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Information literacy instruction in public libraries

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Abstract

Extending from existing research on how public libraries offer information literacy (IL) instruction through classes or programs, the purpose of this research was to explore how public librarians provide IL instruction through individual interactions with patrons. US public librarians recorded their impressions of instructional interactions over a five-day period using an online diary instrument. Key findings were that public librarians incorporate a range of IL concepts in their interactions with patrons, across a wide variety of expressed information needs, with most of the instruction directed toward helping patrons plan their information tasks, access information, and judge information. Secondary themes showed that although librarians believed strongly in the value and importance of providing instruction, individual and situational factors presented barriers to effective instruction. This research contributes to an understanding of how IL instruction in public library settings differs from school and academic library settings and raises some questions around the need for instructional resources focused more specifically around the needs of the public library to facilitate effective instruction.

Keywords

information literacy; instruction; lifelong learning; micro-learning; public libraries, US

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1. Introduction

Information literacy (IL), the ability to recognise the need for information, to effectively find information to meet that need, and to use information for some purpose or goal, is a foundational concept in librarianship. And while significant attention is directed toward IL in practice in academic and school library settings and in those bodies of literature, there is a notable gap in how IL is approached in practice and in scholarship in public libraries (Hackett, 2018; Walter, 2007).

This differentiation in how IL is enacted is worth exploring in more detail. Why is it that school and academic libraries more fully embrace IL instruction compared with public libraries? No one would likely argue that students need to be more information literate than the general public, indeed, a foundational argument for IL rests on the notion of the need for all citizens to be savvy consumers and users of information to support a democratic society (O'Connor, 2009). Others rightly argue that the public library is well-suited to engage in IL activity because of the inclusivity of its underlying mission to provide information access to everyone in their community, of any age, with any interest (Henkel, 2015). Demasson, Partridge, and Bruce (2019, p.4) make a strong case for IL in public libraries: 'Those potentialities – to reach the widest possible (unrestricted) audience, to unite a person's educational and social worlds, to begin instruction at the earliest possible age or even at the latest stage of a person's life and to establish a life-long relationship with the individual - illustrate perfectly why the public library is, arguably, the most important player in the delivery of IL and lifelong learning.'

We approach this question by first making explicit our operational conceptual framework that lays out some essential factors that we believe contribute to the difference in approaches to IL between public and academic libraries. This framework emerges from our observation of and expertise in IL in the higher education sector, and we acknowledge there may be additional factors more relevant to a public library environment with which we are less familiar. We include this framework here to surface the thoughts that underpin our research.

1.1 Educational purpose

While both types of libraries clearly contribute to helping their patrons learn, academic libraries serve a community of faculty and students whose primary purpose is teaching and learning. The internal structure of institutions of higher education naturally promote a learning environment into which academic libraries fit in logically as the unit that provides instruction on IL skills. Public libraries, however, serve a broader community beyond that found in a formal learning environment. Some public library patrons may be using their library to support their academic work, but the library exists to serve learning needs beyond those related to formal education (Nielsen & Borlund, 2011). Without the setting-supplied emphasis on teaching and learning, public libraries play a different role in their communities. Instead of being viewed as librarian-teachers, public librarians likely teach in less formal ways.

1.2 Time

The notion of time is also differently conceived between academic and public libraries. From a seasonal sense of time, academic libraries are fully tied to the academic calendar and structure of semesters – a portion of time during which an academic institution holds classes. Within that notion of time, librarians typically provide IL instruction to classes of students in accordance with the work and pace of an academic class. In higher education, such instruction could be delivered as a one-shot instruction session or a credit-bearing full semester course, and while the one-shot format is still common, research shows that greater learning gains are to be had through more substantial learning experiences (Mery et al., 2012). Indeed academic librarians and teaching faculty alike recognise that students need repetition and practice that can only come over time to gain mastery of IL concepts and skills (Baird & Soares, 2020; Egan et al., 2017). Though public libraries also experience different ‘seasons’, somewhat akin to semesters, such as summer reading program periods, those periods do not bring the implicit instructional expectations–of any length–associated with academic calendars.

Time also matters when viewed as the length of interaction between a librarian and patron. The service ethos of academic reference and instruction librarians embraces long consultations with students and faculty and invites repeat consultations over the course of a project. In contrast, public librarians are mindful of not spending too much time with a single patron in order to be available to other patrons who might be waiting. Shorter lengths of contact make IL instruction harder to provide.

1.3 Patron motivation

At first glance, patron motivation may appear to be similar in both library settings. Some patrons are motivated to develop the IL skills that would support the exploration of topics of interest to them, while others are not and would prefer to just get the information that brought them to the library. A primary difference in patron motivation may be explained by the type of motivation–intrinsic versus extrinsic– they experience (Ryan & Deci, 2000). A patron with intrinsic

motivation would embrace learning IL concepts and skills due to an inherent interest in learning them. A patron with extrinsic motivation may embrace IL instruction for an instrumental purpose; doing so helps them achieve something positive or avoid something negative. In the case of the student in higher education, it is plausible that they might be either intrinsically motivated to master IL because they possess an authentic love of learning, or extrinsically motivated because of the promise of a good grade or threat of a bad grade, or perhaps some of both. In fact, research with undergraduate business students showed that both intrinsic and extrinsic motivation were significant predictors of IL self-efficacy (Ross et al., 2016). In contrast, public library patrons' motivation would seem generally less likely to have such external stakes attached. Following the notion of lifelong learning, it is compelling to think that public library patrons who are motivated at all to engage with IL, do so out of an intrinsic interest. Although we are not aware of any studies that specifically look at the question of public library users' motivation to develop IL skills, a study that looked at patrons' motivation to use the public library found that intrinsic motivation, captured as 'the user that is simply curious and loves to learn new things, but does not have a content or subject agenda driving their visit. They know they'll find something interesting at the library and likes learning the types of things they learn there' was the second largest category reported and a significant driver of public library use in general (Institute for Learning Innovation and Delaware Division of Libraries, 2009, p.315).

