

Crafting an Infodemic Response through Information Literacy

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Abstract

Information literacy has long been seen as an empowering tool, useful in helping people navigate the information landscape and make informed decisions. This paper discusses how information literacy could be used to address concerns pertaining to the infodemic, as well as the different approaches selected groups and institutions have taken to address these concerns. It also discusses new information practices that have emerged during a pandemic and the kinds of information disorder that came with it. Through these discussions, this paper could be useful for librarians and information literacy educators as they develop and implement their respective information literacy programs.

Keywords: Information Literacy, Information Literacy Programs, Pandemic, Infodemic, COVID-19, Health

INTRODUCTION

Information literacy is the ability to locate, evaluate, and use information to address an information need (American Library Association [ALA], 2000), make balanced judgments, and engage in society (Chartered Institute of Library and Information Professionals [CILIP], 2018). It is an empowering skill that helps people make informed decisions applicable to different aspects of their life, whether for citizenship, education, health, the workplace, or their finances. In recent years, the meaning of the concept has shifted from being related to research skills to one that can be applied to academic purposes. Through this redefinition of the concept, the way it is taught has also evolved. Today, topics such as information disorder, along with other related literacy concepts such as health information literacy, political literacy, environmental literacy, and

financial literacy, are also associated with information literacy. Learners are taught to examine both information uses and information abuses as seen in these contexts. They are also educated on the ways to determine information's validity by being more critical of the information they receive. The importance of information literacy, specifically in the context of health, is further highlighted today, amidst the COVID-19 pandemic.

Research on information literacy and information disorder promotes the idea that the issue can be addressed by information literacy education (De Paor & Heravi, 2020). As such, this paper deals with discussions of the following areas: the information practices that have emerged during the time of the COVID-19 pandemic, the examples of information

disorder associated with it, and the steps employed by different institutions in using information literacy as a tool to address not just the pandemic but also the infodemic. Further, the end goal of this paper is to serve as a guide for librarians and information literacy educators in developing and implementing their information literacy programs. While the approaches covered here are mainly about the COVID-19 infodemic, the paper may also be used as a guide for other information literacy issues, not just for health-related information and sources.

Being “Information Literate” Today

The Chartered Institute of Library and Information Professionals (CILIP) gives an in-depth discussion of the contexts in which information literacy can be applied. These five contexts are everyday living, citizenship, education, the workplace, and health. Focusing on its application to health—information literacy, when discussed in this context, could be referred to as health literacy. It espouses the idea that information-literate people make informed choices relating to their health and well-being. Finding reliable sources of information in managing health concerns and the applicable preventative approaches is vital for individuals. This involves using credible and reputable healthcare sources when looking for information about their condition, corresponding treatment, and prognosis. In addition, being information literate in the context of health also enables people to converse with their health providers and make informed decisions. To be information literate now means that a person can distinguish between real news and “fake news” and engage in informed discussions on politics, health, or other pertinent issues using information (CILIP, 2018).

The use of different information literacy frameworks in teaching the topic is very helpful, and the use of current issues where the value of information literacy can easily be associated is expected. Information literacy skills in finding, evaluating, and using information are taught as part of the information literacy instruction, whether in one-shot information literacy training or actual information literacy classes. There are also established ways of determining which information sources must be consulted for specific information needs. However, this might be slightly different when teaching health information literacy, as some issues exist concerning the readability of health resources (Daraz et al., 2018) and how this could potentially lead to misinformation. Since the goal of

information literacy education is to empower individuals to discern the reliability and validity of the information they find so that they can make informed decisions, this might be hindered by the level of readability of the resources they consult.

Contemporary topics and issues related to information literacy are incorporated into how the concept is instructed. This is due to the observed need for more concrete and relatable applications of the concept of information literacy so that its learners will easily understand such concept. Information literacy education is seen and promoted as one tool, if not a solution to problems concerning information disorder. Information literacy skills, while still understood as helpful tools for students and scholars in the conduct of research, can also be applied to other practical problems, some of which impact the politics, health, finances, or decision-making of information users.

The Infodemic

The nature of information literacy, as something that enables people to become more critical and evaluative, could help information users discern what is factual versus what is misleading. Such concern is indeed very timely now as the world is going through a health crisis. The COVID-19 pandemic has brought us concerns not just regarding our personal well-being and health but also about the prevalence of information disorder associated with it. The term used to describe this concern is *infodemic*. The World Health Organization (2021) defines an infodemic as:

Too much information including false or misleading information in digital and physical environments during a disease outbreak. An infodemic causes confusion and risk-taking behaviours that can harm health. It also leads to mistrust in health authorities and undermines the public health response. It can intensify or lengthen outbreaks when people are unsure about what they need to do to protect their health and the health of people around them. With growing digitization—an expansion of social media and internet use—information can spread more rapidly. This can help to more quickly fill information voids but can also amplify harmful messages. (“Overview” section, para. 1)

The use of the term *infodemic* has been studied by other institutions as well, such as the Arts and Humanities Research Council (AHRC), and the concept has been associated with other phenomena, such as conspiracy theories (Infodemic, n.d.) and other forms of counterknowledge (Doessel, 2011). Since there has been a rise in COVID-19-related information disorder, it has been recognized as another problem we are currently battling, aside from the actual pandemic.

The problem with a polluted information landscape is not new; the concern has been around for a while, even before the COVID-19 pandemic. The International Federation for Library Associations and Institutions (IFLA) has earlier released a call to governments to discuss the surfacing of fake news, misinformation, and disinformation. The belief is that for a person to engage fully in society, make better decisions, and form informed opinions, a person should be able to distinguish information from other deceptive uses of information (IFLA, 2018). This deceptive use of information has been called many names, such as alternative facts (Conway, as cited by Blake, 2017) and fake news (Wardle, 2017). Still, for the people at the Public Data Lab in Amsterdam, it is called information disorder (Boenegru et al., 2017). So here it is established that these information disorders we regularly see online have existed for a while. It has only become more noticeable and rampant now because internet connectivity has aided its propagation.

