic librarians participating in the recent survey reported conducting research, but only 17% believed that their LIS Master's degree adequately prepared them to conduct original research (Kennedy and Brancolini, 2018). The call for new approaches to teaching research methods in LIS programs has been a reoccurring theme in literature. The authors emphasize the need to go beyond basic overview courses,

diversifying course offerings, and incorporating hands-on experience in collecting and analyzing data (Alemanne and Mandel, 2018; Evans et al., 2013; Luo, 2017). The exposure to research methodologies beyond fundamentals of qualitative and quantitative research is important for researcher practitioners who are interested in exploring new research areas, such as visual literacy practices.

The use of visual materials as a source of research data is a unique aspect of the studies in the sample. Most of the studies reported the use of images in the research process but did not describe the approaches to analyzing visual evidence. The authors of examined publications reported almost no information how visual evidence was analyzed and integrated with other data collected from surveys, observations, or interviews. As Rose (2016) emphasized, researching with visual materials is challenging as images are constructed through various social practices and are open to multiple interpretations. Visual culture and arts-based research developed visual research methods and guidelines for analyzing evidence (Prosser and Loxley, 2008; Rose, 2016; Weber, 2008). Information science research also offers examples of adopting visual analysis techniques to analyzing information concepts (Hartel, 2017). In addition to adopting formal methods to analyzing visual data, studies of visual literacy and other empirical research that utilizes images as data can benefit from employing a variety of research methods and engaging multiple researchers in data collection and analysis (Matusiak et al., 2019b).

Conclusion

This paper provides an overview of research methods and the types of images used in empirical studies of visual literacy practices. It contributes to the discussion about the uniqueness of visual literacy studies by examining the research methodology in a systematic way and highlighting the use of images in the research process. Although this study finds few unique methodological strategies, the analyzed sample does reveal an emergent, multidisciplinary character of visual literacy research and an opportunity for library practitioners to engage in this new area of literacy research and practice. This study advances LIS research by highlighting the importance of visual literacy in the current information environment and the need for studying literacy practices through a variety of research methods. Research such as this study raises awareness of the importance of selecting an appropriate research strategy and points to the diversity of available research methods and types of data. It

supports the argument for expanding training in research methods in LIS education and teaching diverse methods. Studying literacy in the current information environment requires researchers to explore new methodological approaches and research data that go beyond words and numbers.

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Abstracts

قتطافات

Knowledge visualization and mapping of information literacy, 1975-2018

التصور الذهني للمعرفة ورسم خرائط محو الأمية المعلوماتية ،
2018-1975

أمويو بوسير أونياتشا

مجلة الإفلا ، 2-46

مستخلص:

يتناول هذا المقال تطور محو الأمية المعلوماتية على مدار ثلاثة وأربعين عامًا (من 1975 إلى 2018)، باستخدام التصور الذهني للمعرفة ورسم خريطة بالمواد المنشورة في هذا المجال، على النحو الذي يتم تكشيفه في قاعدة بيانات سكوبس "Scopus". تشير النتائج إلى تطور مفهوم محو الأمية المعلوماتية من مفهوم موجه نحو المكتبات و / أو علم المكتبات إلى كونه مجالًا متعدد التخصصات. ولم يعد هذا المفهوم مقتصرًا على العلوم الاجتماعية؛ وإنما امتد ليشمل 27 تخصصًا وفقًا لتصنيف سكوبس للموضوعات. وقد ظهرت أنواعًا جديدة من محو الأمية بعد عام 2000؛ مثل محو الأمية الرقمية، ومحو الأمية الإعلامية، ومحو الأمية الصحية، ومحو أمية المعلومات التجارية، ومحو الأمية في مجال البيانات التعريفية والمحتوى، ومحو أمية المعلومات في أماكن العمل، ومحو الأمية العلمية، ومحو الأمية في مجال العلوم. وقد ظل التعليم في مجال المكتبات أبرز أساليب محو الأمية المعلوماتية في المكتبات الأكاديمية. ونخلص إلى أن محو الأمية المعلوماتية ذات طابع نشط، وتنتشر في العديد من التخصصات، ومن ثم، تتطلب طرق متعددة التخصصات وتعاونية لتنفيذها على نحو فعال في بيئات معلوماتية وتعليمية باتت متنوعة ومعقدة.

Refining information literacy practice: Examining the foundations of information literacy theory

تحسين ممارسات محو الأمية المعلوماتية: دراسة أسس نظرية محو الأمية المعلوماتية

مايكل فليبيرل ، كلارينس مايبي

مجلة الإفلا ، 2-46

مستخلص:

ثمة العديد من الطرق التي يمكن أن يساهم بها المكتبيون الأكاديميون في مهمة التدريس والتعليم لأي مؤسسة، تتراوح من التعليم المباشر إلى تصميم المهام. وفي ضوء وجود عدد كبير من ممارسات التعليم في مجال محو الأمية المعلوماتية، ما الذي يجب أن ينصب عليه وقت المكتبيين والمعلمين الأكاديميين وجهدهم ومواردهم، ولم ينبغي عليهم القيام بذلك؟ ومع تطلعنا إلى تحسين الممارسات التعليمية في مجال محو الأمية المعلوماتية، ومعالجة هذه التساؤلات الأساسية، نقوم بدراسة الالتزامات الفلسفية الأساسية لنظريتي محو الأمية المعلوماتية النقدية والتعلم المستنير. وتوصلنا إلى احتمال تحيز هاتين النظريتين لوجهة النظر الأوروبية في القرن العشرين. ويدعم هذا الاستنتاج فكرة أن الممارسات التعليمية "الجيدة" لمحو الأمية المعلوماتية في التعليم العالي تتطلب التزامًا فعالًا بنظرية محو الأمية المعلوماتية؛ لبيان ما يفعله المعلم، ولإثبات إمكانية دمج محو الأمية المعلوماتية في عملية التعلم في التعليم العالي.

Theory into practice: Challenges and implications for information literacy teaching

من النظرية إلى التطبيق: التحديات التي تواجه تدريس محو الأمية المعلوماتية وآثارها

ديبورا شاستر

مجلة الإفلا ، 2-46

مستخلص:

يسترشد هذا المقال بدراسة بحثية مختلطة الأساليب تناولت الوعي اللازم للمكتبيين بمحو الأمية المعلوماتية، وممارسات التدريس في مؤسسات التعليم العالي في كولومبيا البريطانية، كندا، والمنشورات المتعلقة بعلم أصول التدريس النقدي ونظرية محو الأمية. وقمت باستكشاف الفجوة القائمة في معرفة المكتبيين بالنظريات التي تدعم علم أصول التدريس، وقيمة التعلم وتطبيق النظريات في تدريس محو الأمية المعلوماتية، والاستراتيجيات التي تمكن من رفع مستوى الوعي، وتطبيق النظرية في ممارسات المكتبيين في التعليم العالي.