As this conceptual framework suggests, there are differences in how IL might be understood and enacted in different types of libraries. It is also true that patrons of public libraries have need for and benefit from increasing their IL skills (Julien & Hoffman, 2008). Public libraries are confronted with the need and opportunity to help their patrons develop IL skills (Hackett, 2018). However, multiple factors related to their service practice may inhibit or at least alter the way public librarians may provide IL instruction, as compared with their academic counterparts (Harding, 2008). Without the built-in structures of courses, assignments, semesters, and classes, how do public librarians provide IL instruction?

2. Literature review

2.1 Beliefs about the value of IL

A foundational notion to this line of research is that in fact IL is a worthwhile thing to pursue. Several recurring arguments have been made to explain the importance and value of IL in a societal context. The first is the notion of lifelong learning, the idea of humans engaged in learning from cradle to grave, independent of formal educational environments. Living in an information society where vast quantities of information are constantly created and disseminated invites and perhaps necessitates continued learning across one's lifespan. Public libraries recognise their unique role in supporting the informal lifelong learning of all their constituents and most name lifelong learning as a key element of their mission statement. For example, the New York Public Library Mission Statement declares, 'We inspire lifelong learning by creating more able learners and researchers' (*NYPL's Mission Statement*, n.d.).

Library associations also embrace the role public libraries play in lifelong learning. The American Library Association (ALA) argues that 'For people of all ages, lifelong learning is the key to longer, healthier, more satisfying and productive lives' (American Library Association, 2007). A report prepared by the public libraries section of the International Federation of Library Associations and Institutions (IFLA) states 'In a society of lifelong learning public libraries will be nodes connecting the local learning setting – whether it is of a formal or informal kind – with the global resources of information and knowledge, public libraries can therefore play a role of fundamental importance in the development of future systems of lifelong learning' (Haggstrom,

2004, p.3). Thus libraries hold a primary belief that lifelong learning is a key characteristic of modern life and embrace their role in providing education and training in IL skills that help patrons pursue their interests (Hackett, 2018; Widdowson & Smart, 2013).

A second argument linked with the importance of IL is the notion of developing an engaged citizenry. This belief stresses the importance of being knowledgeable and engaged in public discourse space, suggesting that well-informed citizens will contribute to thoughtful dialog that benefits the public good and is resistant to tyrannical thought (O'Connor, 2009). Critcher Lyons (2016) argues that public (and school) libraries must address a perceived gap in civics education by 1) facilitating access to diverse viewpoints on societal issues, 2) developing critical thinking opportunities around those issues, and 3) engaging community participation in problem solving to support democratic ideals. Greater IL can help citizens access, evaluate, and integrate information more meaningfully which can enhance their participation in economic, social, cultural, and political activities in their communities (Buschman, 2019; Huysmans, 2016). The rise of media attention placed on overt dis- and mis-information, characterised by the 'fake news' concept, has presented public librarians a chance to (re)introduce their skills in helping patrons learn to detect poor quality information that impedes their ability to be well-informed (Finley et al., 2017; Ireland, 2017). IL instruction–perhaps in partnership with journalists–is seen to be the best antidote to falling prey to mis-information (Banks, 2017; Froehlich, 2017).

A somewhat more recent argument that also speaks to the value of IL is the relationship between IL and social exclusion, social inclusion, and social cohesion. Social exclusion considers those who are excluded from societal systems; social inclusion considers the effects of social exclusion on segments of society; and social cohesion looks at the connectedness of a community, and particularly at social capital (Muddiman et al., 2000). Social capital is the set of social networks among people that follow norms of reciprocity to achieve social functioning. It is frequently associated with civic virtue or the idea of people trusting and cooperating in ways that create social bonds, leading to mutually beneficial outcomes for those in the network (Ferguson, 2012). More recent literature has begun to explore how public libraries promote social inclusion and social capital through services such as IL instruction which can help individuals develop knowledge and skills that enable them to be more productively engaged and active in society (Oğuz & Kurbanoğlu, 2013).

Libraries embrace their role in facilitating these three values – lifelong learning, engaged citizenry, and social capital – and IL instruction is the mechanism through which libraries promote these values to their constituents. Indeed, it seems to go undisputed that IL is an essential service component of public librarianship. Some recent examples of IL instruction and initiatives in public libraries around the globe reveal the emphasis public librarians place on instruction.

2.2 Examples of IL instruction in public libraries

IL services were found to be a marker of how libraries contribute to 'informational world cities', understood as urban areas with significant digital, knowledge, creative, and 'green' infrastructure (Born et al., 2018). Researchers found that 80% of the libraries in 31 'informational world cities' included in their study offered courses in IL. Other ways libraries in their study provided IL instruction included subject guides, educational materials, and online courses. Many participants reported providing IL instruction that focused on helping patrons develop technical skills, and many saw the technical skills as almost a necessary precursor to exploring library tools and content.

