

CICAS: Toward a critical framework of information literacy in Addiction Science

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Abstract

This paper is an attempt to suggest a critical framework for addiction information literacy. Since the ACRL information literacy standards were updated in 2015, our field is in need of guidelines about how to translate its general principles to meet the special needs of our diverse audiences. The authors wish to identify the unique application of the ACRL standards to the field of addiction science. An applied and transdisciplinary science requires a particular emphasis on evaluating sources and a special regard for the sensitive nature of the information sought. The authors' exploratory information literacy sessions have been presented in various settings with researchers ranging from post-docs to distinguished professors; counselors at the bachelors, masters, and continuing education levels; undergraduate and graduate students; and the general public. This presentation draws upon these sessions and calls for the collective effort of substance abuse librarians to provide both a general overview and specific customized training programs for our distinctive field.

Keywords

Information literacy, Addiction Science, Infrastructure

Introduction

In 2015, the Association of College & Research Libraries (ACRL) updated its definition of the information literacy (IL) competencies it had first developed in 2000.

ACRL defines this framework as a “set of frames, or lenses, through which to view information literacy, each of which includes a concept central to information literacy, knowledge practices, and dispositions” (Association of College and Research Libraries, n.d.). Contrasting the 2015

definition with that from 2000, the association has moved beyond the basic “need—search—find—use” understanding of information, and instead places a greater emphasis on its creation, its value, and the ethical standards surrounding it. It is essential for those in the information profession, particularly in the heart of the information age, to carefully articulate a general set of competencies for themselves and their constituencies. This new framework serves as a petition to develop this understanding and customize it for the various academic and professional settings in which it may be useful.

The Addiction Science field is in a prime historical and logistical position to rapidly adopt a set of IL guidelines, should they be properly developed. In terms of history, the field has had a strong affiliation with the information profession since its modern inception in the late 1930s and early 1940s. The Center of Alcohol Studies, the first interdisciplinary research center devoted to alcohol and its problems, owes its existence in no small part to a project funded by the Carnegie Corporation to the Research Council on Problems of Alcohol, designed to review, abstract, and organize the alcohol literature to date (Jellinek, 1941). Because the field emerged from the academic dark ages of the post-prohibition era, it was essential that the alcohol question not be resolved simply by appealing to moral arguments, but that enough information should be made available to take reasonable, fully informed action on the matter. Thus, its early founders Norman Joliffe, Howard Haggard, E. M. Jellinek, and Mark Keller placed a strong emphasis on a systematic, organized, and sustainable documentation process, one that was wholly original and unique to this nascent field.

Second, addiction science is well-organized along professional lines, which even a cursory look at the landscape makes evident. Readers of this publication are likely familiar with the association of Substance Abuse Librarians and Information Specialists (SALIS), devoted to information professionals in the field. Similarly, and on a larger scale, NAADAC is a professional organization that

allows for the communication of essential information to alcohol and other drug counselors and others who aim to translate knowledge into practice. INCASE, the International Coalition for Addiction Studies Education, deals with educational standards in the field. The International Society of Addiction Journal Editors (ISAJE) meets annually to discuss the trends, challenges, and opportunities of the publishing arm of the field. The Research Society on Alcoholism (RSA) and the Society for the Study of Addiction (SSA) are just two of the many international organizations comprising the field’s top researchers. And one of the most promising organizations is the emergent International Confederation of ATOD Research Associations, or ICARA, which aims to serve as the umbrella organization or meta-society to which the rest of the field can adhere. Such a highly organized set of societies offers an opportunity to quickly and efficiently disseminate protocols and standards, as evidenced by instances like the 1997 Farmington Consensus, which established some shared procedural and ethical “ground rules” for addiction journals (Edwards, Holder, West, & Babor, 1997).

With this opportunity ahead of us, let us now turn to a brief explanation of each of the six ACRL IL frames, and how they are currently applied and might be further developed in the various addiction professions. What follows is merely a thumbnail sketch of each frame, and is by no means comprehensive or exhaustive. The aim of this article is to serve as a beginning point, a discussion starter, with some ideas and a few concrete examples of how we might redefine our roles in a rapidly changing profession within a rapidly growing field.