Playful learning for information literacy development

التعلم القائم على اللعب لتطوير محو الأمية المعلوماتية
أندرو والش

مجلة الإفلا ، 2-46

مستخلص:

في إطار طرح مفهوم محو الأمية المعلوماتية بوصفه مفهوما سياقيا واجتماعيا عميق البناء، تتناول هذه المقالة نظريات التعلم التي تستند إليها طرق التعلم عن طريق اللعب، حيث تضع هذه النظريات في إطار نهج اجتماعي البناء، وهو ما يتفق، على ما يبدو، مع الطبيعة المجتمعية لمحو الأمية المعلوماتية. وتبحث المقالة بعض العوائق التي تحول دون استخدام طرق التعلم القائمة على اللعب، والتي تنعكس في عدم الاعتراف باللعب في المطبوعات التي تتناول الطرق القائمة على اللعب في تطوير محو الأمية المعلوماتية. وترى أن منح الاهتمام المناسب للعب وللتعلم القائم على اللعب في منشورات محو الأمية المعلوماتية من شأنه أن يطور هذه الأساليب بصورة أكثر فعالية مما هو عليه الحال في الوقت الراهن.

Curating knowledge, creating change: University Knowledge Center, Kosovo national transition

حفظ المعرفة، إحداث التغيير: مركز المعرفة الجامعي، المجلس
الانتقالي الوطني لكوسوفو

ماري إم سومرفيل ، أنيتا ميريجاموتر ، إدمون هاجريزي ، إلهام
صياد عبيدي ، ميشيل جيبيني ، كريستين بروس ، إيان ستودلي

مجلة الإفلا ، 2-46

مستخلص:

تهدف مبادرة تصميم نظام تعاوني في جامعة الأعمال والتكنولوجيا في كوسوفو إلى إبراز المعارف المحلية وتعزيز تكوينها داخل الجامعة وفي جميع أنحاء البلاد. وتهدف أنشطة التصميم، منذ الشروع فيها في عام 2015 ، إلى تنشيط الأنظمة من خلال نمذجة المشهد العالمي للمعرفة والأنظمة القائمة على التكنولوجيا وعمليات النشاط البشري. وفي إطار الأنظمة القائمة على المعرفة، نجح تطبيق نظرية التعلم المستنير وتصميم تجارب المعلومات في توجيه أنظمة النماذج الأولية التي أبلغت عن بناء مستودع مؤسسي يحمل اسم "UBT". وتتوقع رؤية المعرفة أن تؤدي عمليات الحفظ والتنظيم وتيسير الوصول والاستخدام المستدامة إلى تسريع وتيرة المشاركة الأكاديمية والتنمية الوطنية والرؤية العالمية مع مرور الوقت، ومع الممارسة لتعزيز الانتقال من النظرية إلى الممارسة ومن الممارسة إلى النظرية.

Adult learning theories and autoethnography: Informing the practice of information literacy

نظريات تعلم الكبار والأنثوغرافيا الذاتية: إثراء ممارسات محو الأمية
المعلوماتية

كارين بوردونارو

مجلة الإفلا ، 2-46

مستخلص:

يمكن لنظريات التعلم المتعلقة بالتعلم الذاتي والتعلم مدى الحياة أن توجه ممارسات محو الأمية المعلوماتية في التعليم العالي للمتعلمين من الكبار. وقد يكون من المناسب لهذه النظريات استخدام الأنثوغرافيا الذاتية؛ وهي منهجية بحثية تعتمد على استكشاف التجارب الحية من خلال الانعكاسية التي توصلت إليها النظرية. وقد بدت ممارسات هذه المنهجية أثناء تطبيقها في محو الأمية المعلوماتية كنشاط فردي وجماعي على حد سواء. وكان لهذا الاستكشاف نتائج عديدة على الممارسة؛ منها اعتبارات الخيارات، والعوائق، وبيئات التعلم المواتية، وفرص التعلم غير الرسمي، والحاجة إلى التفكير لصالح المتعلمين من الكبار. إن تطبيق نظريات التعلم الذاتي، والتعلم مدى الحياة على ممارسات محو الأمية المعلوماتية يقدم لأنماء المكتبات منطلقات جديدة ومفيدة بشأن ممارساتها مع المتعلمين من الكبار.

Studying visual literacy: Research methods and the use of visual evidence

دراسة محو الأمية البصرية: طرق البحث واستخدام الأدلة البصرية

كريستينا ك. ماتوسيك

مجلة الإفلا ، 2-46

مستخلص:

أثار انتشار الصور وتزايد استخدامها في الممارسات الأكاديمية وفي المعلومات اليومية الاهتمام بمحو الأمية البصرية بوصفه مجالاً للبحث والتعليم في مجال المكتبات. تبحث هذه الورقة نهج التدريس وتعليم الطلاب باستخدام مجموعة متنوعة من أساليب البحث، والصور في عمليات البحث. كما تستعرض منهجيات البحث المتبعة في الدراسات التجريبية لمحو الأمية البصرية، التي نُشرت في المجلات الأكاديمية في الفترة ما بين 2011 و 2017. تشير النتائج إلى أن ثلث الدراسات التي جرى فحصها (33%) اعتمدت نهجا كميا، كما كانت المسوحات هي الاستراتيجية الأكثر شيوعا. ومع أن الدراسات النوعية والدراسات التي اعتمدت أساليباً مختلطة كانت قليلة، إلا أنها قدمت مجموعة أكثر تنوعاً من الاستراتيجيات وتقنيات جمع البيانات. ولم يبلغ ثلث الدراسات (33%) من العينة عن أي منهجية للبحث. واستخدمت معظم الدراسات (87%) أدلة بصرية في عملية البحث.