The information needs of refugees and immigrants were the focus of a study in Didim, Turkey which sought to uncover gaps in public library information services provided to newcomers to that country (Oğuz & Kurbanoğlu, 2013). Results showed that newcomers experience significant information needs in a variety of sectors, but while patron respondents indicated that training on how to find information was extremely important to them, they were unsatisfied with the fulfilment of library instruction services. The researchers make the case that IL instruction can be especially useful to newcomers to a community as IL skills are meta skills which can be applied to a range of topics such as civic, health, education, leisure, and practical information that are vital for folks adjusting to the new community.

Other ways public librarians incorporate IL concepts in their work are by providing technical and computer instruction to patrons, both one-on-one with a patron as well as through classes and programs (Larue, 2017). Public libraries also offer IL instruction through classes on topics of interest to patrons such as detecting fake news, financial literacy, or even managing a fantasy football team (Ireland, 2017; Jacobsen, 2017). In a preliminary project to the research we are reporting here, we examined eight public library websites to determine what kind of IL instruction might be occurring through their programming and through content on their website (Matteson & Gersch, 2019). We found that all but one of the library websites offered passive IL instruction through subject guides available on a variety of topics. Looking at their program offerings, we found that 62 of the 132 programs analysed during the period of time under study offered some level of IL instruction. The majority of the instruction provided in those programs could be classified as helping patrons learn to use information effectively to communicate through training on using computer programs and applications such as word processing, digital photography, Adobe creative suite, as well as classes on makerspace technologies.

The literature demonstrates that IL instruction is present in public library products and services especially around technology but in other areas, too. Research shows that libraries offer classes and programs to address elements of IL, and we know that there is definitely a need for IL instruction, particularly with segments of the community who have needs that are not routinely met through other service agencies and/or who have less access to resources. In the current study we wanted to expand on the lines of inquiry described here and explore further how librarians incorporate IL instruction in their work with patrons. In order to more fully understand IL instruction in public library settings, we posed the research question: *How do librarians provide IL instruction through patron interactions?*

3. Methods

To pursue this question, we took an interpretivist phenomenological approach to the research design. This research philosophy embraces the idea that truth is subjective and socially constructed (Schwandt, 2003). Research in this vein focuses on '…everyday social experiences, on the way social reality is produced through interaction, on the daily meanings people attach to actions, and on the individual in society rather than on external structures' (O'Reilly, 2020, p.120). The role of the researcher is to explore in order to understand the unique and specific elements of the phenomena, rather than to predict particular relationships (Bhattacharya, 2008). Therefore, the data should be collected following naturalistic practices in order to capture in as authentic a way as possible the thoughts and actions of the research participants. Typically, researchers might use interviews or observations to collect data in this way, however we found each of those methods slightly problematic for our research question. Interviewing librarians outside of the context of their instruction practice and after the patron interactions occurred may hinder their ability to recall deep, detailed accounts of their work.

Observing them in context in real time brings with it the risk of the librarian modifying their natural behaviours knowing they were being observed and also raises privacy issues for the patrons. Experience Sampling Methodology (ESM) allows for capturing data about peoples' daily lives and experiences with minimal intrusion. The basic technique with ESM is that participants are given an electronic device which signals them at either random or scheduled times over the period of observation, depending on the specific design of the research (Hektner & Csikszentmihalyi, 2002). At the point in which they are signalled, the participant responds to the desired questions from the researcher. Those responses are typically captured through an electronic device such as a phone, tablet, or computer, but could also be captured on paper. ESM can vary by the number of and frequency of signals, the length and level of detail of the questions, and the duration of the data collection period. Instead of alerting our participants with an audio signal, we implemented ESM asking participants to respond to our questions at the end of each work shift, for a period of 5 shifts. The questions were designed in the form of an electronic diary using the web-based survey software platform Qualtrics.

ESM has been used extensively in a range of research areas such as personality, mood, and emotion studies (Ilies & Judge, 2004; Ketonen et al., 2018) and health and wellness measurement and treatment research (Kramer et al., 2014; Maes et al., 2015). There are few examples of published studies using ESM in in library and information science. Matteson, Chittock, and Mease (2015) used ESM with a web-based diary instrument to capture librarians' experiences performing emotional labour during their workday. Undergraduate students in an introductory literature course were the focus of a study using ESM to explore whether they could attain flow (Csikszentmihalyi, 1991) while doing research for a class assignment (Hudock, 2015). Participants received a text alert with a link to a survey with questions about flow through their smart phones once a day for every day of the semester. Finally, in a study of a day in the life of a university student, researchers used ESM to send 12 signals separated by 75 minutes via text message to participants (Asher et al., 2017). Each message asked students to report where they were, what they were doing, and how they felt. The researchers then geo-located each response to create a map and conducted follow-up interviews with each participant to debrief about their experiences with tasks in particular spaces.

We employed ESM to capture librarians' daily thoughts and behaviours with minimal interruption to their typical experiences. We invited public service librarians from eight public libraries in Ohio to keep an electronic diary to record their IL instruction interactions with adult patrons. Librarians from the eight libraries included in phase one of our research were recruited with 21 out of 23 choosing to participate. The research design was reviewed and approved by the lead author's Institutional Review Board and participant data were kept anonymous throughout the project. The librarians held job titles such as Adult Services Librarian, Reference Librarian, Branch Services Librarian, Information Services Specialist, and Information Services Manager. Three participants' titles were Children's Librarian, but they also provide services to adults in their work and their responses reflect interactions with adults. The length of time spent in their positions ranged from six months to 21 years, with a median of four years and a mean of six years. Nearly all (20 out of 21) had completed an MLIS degree; the one remaining was working towards the degree. 14 participants had received some type of training or education on IL instruction while seven had not received any training. For those who had some IL instruction training, most indicated that training came from coursework in library school, and then secondarily, training provided by their employers.