Frame 1: Authority is constructed and contextual

Because addiction science is a multidisciplinary—oftentimes *transdisciplinary*—field of science, experts spanning the academic spectrum often attempt to work in harmony to address the public health issue of alcohol and drug use

from several perspectives (Fuqua, Stokols, Gress, Phillips, & Harvey, 2004). Inherent in a field made up of several disciplines is the question of who can speak with authority on the broad topic of addiction. The various disciplines that make up the field lead to a multitude of perspectives, equally authoritative, and arguments from one discipline may very well conflict with, if not outright contradict, those from another. When addiction is understood through a psychological or sociological lens, the focus is often on cultural or individual motivations to use substances. Simultaneously, addiction research is taking place in the natural sciences, applying the principles of biology, chemistry, or genetics to the issue. Further, law and policy play an enormous role in shaping the culture and structure that may lead to addictions, so understanding the socioeconomic and legal frameworks are important. Other disciplines can easily be added into this mix—an expert philosopher, anthropologist, historian, or even information scientist all see the problem through their unique lenses. What is ultimately essential to anyone working in the field in any capacity is to know what discipline any individual argument is grounded in, and understand that the idea of authority in this field is a constantly shifting concept, ultimately dependent on who is speaking, on that person's educational and experiential background, and in what context that person is speaking. As an example, nothing precludes a psychologist from making a claim about the role of information in addiction, but that person's authority on the subject is likely to be eclipsed by someone more heavily invested in that particular aspect of the field, and vice versa.

As a way of applying this principle to practice, an understanding of the concept of online presence is important. When someone makes a claim, be it in a scholarly or popular forum, it behooves the reader to attach that claim to the person making it, and by extension to that person's educational background, experience in the field, previous work on the topic at hand, organization represented, etc. And with an understanding

about the various venues to which one's online presence is established, particularly in academia, these bona fides can typically be compiled and evaluated in a fairly comprehensive way. Consider the rapidly emerging venues for researcher profiles, which have had major implications on scholarly communication and how researchers are perceived outside of their fairly stagnant and cautiously curated CVs (Ward, Bejarano, & Dudas, 2015). A working knowledge of this landscape can lead to a better understanding of the more popular scholarly social media tools and their unique uses, such as ResearchGate, ORCID, Academia.edu, Mendeley, and MyNCBI, to name but a few.

This of course raises the question of why you should be listening to the authors of this piece. By what or whose authority can we support our claim that online profiles are an important and useful way to verify one's authority, and thus worth paying attention to? A cursory look at our online presence might lead one to our profiles from LinkedIn, ResearchGate, or PubMed. Advanced degrees in linguistics and in labor and employment relations appear, which may give pause, as these are seemingly irrelevant to this topic! But a little further investigating will show library and information science degrees, which perhaps lends some credibility. What should also emerge is a consistent pattern of documented experience working intimately with addiction research faculty, instructors, counselors, journal editors, and other information professionals to assess and meet specific information needs. At the risk of singing our own praises, we could venture to say that these credentials should serve to at least meet the minimal requirements of authority on this narrow topic.

Frame 2: Information creation as a process

With our credentials established, we move on to the second frame, which may be the most relevant to librarians and information professionals—namely, understanding and

articulating the *processes* involved in information creation. Librarians' unique skill set allows for the evaluation of the infrastructure of the knowledge base. Of particular interest in the era of the Social Web is that most everyone is now both a *consumer* and *contributor* of content, and information no longer travels primarily in a single direction. Information is now more than ever an iterative, self-perpetuating cycle, building upon itself, including in the health sciences, which includes the study of addiction (Thackeray, Neiger, Hanson, & McKensie, 2008). The evaluation of the innumerable knowledge creators (harkening back to Frame 1), and understanding the use of different voices in the scholarly and popular conversation (foreshadowing Frame 5) is paramount. Particularly in a field as sensitive and widespread as addiction science, it is crucial to be able to detect, tease out, and evaluate each step of the information creation process, in all of its forms.

This frame is a useful one, because information products can be distinguished and organized by the ways they are created. One of the first lessons that CAS provides to undergraduates is the ability to distinguish between popular and scholarly materials. Even though a scholarly journal may physically look like a magazine, the processes generating them vary by leaps and bounds, which ultimately determines how each should be evaluated. To an established researcher, of course, this fact should be obvious. But the addiction science field does not begin and end with scholarly research. Counselors, educators, and everyday citizens are not usually getting their health information directly from scholarly research, but instead through popular media formats like the daily news, magazines, blogs, or curated websites. And because these venues are exploding in form and function, it is always of the utmost importance to know how the information being provided was created.