摘要**Knowledge visualization and mapping of information literacy, 1975–2018**

知识可视化与信息素养图谱, 1975–2018

Omwoyo Bosire Onyanha

国际图联期刊, 46-2, 107–123

摘要: 本文通过知识可视化与Scopus数据库索引文献图谱等手段, 研究了信息素养在过去43年(1975–2018)的发展情况。结果显示, 信息素养从以图书馆和图书馆事业为核心的概念发展到多学科领域; 它突破了社会科学领域, 扩展到了Scopus数据库主题分类中的27个学科。2000年以后出现了多种新的素养概念, 包括数字化素养、媒体素养、健康素养、商业信息素养、元素养、内容素养、工作场所信息素养、科学素养等等。图书馆指导仍然是高校图书馆提升信息素养的主要方法。本文得出结论: 信息素养是动态的, 涵盖多个学科, 因此在多样化且复杂的信息与学习环境中, 需要采用跨学科合作的方式。

**Refining information literacy practice:
Examining the foundations of information literacy theory**

重新定义信息素养实践: 信息素养理论基础研究

Michael Flierl, Clarence Maybee

国际图联期刊, 46-2, 124–132

摘要: 高校图书馆员可以通过多种途径为图书馆教学任务(从直接指导到任务设计)作出贡献。在信息素养教育实践纷繁复杂的背景下, 高校图书馆员和教学人员应重点将时间、精力和资源投入到哪些领域? 原因是什么? 本文以完善信息素养教育实践和解决这些根本问题为目标, 研究了两种信息素养理论的基本概念: “关键信息素养”和“基于信息的学习”。我们发现, 这些理论可能更加偏向20世纪的欧洲世界观。这印证了一个观点: 高等教育机构中“良好的”信息素养教育实践需要通过信息素养理论来规范教学人员的行为, 并证明信息素养为何能够成为高等教育的重要内容。

Theory into practice: Challenges and implications for information literacy teaching

从理论到实践: 信息素养教学的挑战和意义

Deborah Schachter

国际图联期刊, 46-2, 133–142

摘要: 本文采用多种方法对加拿大不列颠哥伦比亚省高校图书馆员的信息素养意识和教学实践, 以及重要的教学和素养理论相关文献进行了研究。本文探索了图书馆员对教学理论掌握上的不足之处, 信息素养教学和应用理论的意义, 以及提升高等教育机构的信息素养意识和图书馆员对理论的应用水平的方法。

Playful learning for information literacy development

通过寓教于乐提升信息素养

Andrew Walsh

国际图联期刊, 46-2, 143–150

摘要: 本文认为, 信息素养是一个与社会环境密不可分的概念, 并在此基础上探索了“寓教于乐”背后的教学理论。本文根据信息素养的社会性, 将研究置于社会环境之中, 探讨了采用“寓教于乐”方法的一些障碍——包括在有助于提升信息素养的文献中, 人们缺乏对“乐趣”的认可。本文得出结论: 在信息素养文献领域, 恰当地平衡“玩”与“寓教于乐”可以帮助我们更有效地采用这种教学方法。

**Curating knowledge, creating change:
University Knowledge Center, Kosovo national transition**

管理知识、孕育变革: 大学知识中心——科索沃的全国转型

Mary M Somerville, Anita Mirijamdotter, Edmond Hajrizi, Elham Sayyad-Abdi, Michele Gibney, Christine Bruce, Ian Stoodley

国际图联期刊, 46-2, 151–162

摘要：科索沃工商大学开展了一个系统设计合作计划，目的是在大学和全国范围内展现本地知识，提高本地创建知识的能力。设计活动始于2015年，旨在给全球知识环境、技术支持系统和人类活动过程建模。在信息系统框架内，我们利用基于信息的学习理论和信息体验设计工具指导建立了原型系统，并成立了机构知识库，称为“工商大学知识中心”。我们预计，持续的保护、整理、探索、获取和使用有助于提升高校参与的速度、加快实现全国拓展和全球可视化，进而推动理论与实践的相互转化。

Adult learning theories and autoethnography: Informing the practice of information literacy

成人学习理论与自传式民族志：为信息素养实践提供信息

Karen Bordonaro

国际图联期刊, 46-2, 163-171

摘要：自主学习和终身学习理论为高等教育机构中的成人教育信息素养实践提供了依据。这些理论同样适用于“自传式民族志”——一种根据理论进行自我审视，探索生活体验的研究方法。关于信息素养的自我民族志研究既是单独行为，也是

集体活动，该领域的研究将对实践产生多方面的影响，包括对选择、障碍、学习环境、非正式学习机会和成人学员自我审视需求的思考。将自主学习和终身学习理论应用于成人学员的信息素养实践，可以为图书馆员提供新的有效视角。

Studying visual literacy: Research methods and the use of visual evidence

视觉素养研究：研究方法 with 视觉证据的使用

Krystyna K Matusiak

国际图联期刊, 46-2, 172-181

摘要：图片不断涌现，其在学术活动和日常信息实践中的使用也在增加，提升了相关人员对“视觉素养”这一研究领域和图书馆指导方法的兴趣。本文采用多种方法和大量图片研究了教与学的过程，并对2011年到2017年间发表在学术期刊上的关于视觉素养的实证研究方法进行了总结。结果显示，三分之一(33%)的研究对象采用了最常用的量化分析方法。定性研究与混合方法占少数，但也展现了多种策略和数据收集方法。另外三分之一(33%)没有提出研究方法。大多数(87%)研究对象在研究过程中使用了视觉证据。

Sommaires

Knowledge visualisation and mapping of information literacy, 1975–2018

Visualisation des connaissances et cartographie de la maîtrise de l'information, 1975–2018

Omwoyo Bosire Onyancha

IFLA Journal, 46-2, 107-123

Résumé: Cet article examine l'évolution de la maîtrise de l'information sur une période de quarante-trois ans (de 1975 à 2018) en utilisant la visualisation des connaissances et la cartographie des documents la concernant, tels qu'ils sont indexés dans la base de données Scopus. Il montre l'évolution de la maîtrise de l'information, qui est passée d'un concept axé sur les bibliothèques et la bibliothéconomie à une discipline multidisciplinaire ne se limitant plus aux

sciences sociales, mais se répartissant sur les 27 domaines de classification des sujets déterminés dans Scopus. De nouvelles formes de maîtrise de l'information ont vu le jour après 2000, allant de la maîtrise du numérique, des médias, des informations de santé et des informations économiques à la méta-maîtrise des informations ainsi qu'à la maîtrise du contenu, des informations en milieu de travail, des informations scientifiques et des sciences. La bibliothéconomie demeure un moyen important pour dispenser la maîtrise de l'information dans les bibliothèques universitaires. L'article conclut en disant que la maîtrise de l'information est dynamique, se répartit sur de nombreuses disciplines et nécessite par conséquent des approches interdisciplinaires et concertées pour bien la dispenser dans des environnements d'information et d'apprentissage hétérogènes et complexes.