We collected data in two parts. To establish a general understanding the participants' thoughts about IL we asked them to complete a one-time survey instrument with open-ended questions

about IL and how IL instruction relates to their work. We gave careful consideration to how to engage with the participants around the definition of IL because of the long history of the use of term and the variation of meanings. For example, Addison and Meyers' (2013, para. 5) exploration of the different meanings of IL depicts three conceptualisations: '1) IL as the acquisition of 'information age' skills, 2) IL as the cultivation of habits of mind and 3) IL as engagement in information-rich social practices'. We sought to strike a balance between imposing a definition of IL on the participants which may not align with their own understanding and not defining it all, and thus providing no conceptual clarity whatsoever. We wanted participants to capture instances where they felt they were providing instruction and to not be limited by a particular definition. Rather than ask participants to state their own definition of IL which we thought would be a difficult task, we provided three definitions of IL: the CILIP 2004[1] definition, a definition from the 2005 IFLA Alexandria Proclamation on IL, and a 2015 definition prefacing the ACRL Framework for IL at the beginning of the one-time survey instrument and asked participants to react to them and how they relate to their work. (See Appendix A for the one-time survey with definitions.)

For the second part of data collection we elected to use diary methodology to collect first-hand accounts about participants' interactions around IL instruction with patrons. After submitting the initial survey, participants were given access to an online diary tool and were asked to complete the diary at the end of each workday for a period of 5 days. We asked a combination of open and fixed response questions in the diary to learn about specific interactions that occurred, what aspects of IL were addressed in the interaction, and a self-reflection of the success of the interaction. (See Appendix B for the diary instrument.) Participants could report whether they had provided any IL instruction that day or not and the instrument had space to capture up to three discrete interactions.

We performed thematic analysis on the majority of the data from the initial survey and from the diaries. The data were exported to spreadsheet software to enable sorting, colour-coding, and filtering. At the beginning of the analysis work, both researchers read through the complete data independently. The dataset was then divided between the two researchers with one focusing on the data from the initial survey and the other on the diary entries. The texts were re-read for understanding and then codes were assigned to patterns observed within the data. The coding schemas were then shared between the two researchers and discussed until agreement was reached. After the data were coded, we then looked for themes within and across the codes and examined and interpreted those themes to generate meaning from the data (Boyatzis, 1998)

Whereas with most of the analysis the codes were developed inductively from the raw data, a portion of the data collected in the diaries were coded using an existing general framework of IL called the Fundamental Process Model (Smith & Matteson, 2018). This framework is an integrative, high level representation of the key concepts of IL. The Fundamental Process Model presents IL as a set of four primary processes: plan, access, judge, and communicate. The Model aligns with other models of IL that have been developed for specific contexts such as the Association for College and Research Library's (ACRL) Framework for IL for Higher Education or the Big6 model for school-aged children and teens (Association for College and Research Libraries, 2015; Eisenberg & Berkowitz, n.d.). Table 1 maps the Fundamental Process Model to the Big6 model and the ACRL Framework.

[1] During the period of time we collected the data, CILIP revised their definition of IL.

Table 1: The Fundamental Process Model aligned with the Big6 and ACRL Framework models of IL

Process	Big 6	ACRL Frames with Relevant Knowledge Practices
Plan	Task Definition • Define • Identify	*Research as Inquiry* • Formulate questions for research based on information gaps or on reexamination of existing, possibly conflicting information • Determine an appropriate scope of investigation *Searching as Strategic Exploration* • Determine the initial scope of the task required to meet their information needs • Match information needs and search strategies to appropriate search tools
Access	Locate and Access • Find information within sources	*Searching as Strategic Exploration* • Use different types of searching language (e.g., controlled vocabulary, keywords, natural language) appropriately; • Manage searching processes and results effectively • Design and refine needs and search strategies as necessary, based on search results
Judge	Use • Engage • Extract information from source	*Authority is Constructed and Contextual* • Define different types of authority, such as subject expertise (e.g., scholarship), societal position (e.g., public office or title), or special experience (e.g., participating in a historic event); • Use research tools and indicators of authority to determine the credibility of sources, understanding the elements that might temper this credibility
Communicate	Synthesize • Organize • Present Evaluate • Product • Process	*Information Creation as a Process* • Transfer knowledge of capabilities and constraints to new types of information products • Develop, in their own creation processes, an understanding that their choices impact the purposes for which the information product will be used and the message it conveys

Because the focus of our study was on how public librarians perform IL instruction, we chose to map the Fundamental Process Model to a set of instructional goals that were general enough to be applicable to a variety of patron interactions but still represented a high-level model of IL instruction. Participants were asked to select which of the goals they felt were most relevant to their interactions (see Table 2).