A peer-reviewed journal, because of its inherent conservative and deliberate methods of creating and distributing information, is considered the gold standard in terms of

credibility. An article found in a magazine, while not peer-reviewed, likely had to at least go through some editorial process. Things like social media accounts or personal blogs are often directly posted with no intermediaries. By stressing the process of information in each of these cases, it becomes clearer what is behind the final product, and how much trust one can put in its claims. Confusing the matter more, expert researchers are often represented on popular health blogs, providing their opinion on addiction-related topics. A keen eye is necessary to distinguish between the degree of authority of different types of texts, which can often come from the same author.

Further complicating matters are the levels of credibility established within each of these admittedly overly broad categories. For example, what exactly constitutes a peer-reviewed journal? There is no one definition of peer review. Some journals demand peer review be blinded, while others advocate for reviewers to be transparent (Van Rooyen, Godlee, Evans, Black, & Smith, 1999). Arguments arise over the definition of a "peer," over its effectiveness, and whether it is reaching its ultimate aims (Smith, 2006). This is to say nothing of so-called "predatory publishers" who may shirk peer review altogether. And there has of late been a focus on some of the issues in academic publishing that in years past were considered to have been minor at best in the perceived self-correcting world of science, including plagiarism and fabricated data. This has led to some resources devoted solely to the process of scholarly knowledge creation and its issues, such as the Society for Scholarly Publishing (sspnet.org/), its subsequent blog *The Scholarly Kitchen* (scholarlykitchen.sspnet.org/), and the more narrowly-focused but incredibly useful academic watchdog site Retraction Watch (retractionwatch.com).

These are but a few examples of a much broader concept, but the important takeaway is that by focusing on the process of information creation, one can potentially spot potential systemic issues at their root, which

can lead to more sustainable processes in the future.

Frame 3: Information has value

The explosion of information via the internet has created myriad ways to use information. Information is valuable inasmuch as it is a commodity, in its educational and influential value, or in the general enlightenment and understanding it can provide. For the sake of brevity, we will discuss only the first of these values—information being used to generate revenue, and a few of the ways it impacts academic research.

Information as a commodity

Perhaps the most obvious example of information being used as a commodity is in the subscription model of academic journals and databases. To fully understand this use, we must ask why these institutions charge a fee for information that is so often publicly funded. Part of the answer can be determined by building off of Frame 2, looking again at the process of disseminating high quality, well-organized information for maximum discoverability. Editing, copy-editing, peer-review, vetting, indexing, typesetting, file format conversion, and all of the rigorous (perhaps tedious) work necessary in producing a top-quality product comes at a cost, with some estimates ranging around \$3,500-4,000 per article (Van Noorden, 2013). The cost involved is not always monetary (some of the work is technically free, e.g., peer review), but a not insignificant time commitment is also required to produce a worthwhile product.

Some publishing companies may take advantage of the leverage they have, leading to skyrocketing subscription rates and so-called “Big Deals,” which package journals together and charge a flat fee. These packages often include journals that a library might otherwise not subscribe to, and is a shift that has been criticized on many grounds, including potential antitrust violations (Edlin & Rubinfeld, 2004). This animosity has in no

small way contributed to the emergence of the Open Access movement.

But the OA model also treats information as a commodity. The theory is of course that the products of often publicly-funded research initiatives ought to be available to the public, free of charge. Presumably there is a vetting process and editorial board and all the other accoutrements of subscription journals, but the money to fund this process often comes from the authors (via their grants or directly from their pockets) or the institutions paying for the privilege of being seen and shared. The value in this model is that, unfettered by pay walls, proliferation and dissemination of information is *fast*. The danger in this model is the potential conflict of interest that arises when it becomes more profitable to publish a higher quantity of articles. The emergence of “predatory publishers,” those who publish with very low standards, presumably with a profit motive, has been an unfortunate consequence of this model, and the addiction field is not immune (Babor & Ward, in press).