Refining information literacy practice: Examining the foundations of information literacy theory

Perfectionner la pratique de la maîtrise de l'information: examen des fondements de la théorie de la maîtrise de l'information

Michael Flierl, Clarence Maybee

IFLA Journal, 46–2, 124–132

Résumé: Il y a de multiples façons pour un bibliothécaire universitaire de contribuer à la mission d'enseignement et d'apprentissage d'un établissement, depuis l'enseignement direct à la conception de devoirs. Étant donné cette pléthore de pratiques éducatives de maîtrise de l'information, à quoi faudrait-il que les bibliothécaires universitaires et les enseignants consacrent du temps, du travail et des ressources, et pourquoi devraient-ils le faire? Dans l'objectif d'améliorer les pratiques éducatives de maîtrise de l'information ainsi que de répondre à ces questions essentielles, les auteurs examinent les engagements philosophiques fondamentaux de deux théories de maîtrise de l'information: la maîtrise critique de l'information et l'apprentissage fondé sur l'information. Ils constatent que ces théories semblent avoir un parti pris favorable à l'égard de la vision européenne du monde au 20^e siècle, ce qui renforce l'idée qu'une « bonne » pratique éducative de la maîtrise de l'information dans l'enseignement supérieur nécessite un engagement actif à l'égard de la théorie de maîtrise de l'information, afin de justifier ce que fait un enseignant et de démontrer pourquoi cette maîtrise de l'information doit faire partie intégrante de l'apprentissage dans l'enseignement supérieur.

Theory into practice: Challenges and implications for information literacy teaching

De la théorie à la pratique: les défis et implications pour l'enseignement de la maîtrise de l'information

Deborah Schachter

IFLA Journal, 46–2, 133–142

Résumé: Cet article est fondé sur une étude de recherche par méthodes mixtes de la sensibilisation critique des bibliothécaires à la maîtrise de l'information et aux pratiques pédagogiques dans les établissements supérieurs en Colombie britannique au Canada, ainsi qu'à la littérature consacrée à la pédagogie critique et à la théorie de la maîtrise de l'information. L'auteure s'est intéressée au fossé ressenti par les bibliothécaires à l'égard de ce qu'ils savent des théories à la base de leur pédagogie, à l'importance de connaître ces

théories et de les appliquer pour enseigner la maîtrise de l'information et aux stratégies pouvant permettre une meilleure sensibilisation et l'application de la théorie aux pratiques des bibliothécaires dans l'enseignement supérieur.

Playful learning for information literacy development

L'apprentissage ludique pour développer la maîtrise de l'information

Andrew Walsh

IFLA Journal, 46–2, 143–150

Résumé: Considérant la maîtrise de l'information comme un concept profondément contextuel et ayant une structure sociale, cet article examine les théories consacrées à une approche ludique de l'apprentissage. Il les situe dans le cadre d'une approche socialement structurée, qui semble correspondre à la nature socialement structurée de la maîtrise de l'information. Il étudie certains des obstacles qui empêchent une approche ludique de l'apprentissage, ce que reflète le manque de prise en compte du jeu dans la littérature consacrée aux approches ludiques pour développer la maîtrise de l'information. L'auteur suggère que si le jeu et l'apprentissage ludique étaient correctement pris en compte dans la littérature spécialisée dans la maîtrise de l'information, cela permettrait de développer de telles approches de façon plus efficace que ce qui est fait actuellement.

Curating knowledge, creating change: University Knowledge Center, Kosovo national transition

Conserver les connaissances, créer du changement: Centre universitaire de Connaissances, transition nationale au Kosovo

Mary M Somerville, Anita Mirijamdotter, Edmond Hajrizi, Elham Sayyad-Abdi, Michele Gibney, Christine Bruce, Ian Stoodley

IFLA Journal, 46–2, 151–162

Résumé: Une initiative pour concevoir un système collaboratif à l'Institut universitaire de gestion et de technologie (UBT) du Kosovo a pour objectif de rendre visibles les connaissances locales et d'améliorer la création locale de savoir, aussi bien au sein de l'institut que dans l'ensemble du pays. Depuis le lancement de cette initiative en 2015, des activités créatives ont visé à activer des systèmes en façonnant le paysage global des connaissances, les systèmes reposant sur la technologie et les processus d'activités humaines. Dans le cadre de systèmes d'information,

l'application d'une théorie d'apprentissage basé sur l'information et de la conception de l'expérience utilisateur (Information Experience Design – IxD) a guidé la création de systèmes prototypes, qui ont permis la construction d'un dépôt institutionnel appelé UBT Knowledge Center. Cette vision du savoir anticipe sur le fait que des processus durables de conservation, d'organisation, de découverte, d'accès et d'utilisation peuvent, au cours du temps et avec la pratique, accélérer l'engagement universitaire, le développement national et la visibilité globale pour stimuler le passage de la théorie à la pratique et de la pratique à la théorie.

Adult learning theories and autoethnography: Informing the practice of information literacy

Théories d'apprentissage des adultes et auto-ethnographie: documenter la pratique de la maîtrise de l'information

Karen Bordonaro

IFLA Journal, 46–2, 163–171

Résumé: Les théories de l'apprentissage autonome et de l'apprentissage permanent peuvent fournir des informations pour pratiquer la maîtrise de l'information dans l'enseignement supérieur destiné aux apprenants adultes. Ces théories se prêtent à l'utilisation de l'auto-ethnographie, une méthodologie de recherche fondée sur l'exploration des expériences vécues par le biais de la réflexivité guidée par la théorie. Quand on applique l'auto-ethnographie à la maîtrise de l'information, cette pratique se révèle être une activité aussi bien individuelle que collective. Cette exploration débouche sur des ramifications multiples de la pratique de la maîtrise de l'information, qui englobent des considérations concernant les choix, les obstacles, les environnements favorables à l'apprentissage, les

possibilités informelles d'apprentissage et le besoin de réflexion qu'ont les apprenants adultes. Appliquer les théories de l'apprentissage autonome et de l'apprentissage permanent à la pratique de la maîtrise de l'information offre aux bibliothécaires des perspectives inédites et utiles sur cette pratique avec des apprenants adultes.

Studying visual literacy: Research methods and the use of visual evidence

Étude de la littératie visuelle: méthodes de recherche et utilisation de la preuve visuelle

Krystyna K Matusiak

IFLA Journal, 46–2, 172–181

Résumé: La prolifération des images et l'augmentation de leur usage dans les pratiques d'information universitaires et quotidiennes a suscité un intérêt pour la littératie visuelle comme domaine de recherche et de formation bibliothécaire. L'article examine les approches d'enseignement et l'apprentissage des étudiants à l'aide de diverses méthodes de recherche et en utilisant des images au cours du processus de recherche. Il donne un aperçu des méthodologies de recherche utilisées dans des études empiriques de la littératie visuelle publiées dans des revues savantes entre 2011 et 2017. Les résultats montrent qu'un tiers (33%) des études examinées adoptaient une approche quantitative, les enquêtes étant la stratégie la plus populaire. Les études qualitatives et basées sur des méthodes mixtes étaient en minorité, mais représentaient une plus grande diversité de stratégies et de techniques de collecte des données. Un tiers (33%) des études de l'échantillon ne faisaient pas état d'une quelconque méthodologie de recherche. La plupart des études (87%) utilisaient des preuves visuelles dans le processus de recherche.