Table 2: Fundamental Process Model mapped to Instructional Goals

Process	Instructional Goals
Plan	Understand their information need
	Understand why they needed information
Access	Search for information
Judge	Interpret or evaluate information
Communicate	Use information
	Communicate or share information
	Create new information (such as in a makerspace)
	Understand the ethics and laws related to information use

4. Findings

4.1 General results

The final data set included survey responses from each of the 21 librarians in the study. The diary data included 88 entries and 98 total interactions. One of the interactions included very little detail so the analysis spans 97 interactions. Most of the interactions with patrons lasted between two and fifteen minutes. Table 3 shows the range of time spent with patrons.

Table 3: Distribution of time spent on each interaction

Time spent	no. of interactions	% of the total no. of interactions
1 minute	1	1.0%
2-5 minutes	20	20.6%
6-10 minutes	33	34.0%
11-15 minutes	23	23.7%
More than 15 minutes	14	14.4%
Other (please indicate)	6	6.2%
Total	97	

The majority of the interactions (78, or 80.4%) occurred in person while 16 interactions (16.5%) were over the phone. None of the reported interactions occurred via chat or email.

Participants indicated which areas of IL were covered and the instructional goals that were addressed for each interaction. Table 4 shows the array of IL areas and instructional goals.

Table 4: Distribution of IL Interactions by Instructional Goal

Area of IL	Instructional Goal	#	%
Plan	Understand their information need	60	20.3%
	Understand why they needed information	35	11.8%
Access	Search for information	55	18.6%
Judge	Interpret or evaluate information	49	16.6%
	Use information	58	19.6%
Communicate	Communicate or share information	30	10.1%
	Create new information (such as in a makerspace)	0	0.0%
	Understand the ethics and laws related to information use	1	0.3%
	Another aspect of information literacy (please describe)	8	2.7%
	Total	296	

As shown above, each of the four areas of IL were represented in the data with goals related to *judging* reported the most frequently at 36.2%, then *planning* (32.1%), *accessing* (18.6%) and *communicating* (10.4%).

In the rest of this section, the findings are divided into two parts: we first report on themes that emerged from the initial survey and then share the results of the diaries.

4.2 Survey: beliefs about IL

Participants shared several key beliefs about IL. Most noticeably, IL instruction was seen as a core aspect of librarianship. Participants expressed the idea that teaching patrons about information access, evaluation, and use was central to the work of librarians. As an example of this belief, a participant wrote, 'My reaction is that information literacy is the basis of library interaction with the public'.

A second theme illustrated the importance of patron learning. Participants commented on the value of IL as a mechanism to facilitate patrons' ability to learn and to ultimately be independent learners. One participant put it this way, 'I frequently describe my job as helping customers learn how to help themselves -- while I am always happy to assist a customer I also incorporate aspects of information literacy into my discussions so that in the future the customer will be able to find and utilise information -- be it in the library or elsewhere -- without my assistance.'

Librarians also shared the idea that IL is a very important concept in a larger, societal context. Some participants saw it as the most important service they provide to their community. For example, one person wrote: 'Information literacy is as important as ever in our current social and political climate.'

Finally, there was agreement that IL instruction occurred frequently in the workday. Participants felt they provided instruction on a daily basis. Quotes from two different participants reveal the perception of frequency.

> On a daily basis in my work I am explaining, demonstrating, trouble shooting for customers not only how to find information on the computer, but also suggesting book sources to use for possible answers to their questions.

> We do this in small daily ways working with customers, by assessing their information needs and communicating this in the most efficient ways possible.

4.3 Survey: providing IL Instruction

In spite of the generally shared agreement that IL instruction was important, performed frequently, and core to librarianship, there was little evidence showing that libraries had specific procedures or practices for providing instruction.

None of the participants indicated their library had a specific written or unwritten guide or set of instructions for providing IL instruction. Instead, in some cases, stand-in documents were presented as evidence of the organization's desire to provide IL instruction. Several participants referred to the existence of the importance of lifelong learning in their library's mission or vision statement as indication of a policy or practice to provide IL instruction. Others pointed out that IL instruction was largely practiced individually – that is – most librarians were doing it but on an ad-hoc basis. 'Information literacy instruction is fluid in our branch. It is not done on a structured basis but on a one to one basis.'

Some participants commented on the implicitness of IL instruction – that essentially it was just a standard part of service work. 'It's part and parcel of the job. Instruction is part of the duties.'

Only two participants mentioned it was written into a job description, and only three knew of any in-house training for librarians that related to IL instruction.

4.4 Diaries

Each of the researchers read the diary entries multiple times to understand the nature of the interaction described. We prepared a high-level summary of the topic of each of the interactions to share the range of the information needs across the participants. Table 5 arrays the topics of the interactions by the number of occurrences.

Table 5: List of Topics

Topics	Count
Computer/Internet use	21
E-book/Audiobook assistance	13
Online service assistance	7
Phone/tablet use	5
Subscription databases	5
OPAC use	4
Printer/copier	3
Book suggestion	2
How to book a meeting room	2
How to find an obituary	2
How to look up information about a business	2
How to request a book	2
City ordinances	1
Copy a DVD	1
Find information on whey recall	1
Genealogy research	1
How to complete a job application	1
How to create a power of attorney	1
How to download library apps	1
How to find a library technology class	1
How to find auto repair info (via AllData)	1
How to find books on addiction	1
How to find books on reducing cholesterol	1
How to find E-audiobooks on medical board certification	1
How to find fiction in a specific genre	1
How to find GED classes	1
How to find information about refrigerator purchases	1
How to find materials on getting a license required for employment	1
How to find poetry	1
How to find section 8 housing	1
How to find the value of an old car	1
How to find weekly TV listings	1
How to find, complete, and email immigration forms	1
How to freeze/unfreeze holds	1
How to get a driver's license	1
How to print from microfilm	1
How to search for jobs	1
How to use homebound services	1
How to use the library's career services department	1
How to use the scanner	1
Information on protein	1
Total	**97**