For a more general information-as-commodity example, there is of course Google’s model. Put simply and admittedly superficially, this model is funded by advertiser dollars. The more clicking and moving around on the web, the more money is generated. Quality is sacrificed for efficiency, which encourages a very superficial interaction with information (Carr, 2008).

Copyright law and policies are important to understand in this context. While sometimes Google and Open Access journals are presented as a panacea, some of the very best information available is still found in journals and books that require a subscription or appear only in physical form. A major part of information literacy is in the understanding of what value libraries and information centers can add to the research process, not only as intermediaries to match the best information to the user’s needs, but also as subject experts on how information can be accessed, used, and displayed within the legal limits. Copyright is a complex law, attempting to foster creativity and productivity through policies that give incentive to knowledge and

information creators, while ensuring the maximum access possible without infringing on their rights.

Frame 4: Research as inquiry

Just as information creation is a process (Frame 2), so is information seeking. Anyone involved in the addiction field ought to be familiar with this process. Perhaps the best way to articulate this peculiar phrasing of “research as inquiry” is to distinguish between *searching* and *researching*. In librarian parlance, the former is usually presented as “ready reference” questions—that is, searching for known items. The latter, however, can be understood as the backbone of this entire endeavor to support a common sense set of Addiction Information Literacy competencies.

First, those in the field should be aware of the best group of resources for the topic of addiction, how to access them, and where to find more. For example, when training best research practices at the Center of Alcohol Studies, it is imperative that our students walk away with a solid understanding of particular databases that address addiction and to which Rutgers University has access (in our case, we primarily use PsycINFO, Academic Search Premier, and MEDLINE). Additionally, there are numerous open access and governmental resources that those in the field should be familiar with, including the Substance Abuse and Mental Health Services Administration (SAMHSA) along with its Data Archive (SAMHDA), MEDLINE Plus, and the PubMed and PubMed Central databases. A primer on the benefits (free!) and drawbacks (often poorly organized or curated) of using free databases like these should be established. Advanced training can even be provided for lesser known items, such as grey literature.

Once the resources have been identified, it is equally important to learn how to best use them. A primer on basic principles of searching ought to be given, including setting search strategies (see Frame 6), an understanding of taxonomies and controlled vocabularies, how to best balance between

precision and recall of search results, and when to use more advanced techniques like footnote chasing. Perhaps most important in this process is the understanding that research is an iterative process, in which the information gained from preliminary searches should be productive, and lead to more refined and targeted searches as the process evolves. Further, the knowledge that a single concept can be represented by a multitude of search terms, or conversely, a single search term represented by a multitude of concepts, is essential. And the method of organizing these concepts and their corresponding terms is as multitudinous as the indexes available.

Finally, the evaluation and organization of these results should be approached in a systematic manner. The evaluation of an article, website, or other research product is partly tied to Frame 1 (authority), but that is just the first “A” in the oft-used library teaching tool, the CRAAP test, an acronym which also covers the assessment of said product’s currency, relevance, accuracy, and purpose (Wichowski & Kohl, 2012). And once these items have been vetted, the next step is how to properly store and organize them for use. We strongly advocate the use of a reference management tool, be it RefWorks, Zotero, EndNote, or Mendeley, to name but a few.

Training in this area cannot realistically be more than a crash course in this frame, as the bulk of the information profession is dedicated to it. We can provide a general overview of how information is organized, particularly in databases but also on the web and in print material, and how to go about accessing these information sources, and we can customize training sessions according to our audience, but ultimately, a successful session focusing on this frame should result in an understanding that the information profession exists for a reason, and at best will serve to point out that the recipient often does not know what he or she does not know.

Frame 5: Scholarship as conversation

Scholarship can be thought of as an ongoing and endless conversation, as it is built on the past, and its products of inquiry are developed alongside peers. Information and knowledge are not produced in a vacuum, but rely upon the input of those who have come before and those simultaneously pursuing similar topics, while being designed for future generations to further build upon. This frame correlates strongly with the concept of translational science, in which research is used in future research, in clinical practice, in everyday life, or in setting policy.

Because research is disseminated to so many diverse populations, this “conversation” takes place in a variety of venues. A core competency of this frame is the ability to understand one’s audience before, during, and after designing a research agenda. For example, if the subject at hand is oriented to peers (e.g., this article directed to fellow substance abuse librarians) then an assumed base level of knowledge on the topic can be assumed, and one can delve a bit deeper into a topic, using insider terminology and field-specific jargon.