Zusammenfassung

Knowledge visualisation and mapping of information literacy, 1975–2018

Wissensvisualisierung und Darstellung der Informationskompetenz, 1975–2018

Omwoyo Bosire Onyanha

IFLA Journal, 46–2, 107–123

Abstrakt: Dieser Artikel untersucht die Entwicklung der Informationskompetenz in dreiundvierzig Jahren

(von 1975 bis 2018); dabei wird das Aufzeigen des Wissens und die Darstellung der Literatur, wie sie in der Scopus-Datenbank indiziert ist, verwendet. Die Ergebnisse zeigen, dass sich die Informationskompetenz von einem bibliotheks- und/oder bibliothekarisch orientierten Konzept zu einem multidisziplinären Fachbereich entwickelt hat und nicht mehr auf die Sozialwissenschaften beschränkt ist, sondern sich in der Fachklassifikation von Scopus auf 27 Disziplinen verteilt. Nach dem Jahr 2000 sind neue Alphabetisierungsformen entstanden, zu denen die digitale

Kompetenz, Medienkompetenz, Gesundheitskompetenz, Wirtschaftsinformationskompetenz, Metallkompetenz, Inhaltskompetenz, Informationskompetenz am Arbeitsplatz, wissenschaftliche Kompetenz und Wissenschaftskompetenz zählen. Einweisungen in einer Bibliothek sind nach wie vor eine herausragende Methode zur Vermittlung von Informationskompetenz in wissenschaftlichen Bibliotheken. Wir kommen zu dem Schluss, dass die Informationskompetenz dynamisch ist und sich über viele Disziplinen erstreckt und daher interdisziplinäre und kooperative Ansätze für ihre effektive Vermittlung in einer vielfältigen und komplexen Informations- und Lernumgebung, wie sie sich heute darstellt, erfordern würde.

Refining information literacy practice: Examining the foundations of information literacy theory

Verfeinerung der Praxis der Informationskompetenz: Untersuchung der Grundlagen zur Theorie der Informationskompetenz

Michael Flierl, Clarence Maybee

IFLA Journal, 46–2, 124–132

Abstrakt: Für einen akademischen Bibliothekar bieten sich viele Möglichkeiten, einen Beitrag zum Lehr- und Lernauftrag einer Institution zu leisten: von direktem Unterricht bis hin zur Gestaltung von Aufgaben. Auf was sollten sich akademische Bibliothekare und Pädagogen angesichts dieser Fülle von Bildungspraktiken zur Informationskompetenz in Bezug auf ihre Zeit, Arbeit und Mittel konzentrieren, und warum? Im Hinblick auf die Verbesserung der Bildungspraxis bei der Informationskompetenz und die Beantwortung dieser grundlegenden Fragen untersuchen wir die zugrunde liegenden philosophischen Verpflichtungen von zwei Theorien zur Informationskompetenz, der kritischen Informationskompetenz und dem Informierten Lernen. Wir stellen fest, dass diese Theorien zur Informationskompetenz durch eine europäische Weltansicht des 20. Jahrhunderts möglicherweise verzerrt sind. Dieses Ergebnis unterstützt die Idee, dass eine „gute“ Bildungspraxis zur Informationskompetenz in der Hochschulbildung eine aktive Auseinandersetzung mit der Theorie über die Informationskompetenz erfordert, um zu rechtfertigen, was man als Pädagoge tut, und um aufzuzeigen, warum die Informationskompetenz ein integraler Bestandteil in der Hochschulbildung sein kann.

Theory into practice: Challenges and implications for information literacy teaching

Theorie in der Praxis: Herausforderungen und Auswirkungen auf den Unterricht über die Informationskompetenz

Deborah Schachter

IFLA Journal, 46–2, 133–142

Abstrakt: Dieser Artikel beruht einerseits auf einer Forschungsstudie mit mehreren Methoden über das Bewusstsein von Bibliothekaren zur kritischen Informationskompetenz und die Lehrpraxis in Hochschulinrichtungen in Britisch-Kolumbien, Kanada, sowie andererseits auf der Literatur zur kritischen Pädagogik und Alphabetisierungstheorie. Ich untersuche die wahrgenommene Lücke im Wissen der Bibliothekare über Theorien, die ihre Pädagogik untermauern, den Wert des Lernens über Theorien und deren Anwendung auf die Vermittlung von Informationskompetenz sowie Strategien, die eine bessere Wahrnehmung und Anwendung der Theorie auf die Praxis der Bibliothekare in der Hochschulbildung ermöglichen können.

Playful learning for information literacy development

Spielerisches Lernen über die Entwicklung der Informationskompetenz

Andrew Walsh

IFLA Journal, 46–2, 143–150

Abstrakt: Dieser Artikel betrachtet die Informationskompetenz als ein zutiefst kontextuelles und sozial konstruiertes Konzept und berücksichtigt dabei die Lerntheorien hinter dem Ansatz des spielerischen Lernens. Dies wird innerhalb eines sozial konstruierten Ansatzes eingeordnet, der mit der sozial konstruierten Natur der Informationskompetenz in Einklang zu stehen scheint. Dabei werden einige der Hindernisse berücksichtigt, die der Anwendung eines spielerischen Lernansatzes entgegenstehen, was sich in der mangelnden Anerkennung des Spiels in der Fachliteratur widerspiegelt, die spielerische Ansätze zur Entwicklung der Informationskompetenz in Betracht zieht. Es wird vorgeschlagen, dass eine angemessene Berücksichtigung des Spiels und des spielerischen Lernens in der Informationskompetenz-Literatur die Entwicklung solcher Ansätze effektiver als bisher unterstützen würde.

**Curating knowledge, creating change:
University Knowledge Center, Kosovo
national transition**

**Wissen kuratieren, Wandel schaffen:
Wissenszentrum der Universität, nationaler
Wandel im Kosovo**

Mary M. Somerville, Anita Mirijamdotter, Edmond Hajrizi, Elham Sayyad-Abdi, Michele Gibney, Christine Bruce, Ian Stoodley

IFLA Journal, 46–2, 151–162

Abstrakt: Eine gemeinsame Initiative zur Systemgestaltung an der Universität für Wirtschaft und Technologie im Kosovo zielt darauf ab, lokales Wissen sichtbar zu machen und die lokale Wissensschaffung innerhalb der Universität und im ganzen Land zu fördern. Seit seiner Einführung im Jahr 2015 geht es bei den Entwicklungsarbeiten darum, Systeme durch die Modellierung der globalen Wissenslandschaft, technologiegestützte Systeme und menschliche Aktivitätsprozesse zu aktivieren. Im Rahmen der informierten Systeme führte die Anwendung der Theorie zum informierten Lernen und Information Experience Design (IXD) zu Prototyping-Systemen, die den Aufbau eines institutionellen Repositoriums namens UBT Knowledge Center ermöglichten. Beim Leitbild zum Wissen wird davon ausgegangen, dass nachhaltige Prozesse der Kuratierung, Organisation, Entdeckung, des Zugangs und der Nutzung das akademische Engagement, die nationale Entwicklung und die globale Sichtbarkeit im Laufe der Zeit und durch die Praxis beschleunigen werden, um die Theorie-Praxis und die Praxis-Theorie zu fördern.