We did thematic analysis on the content of the narratives, which resulted in three major categories describing the general nature of the IL instruction interaction: Technology/Demo, Reference, and Instruction. Each category included a type of instruction and could be linked to a general purpose of the instruction. Technology/Demo included instruction that provided demonstrations of computer applications and programs and general instruction on how to use technology and was highly functional in nature. The Reference category was used for interactions that featured information referrals or retrieving information for the patron and was largely an informational interaction. The Instruction category was applied to situations where the librarian had a discussion with the patron, where together the librarian and patron explored something, or where the librarian taught something and was distinctly instructional in nature as compared with the functional and informational qualities of the other two categories. Table 5 shows the categories, descriptions, and occurrences across the diary entries.

Table 6: Type of IL Instruction

Category	Description	Instances	
		Number	Percent
Technology/Demo	applications and programs; clicking buttons; **functional**	53	54.1
Reference	information referrals; retrieval; **informational**	32	32.7
Instruction	discussion; exploration; teaching; **instructional**	13	13.3

As shown in Table 6, the majority of the interactions were functional in nature, dealing with helping patrons use computer applications and programs. The lowest number of instances were observed for what might be seen as classic IL instruction where the emphasis was on teaching and learning through discussion and co-exploration.

We examined each category in more depth by analysing the distribution of IL instructional goals within each category. Most of the eight possible instructional goals were observed in the three categories with the exception of the two goals relating to the idea of helping patrons create new information and using information ethically. Table 7 shows the distribution of instructional goals across the three categories of IL instruction.

Table 7: Instructional Goal by Category

Process	Instructional Goal	Technology	Reference	Instruction	Total
Plan	Understand their information need	31	22	8	61
	Understand why they needed information	18	13	3	34
Access	Search for information	20	26	11	57
Judge	Interpret or evaluate information	21	18	8	47
	Use information	39	11	3	53
Communicate	Communicate or share information	15	12	3	30
	Create new information (such as in a makerspace)	1	0	0	1
	Understand the ethics and laws related to information use	1	0	0	1

These data show that instruction tended to focus on concepts related to planning, accessing, and judging information, across the range of information topics and types of instruction. Instruction around using information was largest goal reported, and most strongly observed in patron interactions in the technology/demo category which stands to reason giving the highly functional nature of those interactions.

Finally, we asked participants to reflect on their interactions and consider if there was anything they might have done differently. From the 98 entries, there were 28 comments (28.5%) where the participant provided reflection on something they might have done differently. Those responses were coded and analysed resulting in three general themes about how the instructional interaction might have been changed. The biggest theme that emerged were reflections relating to the individual librarian–things they might have changed about their own actions during the transaction. These comments highlighted concerns such as communicating more effectively with the patron, providing more guidance, conducting a more thorough reference interview, or sharing additional resources and features with the patron.

A second theme related to structural changes that could be made from within the institution to improve the instruction interaction. Responses in this category included the need for more staff, more time, and greater privacy. For example, a comment on being busy pointed to a desire for more help.

> I was on-desk while working with the patron, and the only staff member in the entire department for the duration of our interaction. This meant that while we worked, I had to pause several times throughout to assist other patrons for brief encounters. All patrons were patient and understanding, and the overall instruction was successful in my opinion, but could have been more focused without the distractions of other patrons, allowing for more efficient and personal training.

Time was also a consideration noted by several participants.

> I might have taken some more time to explain other resources we have available (in-person classes, digital resources, etc.).

Here the participant suggests they could have spent more time with the patron but didn't for some reason, suggesting there may be an implicit sense of how much time a single transaction should last.

Finally, a small number of responses suggested things they might have done differently based on patron characteristics. For example, a participant again mentions time, but in this case acknowledges the patron was not available to spend more time. 'If she had not had a child who was anxious to get going I would have possibly retrieved a book talk list to refer to from a presentation that I've given.'

5. Discussion

This study set out to better understand how public librarians provide IL instruction via patron interactions. A number of points can be made from the results of the research.