But a piece of scholarship is only fully understood when placed into the context of the larger whole. The Center of Alcohol Studies, for example, is organized by division, with research working as a separate entity from education & training, which itself is separate from the information services division and its publication arm. Researchers often speak to other researchers. Education & training attempts to translate research for practicing addiction professionals, including counselors and clinicians. Publication of scholarly material is meant to advance science, but can also be translated into a lay summary for these audiences. The information division, ideally, would be entrusted to assess the needs of each of the populations being served, and provide customized services to further optimize performance. The latter would potentially have the luxury of being able to take a “big picture” view and analysis of the

field, as it is not beholden to any one specific part of it. Our specialty as information professionals lies in *not having a specialty*, and we should use this unique position to determine the field’s direction, gaps, needs, and future directions.

Frame 6: Searching as strategic exploration

The final frame can be seen as the fulfillment of Frame 4 (Research as Inquiry). The strategy of a search ultimately depends on the type of investigation taking place. Once an inquiry is articulated, its scope, direction, and type must be defined. Selecting the database or sources of information and developing search terms, understanding the field’s typical terminology and potential synonyms depending on the database used, and more knowledge practices and dispositions should come to the researcher over time.

As mentioned at the top of this article, the addiction field comprises several disciplines, so in order to adequately run a systematic review within the current landscape of resources available, one must comb through multiple domain-specific databases. Beyond the three core databases mentioned earlier (PsycINFO, MEDLINE, Academic Search Premier), a comprehensive search might also require a user to explore Biometrical Reference Collection, SCOPUS, ScienceDirect, Web of Science, Westlaw, LexisNexis, and even open resources such as Google Scholar and the aforementioned government-run websites. Due to the differing coverages of these databases, there is unfortunately not a lot of overlap in their respective results. While there is no one true signal for when a search has been exhausted, a good sign is when redundancies begin to appear even when using different search terms and searching within different databases. Because these redundancies tend to be few among these databases, one can never be certain that all of the most relevant literature has been found on a particular topic.

The full realization of this frame in the addiction field would ideally be a one-stop

database for the information needs of an addiction researcher. While no database can claim to be entirely exhaustive, such a tool could go a long way toward making research in the field more efficient, and simplifying the exploratory process that embodies this frame. Some previous attempts have been made to provide a tool of this nature, most prominently the ETOH database, which concentrated on alcohol literature, and was canceled in 2003. In retrospect, the decision to cease the database instead of build upon it has proven to be shortsighted, as its absence is still felt in the addiction field over a decade later. To quote alcohol historian William White in reaction to closures like this one, "it feels like the field has died and its most valuable possessions are being auctioned" (White, 2013). To properly execute an ideal database of this type goes far beyond the scope of this paper, but the idea serves as an exemplar of how the addiction information profession can add value to a field by assessing the strategic exploration process, determining areas in which that process may be lacking, and formulating innovative solutions to fill those gaps.

Conclusion

This paper explored the potentials of the 2015 updates of the Information Literacy Competency Standards for Higher Education for the transdisciplinary field of addiction science. In order to conceptualize each frame (Authority Is Constructed and Contextual; Information Creation as a Process; Information Has Value; Research as Inquiry; Scholarship as Conversation, and Searching as

Strategic Exploration), the IL Standards were interpreted and evaluated in terms of their prospective application in addiction science and demonstrated by multiple examples from the field.

Translating the frames into addiction science indicates a strong potential if adopted as guidelines in the research process. A group uniquely positioned to facilitate adding value to research by promoting addiction information literacy consists of information specialists and librarians, who possess the skills and abilities to understand the implications of the framework in researching addiction science and to educate addiction researchers. The development and adoption of guidelines customized for addiction science would greatly enhance the research experience and research output. In the process of understanding IL Standards, researchers could benefit tremendously from learning to appreciate information, gaining a better understanding of how information is organized, updating their essential searching skills, respecting the implications of processes over end results, and exploring the latest venues in scholarly communication, including their hazards and benefits.

Information specialists have always placed a strong emphasis on the development and dissemination of information. Promoting addiction science information literacy by structured instruction, including best practices for the translation of research findings, could be another area of expertise to augment research.

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