**Adult learning theories and autoethnography:
Informing the practice of information literacy**

**Theorien der Erwachsenenbildung und
Autoethnographie: Information über die
Praxis der Informationskompetenz**

Karen Bordonaro

IFLA Journal, 46–2, 163–171

Abstrakt: Die Lerntheorien des selbstgesteuerten Lernens und des lebenslangen Lernens können die Praxis der Informationskompetenz in der Hochschulbildung für erwachsene Lernende beeinflussen. Diese Theorien eignen sich für den Einsatz der Autoethnographie, einer Forschungsmethodik, die sich auf die

Erforschung gelebter Erfahrungen durch theoretisch fundierte Reflexivität stützt. Bei der Durchführung einer Autoethnographie zur Informationskompetenz erscheint ihre Praxis sowohl als singuläre als auch als kollektive Aktivität. Aus dieser Untersuchung ergeben sich zahlreiche Konsequenzen für die Praxis. Zu diesen Auswirkungen gehören Überlegungen über Entscheidungsmöglichkeiten, Hindernisse, günstige Lernumgebungen, informelle Lernmöglichkeiten und die Notwendigkeit der Reflexion für erwachsene Lernende. Die Anwendung der Lerntheorien des selbstgesteuerten und lebenslangen Lernens auf die Praxis der Informationskompetenz bietet Bibliothekaren neue und nützliche Perspektiven auf die Praxis mit erwachsenen Lernenden.

**Studying visual literacy: Research methods
and the use of visual evidence**

**Untersuchung der visuellen Kompetenz:
Forschungsmethoden und die Verwendung
visueller Beweise**

Krystyna K. Matusiak

IFLA Journal, 46–2, 172–181

Abstrakt: Die Verbreitung von Bildern und ihre zunehmende Verwendung in der akademischen und alltäglichen Informationspraxis hat das Interesse an der visuellen Kompetenz als Bereich der Forschung und des Bibliotheksunterrichts geweckt. Lehransätze und das Lernen der Studierenden werden mit verschiedenen Forschungsmethoden und unter Verwendung von Bildern im Forschungsprozess untersucht. Dieses Papier bietet einen Überblick über die Forschungsmethodik, die in empirischen Studien zur visuellen Kompetenz, die zwischen 2011 und 2017 in akademischen Zeitschriften veröffentlicht wurden, angewandt wurde. Die Ergebnisse zeigen, dass ein Drittel (33%) der untersuchten Studien einen quantitativen Ansatz verfolgt, bei dem Umfragen die beliebteste Strategie sind. Qualitative Studien und Studien mit gemischten Methoden waren eine Minderheit, repräsentierten jedoch eine größere Vielfalt an Strategien und Datenerhebungstechniken. Ein Drittel (33%) der Studien in der Stichprobe berichtete über keine Forschungsmethodik. Die meisten Studien (87%) verwendeten visuelle Evidenz im Forschungsprozess.

Аннотация

Knowledge visualisation and mapping of information literacy, 1975–2018

Визуализация знаний и графическое отображение информационной грамотности, 1975–2018

Омвойо Босайр Оньянча

IFLA Journal, 46–2, 107–123

Аннотация: В рамках данной статьи рассматривается развитие информационной грамотности в течение сорока трех лет (с 1975 по 2018 гг.) с использованием визуализации знаний и графического отображения соответствующей литературы, согласно индексам базы данных Scopus. Результаты показывают, что информационная грамотность трансформировалась из библиотечной и/или библиотековедческой концепции в многодисциплинарное понятие и более не вписывается в рамки общественных наук, но распространяется на 27 дисциплин согласно тематической классификации Scopus. После 2000-го года возникли новые виды грамотности, в число которых входят: цифровая грамотность, медийная грамотность, медицинская грамотность, грамотность в сфере коммерческой информации, мета-грамотность, контентная грамотность, грамотность относительно рабочего места, грамотность в области научных принципов и грамотность в области научных вопросов. Библиотечный инструктаж остается основным методом распространения информационной грамотности в академических библиотеках. Мы делаем вывод, что информационная грамотность динамична, она распространяется на многие дисциплины и, следовательно, требует междисциплинарных подходов и стратегии сотрудничества для эффективного распространения в условиях информационной и обучающей среды, которые, как оказалось, сложны и многообразны.

Refining information literacy practice: Examining the foundations of information literacy theory

Совершенствование методов преподавания информационной грамотности: Изучение основ теории информационной грамотности

Майкл Флаерл, Кларенс Мейби

IFLA Journal, 46–2, 124–132

Аннотация: Существует множество способов, с помощью которых библиотекарь может содействовать процессу преподавания и обучения как миссии учебного заведения: от проведения прямого

инструктажа и вплоть до составления учебных заданий. Учитывая такое многообразие приемов преподавания информационной грамотности, чему же должны посвящать свои время, усилия и ресурсы академические библиотекари и преподаватели, и почему им следует так поступать? Исходя из идеи совершенствования способов преподавания информационной грамотности, и с учетом этих основополагающих вопросов, мы рассматриваем фундаментальные философские подходы двух теорий информационной грамотности: критичной информационной грамотности и осознанного обучения. Мы обнаружили, что эти теории информационной грамотности, вероятно, находятся под влиянием Европейского мировоззрения 20-го века. Данное открытие подкрепляет идею, что “рекомендованные” методы преподавания информационной грамотности в учреждениях высшего образования требуют активного взаимодействия с теорией информационной грамотности, чтобы обосновывать действия преподавателя и наглядно показывать, почему информационная грамотность может быть неотъемлемой частью высшего образования.