First, these data show that there are indeed opportunities to address IL goals across a range of patron interactions in public library settings. The array of interactions participants reported reveals that they believed they provided instruction on range of IL knowledge areas and skills. As compared with the vast literature on IL applied to education settings, the instances of IL instruction reported in this study were more technically or functionally focused; still the librarians reported successfully addressing instructional goals related to planning, accessing, judging, and communicating. This suggests that the librarians in this study operate with a perhaps broader definition of what constitutes IL instruction than might be traditionally held in academic settings. Even if the interactions with the patrons were brief and narrowly focused, the public librarians still saw their work as instructional in service to a notion of IL perhaps best characterised as maximum utility to the user in the moment; a just-in-time-and-place IL to address an information need at the time and without a need or mandate to connect IL to a larger educational context. This contrasts with an academic environment where IL is often linked with more specific and longer ranging objectives such as aligning with general education requirements (Rockman, 2002). The perspective of IL that emerges from our study is best described as everyday life IL (ELIL) – a concept introduced by Martzoukou and Sayyad Abdi (2017) which integrates the constructs of Everyday Life Information Seeking as a subset of the domain of Information Seeking Behaviour, and IL. Indeed examples of ELIL can be seen in a variety of contexts. Hoyer (2011) describes how IL skills are embedded in a non-profit run youth internship program where participants created a community garden. Hoyer (2011, p.17) illustrates how information needs exist outside the educational context writing that participants "…needed help finding information resources within the community in order to be successful. This marked an important first competency: interns must recognise that they have an information need. While this may be intuitive to a young person confronted with writing a research paper, a group that wants to start a community garden may not identify that information need lies at the root of the project they are confronting.' The information needs of refugees have also been linked with everyday IL in a number of studies (Lloyd & Wilkinson, 2019; Martzoukou & Burnett, 2018) and health information seeking is another subject of multiple studies through an IL lens, outside the context of education (Buchanan & Nicol, 2019; Furnival & Silva Jerez, 2014). Consistent with these examples, Martzoukou and Sayyad Abdi's review of ELIL found four themes or areas where research has been carried out in ELIL: leisure and community activities; citizenship and fulfilment of social roles; public health; and critical life situations. They offer an important acknowledgement about our current understanding of ELIL:

> …the implications of lacking IL skills within the everyday life environment have not been sufficiently researched in the same ways as the implications of lacking IL for achieving education objectives of work-related functions. It is further unclear how people can be **supported** and **empowered** to develop effective IL practices within the different realms of everyday life, where they often encounter situations to which they may place priority over education and work-related problems. [emphasis added] (Martzoukou & Sayyad Abdi, 2017, pp.654–656)

We believe the findings from our study, which sheds light on IL from the perspective of the librarian in contrast to studies which have focused on the IL needs from the patron viewpoint, are relevant to this point. Perhaps at least some portion of the support and empowerment needed to build people's ELIL in fact comes from the kinds of interactions reported here: the functional/technological as well as the more research-oriented and conceptual. Perhaps public librarians are the skilled professionals to provide such support and empowerment. We would argue that the librarians in our study certainly see their own IL practice as doing just that. Ultimately, ELIL brings interesting implications for a more nuanced definition or model of IL relevant to the public library environment.

Another finding worth noting is the impact of time on the IL instruction experience. Nearly 80% of the transactions in this study lasted between one and 15 minutes, and not having enough time emerged as an issue for librarians reflecting on the interactions. While libraries should strive to create staffing schedules that allow librarians to spend as much time as needed with patrons, that is not always possible, nor can patrons take as much time as might be needed or desired. Finding instructional strategies that account for time pressures may be useful in public library settings. The concept of micro-learning is relevant to this situation. Micro-teaching emerged in the 1960s as a technique for training teachers by having them deliver a short piece of instruction and providing immediate feedback. It developed over time placing emphasis on learning in micro units, and has seen a recent resurgence with e-learning technological advancement (Hug, 2005). With micro-learning, learning content is developed in small segments and delivered through multiple, flexible technologies that facilitate learning through an "anytime, anyplace" approach (Major & Calandrino, 2018). Micro-learning is supported by andragogy learning theory–methods and practices associated with adult education–which explains that adult learning often happens in informal settings, motivated by tasks and problems related to daily activities. Learning in these situations is often satisfied by acquiring specific pieces of information or discrete skills in order to complete a task, solve a problem, or make a decision (Gabrielli et al., 2006). According to Hug (2005, p.4) micro-learning experiences are: short in length; composed of very small topics; are faceted or fragmented; delivered through a variety of mechanisms (face-to-face, multi-media) and could be representative of any of any learning theories or approaches such as activist, pragmatist, constructivist, behaviourist, action learning, classroom learning, corporate learning, conscious or unconscious learning. Micro-learning elements have been incorporated in corporate (Hartley, 2010; Poulin, 2013) and academic learning environments (Damyanov & Tsankov, 2018), with research showing that students' classroom knowledge retention increased when supplemented by micro messages sent to their electronic devices (Kadhem, 2017). Microlearning strategies have been applied to IL instruction in academic libraries. An and Quail (2018) describe their process in creating multiple micro-learning products in the form of short 'how-to' videos and PDF instruction sheets to help business students learn specific information tasks related to their course assignments.

Micro-learning strategies seem extremely well-suited to IL instruction in public library settings.

For example, strategically placed signage, computer screen messages, and video displays, could convey discrete, specific instructional content around frequent information needs. Print or digital handouts may be useful to convey concepts that benefit from pictures or illustrations. Very brief, highly focused videos could be an effective means to demonstrate a series of steps or actions related to searching, judging or communicating information. Beyond the production of micro-learning-based instructional materials, there may also be value in systematically collecting analogies, examples, or stories (formal or informal) to have ready to share when an instructional opportunity arises.