Theory into practice: Challenges and implications for information literacy teaching

Применение теории на практике: Проблемы и последствия для преподавания информационной грамотности

Дэбора Шахтер

IFLA Journal, 46–2, 133–142

Аннотация: Данная статья является результатом научного исследования с использованием смешанных методов, направленного на изучение осведомленности библиотекарей в вопросах критической информационной грамотности и методов обучения в высших учебных заведениях Британской Колумбии, Канада, а также литературы по теме критической педагогики и грамотности. Я изучаю очевидный пробел в знаниях библиотекарей относительно тех теоретических вопросов, которые лежат в основе их педагогики, определяю ценность как получения знаний о теориях, так и применения самих теорий в области обучения информационной грамотности, а также стратегий, позволяющих расширить осведомленность как в теоретической, так и в практической областях работы библиотекарей в сфере высшего образования.

Playful learning for information literacy development

Обучение в процессе игры как способ повышения информационной грамотности

Эндрю Уолш

IFLA Journal, 46–2, 143–150

Аннотация: В рамках настоящей статьи информационная грамотность воспринимается как глубоко контекстуальное и социально обусловленное понятие, и в ней рассматриваются теории обучения, лежащие в основе обучения в процессе игры. Обучение рассматривается в рамках социально обусловленного подхода, который, как кажется, согласуется с социально обусловленной природой информационной грамотности. Принимаются во внимание некоторые барьеры на пути использования обучения в процессе игры, которые выражаются в недостаточном признании игрового процесса в литературе, посвященной игровым подходам к развитию информационной грамотности. Высказывается предположение, что при должном внимании к играм и вопросам обучения в процессе игры в литературе, касающейся информационной грамотности, развитие подобных подходов было бы более эффективным по сравнению с текущим моментом.

Curating knowledge, creating change: University Knowledge Center, Kosovo national transition

Курирование знаний, созидание перемен: Университетский центр знаний, национальная перестройка Косово

Мери М Сомервилль, Анита Мириямдоттер, Эдмонд Хайризи, Эльхам Сайяд-Абди, Мишель Гибни, Кристин Брюс, Иан Студли

IFLA Journal, 46–2, 151–162

Аннотация: Программа совместного системного проектирования в Университете бизнеса и технологий в Косово направлена на то, чтобы выделить локальные знания, а также на стимулирование формирования локальных знаний как в рамках университета, так и в масштабах всей страны. С самого начала программы в 2015-м году проектная деятельность направлена на задействование систем путем моделирования глобального ландшафта знаний, технологически поддерживаемых систем, и также

процессов человеческой деятельности. В рамках Информированных Систем, применения теории информированного обучения и систем прототипирования, использующих Дизайн на основе информационного опыта (IXD), был создан институциональный репозиторий, названный Центром знаний Университета бизнеса и технологий. Согласно замыслу, непрерывная научная поддержка, процессы, связанные с организацией, проведением исследований, доступом к ресурсу и его использованием, будут стимулировать рост академической активности, национального развития, глобальной заметности, и со временем, по мере использования, послужат как для превращения теории в практику, так и наоборот - для перехода от практики к теории.

Adult learning theories and autoethnography: Informing the practice of information literacy

Теории обучения взрослых студентов и аутоэтнография: Информационный инструмент для преподавания информационной грамотности

Кэрен Бордонаро

IFLA Journal, 46–2, 163–171

Аннотация: Теории самостоятельного обучения и обучения в течение всей жизни могут быть использованы в процессе преподавания информационной грамотности в высших учебных заведениях для взрослых студентов. Эти теории поддаются аутоэтнографическому исследованию, методу, основанному на изучении жизненного опыта через рефлексивность, подтвержденную теорией. При проведении аутоэтнографии относительно информационной грамотности, обучение последней рассматривается одновременно как одиночная, так и как коллективная деятельность. С практической точки зрения, это открытие связано со многими факторами. К таким факторам относятся: размышления по поводу выбора, барьеры, благоприятные условия обучения, возможности для неформального обучения, а также необходимость осмысления для взрослых учеников. Использование теорий самостоятельного обучения и обучения в течение всей жизни в процессе преподавания информационной грамотности открывает перед библиотекарями новые перспективные возможности обучения взрослых студентов.

Studying visual literacy: Research methods and the use of visual evidence

Изучение визуальной грамотности: Методы исследования и использование визуальных доказательств

Кристина К Матусяк

IFLA Journal, 46–2, 172–181

Аннотация: Существенный рост количества изображений, а также расширение их использования как в учебном процессе, так и в повседневных методах взаимодействия с информацией, пробудили интерес к визуальной грамотности как области научного исследования и библиотечной информационной подготовки. Рассматриваются подходы к преподаванию и обучению студентов, для чего применяются разнообразные методы

исследования, также в процессе исследования используются изображения. В настоящей работе представлен обзор методологии исследования, применяемой в эмпирических исследованиях визуальной грамотности, опубликованных в академических журналах в период между 2011-м и 2017-м годами. Результаты показывают, что в одной трети (33%) рассмотренных работ использован количественный подход, а самым популярным методом был опрос. Исследования, в которых применялись качественный, а также смешанный подходы, были в меньшинстве, однако в них представлено большее разнообразие методов и способов сбора данных. В одной трети (33%) работ, представленных в выборке, отсутствует информация об использованной методике. В большинстве работ (87%) в процессе проведения исследования использованы визуальные доказательства.

Resúmenes

Knowledge visualisation and mapping of information literacy, 1975–2018

Visualización del conocimiento y representación de la alfabetización informacional, 1975–2018

Omwoyo Bosire Onyancha

IFLA Journal, 46–2, 107–123

Resumen: En este artículo se analiza la evolución de la alfabetización informacional a lo largo de cuarenta y tres años (de 1975 a 2018), utilizando la visualización del conocimiento y la representación de su bibliografía, tal y como esta se indexa en la base de datos Scopus. Los resultados revelan que la alfabetización informacional ha evolucionado, pasando de ser un concepto orientado a las bibliotecas o la biblioteconomía a ser un campo multidisciplinar que ha dejado de estar reservado para las ciencias sociales que se dispersa por 27 disciplinas de la clasificación temática de Scopus. Después del año 2000 surgieron nuevas alfabetizaciones, que incluyen la alfabetización digital, la alfabetización mediática, la alfabetización sanitaria, la alfabetización en información empresarial, la metaalfabetización, la alfabetización de contenido, la alfabetización en información sobre el lugar de trabajo, la alfabetización científica y la alfabetización en ciencias. La formación de usuarios sigue siendo un mecanismo importante de alfabetización informacional en las bibliotecas académicas. Concluimos que la alfabetización informacional es dinámica y engloba muchas disciplinas, por lo que exigiría enfoques

interdisciplinarios y colaborativos para su correcta impartición en los diversos y complejos entornos actuales de aprendizaje e información.

Refining information literacy practice: Examining the foundations of information literacy theory

Perfeccionamiento de la práctica de alfabetización informacional: análisis de los fundamentos de la teoría de la alfabetización informacional

Michael Flierl, Clarence Maybee

IFLA Journal, 46–2, 124–132

Resumen: Las bibliotecas académicas pueden contribuir de muchas formas a la misión educadora y docente de una institución, desde la formación directa de usuarios hasta el diseño de las tareas. Habida cuenta de esta abundancia de prácticas educativas relacionadas con la alfabetización informacional (AI), ¿en qué deben centrar su tiempo, trabajo y recursos los bibliotecarios y los educadores, y por qué? Pensando en la mejora de las prácticas educativas relacionadas con la AI y en el abordaje de estas cuestiones fundamentales, examinamos las bases filosóficas de dos teorías de AI: la AI crítica y el aprendizaje fundamentado. Observamos que estas teorías de la AI pueden estar condicionadas por una visión del mundo europeo del siglo XX. Esta observación respalda la idea de que la «buena» práctica educativa relacionada con la AI en la enseñanza superior requiere la intervención activa de la teoría de la AI para justificar lo que se hace

como educador y demostrar la razón por la que la AI puede formar parte integral del aprendizaje en la enseñanza superior.

Theory into practice: Challenges and implications for information literacy teaching

De la teoría a la práctica: retos e implicaciones para la enseñanza de la alfabetización informacional

Deborah Schachter

IFLA Journal, 46–2, 133–142

Resumen: Este artículo se basa en un estudio de investigación de diversas prácticas docentes y de sensibilización sobre la alfabetización informacional crítica de los bibliotecarios en instituciones de enseñanza superior de British Columbia (Canadá), y la bibliografía relacionada con la teoría pedagógica y de alfabetización crítica. Se analiza la brecha percibida en los conocimientos de los bibliotecarios relacionados con las teorías que sustentan su pedagogía, el valor del aprendizaje sobre las teorías de la enseñanza de la alfabetización informacional y su aplicación, y estrategias capaces de mejorar el conocimiento y la aplicación de la teoría a las prácticas de los bibliotecarios en el ámbito de la educación superior.

Playful learning for information literacy development

Aprendizaje lúdico para el desarrollo de la alfabetización informacional

Andrew Walsh

IFLA Journal, 46–2, 143–150

Resumen: Partiendo de la adopción de la alfabetización informacional como un concepto profundamente contextual y de construcción social, este artículo analiza las teorías del aprendizaje que subyacen al enfoque del aprendizaje lúdico. Lo sitúa dentro de un enfoque de construcción social, que parece alineado con el carácter de construcción social de la alfabetización informacional. Se consideran algunas de las barreras para el uso del enfoque del aprendizaje lúdico, que se reflejan en la ausencia de reconocimiento del juego dentro de la bibliografía relativa a los enfoques lúdicos del desarrollo de la alfabetización informacional. Se sugiere la utilidad de un estudio detenido del juego y del aprendizaje lúdico en la bibliografía de la alfabetización informacional para dar forma al desarrollo de dichos enfoques de una forma más eficiente.

Curating knowledge, creating change: University Knowledge Center, Kosovo national transition

Custodia de los conocimientos, generación del cambio: University Knowledge Center, la transición nacional de Kosovo

Mary M Somerville, Anita Mirijamdotter, Edmond Hajrizi, Elham Sayyad-Abdi, Michele Gibney, Christine Bruce, Ian Stoodley

IFLA Journal, 46–2, 151–162

Resumen: Una iniciativa de diseño de un sistema colaborativo en la University for Business and Technology de Kosovo pretende dar visibilidad a los conocimientos locales y mejorar la creación de estos en el seno de la Universidad y en todo el país. Desde su concepción, allá por 2015, las actividades de diseño tenían por objeto activar sistemas mediante el modelado del panorama mundial de conocimientos, los sistemas tecnológicos y los procesos de la actividad humana. En el marco de los sistemas fundamentados, la aplicación de la teoría del aprendizaje fundamentado y el diseño de la experiencia de la información (IXD, por sus siglas en inglés) guiaron los sistemas de construcción de prototipos que inspiraron la creación de un repositorio institucional denominado UBT Knowledge Center. La visión del conocimiento prevé que los procesos sostenidos de custodia, organización, descubrimiento, acceso y uso facilitarán el compromiso académico, el desarrollo nacional y la visibilidad global, con el tiempo y la práctica, para convertir la teoría en práctica y la práctica en teoría.

Adult learning theories and autoethnography: Informing the practice of information literacy

Teorías del aprendizaje de adultos y autoetnografía: configuración de la práctica de la alfabetización informacional

Karen Bordonaro

IFLA Journal, 46–2, 163–171

Resumen: Las teorías del aprendizaje autodidacta y permanente pueden configurar la práctica de la alfabetización informacional en la educación superior para estudiantes adultos. Estas teorías se prestan al uso de la autoetnografía, una metodología de investigación que se basa en la exploración de las experiencias vividas mediante la reflexión fundamentada en la teoría. A la hora de realizar una etnografía sobre la alfabetización informacional, su práctica se revela como una actividad tanto individual como colectiva. Este análisis conlleva múltiples ramificaciones para la práctica. Dichas ramificaciones incluyen consideraciones sobre

opciones, barreras, entornos propicios para el aprendizaje, oportunidades de aprendizaje informal y la necesidad de reflexión para los estudiantes adultos. La aplicación de las teorías del aprendizaje autodidacta y permanente a la práctica de la alfabetización informacional ofrece a los bibliotecarios perspectivas nuevas y útiles en su práctica con estudiantes adultos.

Studying visual literacy: Research methods and the use of visual evidence

Análisis de la alfabetización visual: métodos de investigación y uso de evidencias visuales

Krystyna K Matusiak

IFLA Journal, 46–2, 172–181

Resumen: La proliferación de imágenes y el aumento de su uso en las prácticas de información académica y

cotidiana han despertado el interés por la alfabetización visual como área de investigación y formación de usuarios. Los enfoques de enseñanza y el aprendizaje de los alumnos se analizan empleando una serie de métodos de investigación e imágenes en el proceso de investigación. Este estudio ofrece una revisión de la metodología de investigación adoptada en estudios empíricos de alfabetización visual publicados en revistas académicas entre 2011 y 2017. Los resultados indican que un tercio (33%) de los estudios analizados adoptaron un enfoque cuantitativo, siendo las encuestas la estrategia más popular. Los estudios de métodos cualitativos y mixtos eran minoría, pero representaban una mayor variedad de estrategias y técnicas de recopilación de datos. Un tercio (33%) de los estudios de la muestra no citaban ninguna metodología de investigación. En la mayor parte de los estudios (87%) se emplearon evidencias visuales para el proceso de investigación.