Finally, the data point to some inconsistencies in how public librarians think about and practice IL instruction relative to how their organizations and professional associations view IL instruction. The librarian participants held strong feelings that IL is a central element of librarianship, that IL instruction should prioritise patron self-sufficiency, that it is an extremely important service, and that they engage in instruction with great frequency. Given these beliefs about IL it would be reasonable to expect that there would be clear messaging about IL instruction from the libraries perhaps seen in training manuals or job descriptions, or more informally in terms of task prioritization or rewards or recognition processes. However, this was not the case. There was little to no acknowledgement at the organizational level about IL instruction. We point this out not to be critical but to try to understand the phenomenon. As described at the beginning of this paper, a number of reasons exist for why public libraries might have a different approach to IL instruction as compared with academic and school libraries. This finding raises the question, how might public libraries provide more support for librarians who clearly are engaged in significant IL instruction? Where academic and school libraries have professional frameworks and guidelines around IL, and pay significant attention to curriculum development, pedagogy, and assessment of their instruction, what resources might be developed to help public librarians enhance IL instruction? Hackett (2018, p.7) argues that more research is necessary in this space, particularly, ‘the kind of research and investment that has been evident in HE [higher education]’. Do existing models of IL fit the public library environment, or would a different model or framework be more useful? Would educational opportunities during and/or post-MLIS that highlight instructional design, pedagogy, andragogy, and assessment for the public library setting be valuable? We have personal reasons to believe such resources would be helpful. We are both instructors in an LIS program teaching a master’s level course focused on IL instruction. Over the last several years we have observed a steady uptick in the number of students enrolled in the class who are planning to seek work in a public library and wish to learn IL instruction concepts to be applied in that setting. We’ve struggled to provide appropriate resources to those students, frequently having to modify readings, lectures, and activities to better match their interest in instruction in a public library setting. This space is worthy of further research.

6. Conclusion

IL is as important in public libraries settings as it is in school or academic libraries. Public libraries face unique challenges and opportunities in providing IL instruction. Whether existing frameworks, guidelines, and instructional models around IL are useful to IL in public libraries is an area of investigation that merits more attention. This study finds that US public librarians provide IL instruction in ways that align with the notion of everyday life information seeking, providing additional support for the idea of everyday life IL. More research is needed to understand the complexities of ELIL and future research should explore the critical role public libraries can play in offering meaningful, pertinent, just-in-time-and-place IL instruction. Public libraries are well-positioned to design and offer services to meet these needs as public librarians see such work as essential to their roles. Enhancements may be found through

exploring innovative instructional approaches such as micro-learning to help support IL continuous learning in public library environments.

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Appendices

Appendix A

Preliminary Questionnaire

Name:

Place of employment:

Job title:

Number of years at this position:

Please list the primary 3-4 job responsibilities you have:

MLIS? Y/N or in progress

Have you ever had any education or training on information literacy instruction? If so, please describe.

DEFINITION 1

Information literacy is knowing when and why you need information, where to find it and how to evaluate, use and communicate it in an ethical manner. Information literacy has relevance for democracy and active citizenship and is something which happens or needs to happen outside of formal education and throughout an individual's lifetime as well as within educational institutions.

Source: Chartered Institute of Library and Information Professionals (CILIP), 2004, https://archive.cilip.org.uk/research/topics/information-literacy

DEFINITION 2

Information literacy and lifelong learning are the beacons of the Information Society, illuminating the courses to development, prosperity and freedom. Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations. Lifelong learning enables individuals, communities and nations to attain their goals and to take advantage of emerging opportunities in the evolving global environment for shared benefit. It assists them and their institutions to meet technological, economic and social challenges, to redress disadvantage and to advance the well-being of all.

Source: World Summit on the Information Society, 2005, https://www.ifla.org/publications/beacons-of-the-information-society-the-alexandria-proclamation-on-information-literacy

DEFINITION 3

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.

Source: Association of College and Research Libraries (ACRL), Framework for Information Literacy for Higher Education, 2015, http://www.ala.org/acrl/standards/ilframework

Please describe your reaction to the concept of information literacy and describe how it might relate to the work you do in the library.

[Open textbox]

What written or unwritten policies or practices are in place at your library about how to provide information literacy instruction?

[Open textbox]

Appendix B

Diary Instrument (complete once a day for 5 workdays)

Please use this electronic diary to report examples of when you provided information literacy instruction to a patron. Please consider each instance as a separate instance to report. The diary is designed to allow up to 3 instances per entry. If more than 3 instances occurred during a work day, please choose the 3 most extensive instances to write about.

1. Please describe in detail the information literacy instruction you provided. Include a description of the patron and any observations you might have about them (while still protecting their anonymity), the kind of instruction you provided, actions you took to provide it, the conversation, and any other details.

2. How long did you spend with the patron?

    1 minute
    2-5 minutes
    6-10 minutes
    11-15 minutes
    More than 15 minutes
    Other (please indicate)

3. What was the mode of the interaction?

    In person
    Over the phone
    Via chat or IM
    Over email
    Other (please indicate)

4. Did you provide any kind of instruction helping the patron learn how to (check all that apply)
    a. Understand their information need
    b. Understand why they needed information
    c. Search for information
    d. Interpret or evaluate information
    e. Use information

f. Communicate or share information
g. Create new information (such as in a makerspace)
h. Understand the ethics and laws related to information use
i. Another aspect of information literacy (please describe)

5. Do you feel the interaction was successful? How could you tell? (textbox)

6. Did you provide any group information literacy instruction today? Check all that apply:

    a. Delivered an in-person program in the library
    b. Delivered an online program
    c. Delivered a program outside the library
    d. Other
    e. Did not deliver any group information literacy instruction today

If yes or other, please indicate what elements of information literacy were included in the session.

a. Understand the information need
b. Understand why the patron needed information
c. Search for information
d. Interpret or evaluate information
e. Use information
f. Communicate or share information
g. Create new information (such as in a makerspace)
h. Understand the ethics and laws related to information use
i. Another aspect of information literacy (please describe)

7. Considering this interaction, if you had the chance would you do something differently? If so, what? (textbox)