Kandel (2020) labeled the act of sharing information disorder examples as information disorder syndrome. He proposed a grading for information disorder syndrome and proposed interventions to address it. His grading for information disorder syndrome is divided into three levels, with each level corresponding to the kind of information disorder one shares and/or creates. People under Grade 1 share fake news on social media and in physical or virtual groups. The people categorized here are those who share information without fully understanding whether the information is correct or not. Also included in this category are people who share disinformation and malinformation while not being the creator or creator of what they share. Grade 2, however, is one step more extensive than Grade 1, in which people share or develop misinformation or disinformation to make money and gain political influence. Grade 2 includes people who created disinformation and aim to capitalize on existing information disorder. Examples of actions under Grade 2 include predatory conferences, as well as

dubious travel and hotel recommendations containing false information. Finally, Grade 3 information disorder includes people who share or develop misinformation and/or disinformation with the intent of harming people with or without the intent to make money. This includes the anti-vaccination movement. The management strategies proposed by Kandel (2020) will be discussed in the section further below.

LITERATURE REVIEW

Information Practices during the Pandemic

Identifying the novel ways of teaching information literacy supports the investigation made by Lloyd and Hicks (2021) in their research on how people's information work and practices changed during the COVID-19 pandemic. As one of the first research papers to talk about information practices during the pandemic, one of the aims of the research was to determine how information literacy practices developed as a response to the pandemic.

The research found that people transitioned into a new information environment during the pandemic via three phases. These three phases began with an *unfolding* phase where people became acquainted with the pandemic for the first time and familiarized themselves with the actors in the pandemic as well as the possible changes it could cause to daily living. Information literacy practices at this phase focused on targeted information seeking concerning the pandemic and observing.

The next phase is the *intensifying* phase, where people attempt to understand the pandemic and its short-term and long-term effects. This phase is marked by information literacy practices like "hoovering" up information, which describes people's propensity to absorb all available information about the pandemic. This includes new practices expected from people, which were all part of the adjustments implemented in the daily practices of people living amidst the pandemic. Another information literacy practice that stemmed from this is *mediating*, where people share learnings and new information about the pandemic to allay fears about what is happening. The next stage is *documenting*, which is the use and creation of reflective text and visual images to represent the present experience while experiencing the pandemic.

The third phase is *maintaining*, where people remain to have an informed view of the pandemic and exercise more control over it. The stage presents information literacy practices such as

compartmentalizing, which functions somewhat as the opposite of hoovering. People became avoidant or more selective of the information they absorbed. Tapering off is another information literacy practice borne out of this stage, choosing and narrowing down their preferred information sources to remain in the know about the pandemic.

After determining these phases, an overarching theme of safeguarding was identified. It is characterized by protecting oneself, other people, and institutions when accessing and using information. The act of safeguarding represents the value of context, a central concept in understanding information literacy. All three phases discussed in the previous paragraphs are set against the backdrop of the pandemic. The information literacy practices borne out of it may be broad, but they focus primarily on minimizing risks and how the effects of the pandemic may be mitigated.

Information practices are driven by the information need and context. Following this belief, the paper by Zimmerman (2021) talked about how the COVID-19 landscape affected the health information-seeking behavior of people. The paper aimed to determine the differences in health information-seeking behavior of two groups: one from 2019 and one from April 2020. The research also hoped to explore shifts in information-seeking behavior during the pandemic and determine the participants' health information literacies concerning information-seeking. Using three different assessment tools: the Tool for Real-Time Assessment of Information Literacy Skills (TRAILS), the Health Literacy Skills Instrument (HLSI), and the Brief Health Literacy Screening (BHLS) tool, participants were tested on their information literacy competence. Following these assessments, it was determined that there was a significant rise in the use of news sources as health information sources during the COVID-19 pandemic. In this case, the most preferred news source is online newspapers, followed by national and local news presented on television. The study also found that social media sites, such as Twitter, Facebook, and Instagram, and forums like Reddit were also preferred sources for health information. Lastly, the difference between the health information-seeking behavior of the two groups was that more health information seeking was happening in the 2020 group over the 2019 group.

Information Disorder during the COVID-19 Pandemic

When conducting information seeking online, as mentioned in the Zimmerman (2021) paper, some respondents preferred using some social media sites as

an information source; one would inevitably encounter misleading information. Even pre-pandemic, this has already been a concern. Igbinovia et al. (2021) conducted research on the importance of information literacy competence in curtailing fake news about the COVID-19 pandemic. The objectives of the paper were to study the role of information literacy competence among LIS undergraduates in Nigeria in addressing misinformation caused by the COVID-19 pandemic. Using a survey, 138 undergraduates from different universities in Nigeria were studied. The information literacy competence of the participants was determined and correlated with their ability to discern fake news about COVID-19. Those with higher information literacy competence are more able to discern fake news. Findings indicated that the respondents could define and express the nature and extent of their information needs and had the ability to identify valid sources of information easily. Further, it was determined that while there was a low level of fake news prevalent among the participants, the two major causes of fake news among participants were:

1. The bombardment of information related to the COVID-19 pandemic. This could be from different sources: media outlets, television, and the internet.
2. The challenge of discerning authenticity among the rapid circulation of information from different information sources.

A related study by Hansson et al. (2021) studied the types of harmful information prevalent in selected European countries in the context of the COVID-19 pandemic. The countries examined were France, Italy, Norway, Finland, Lithuania, and Estonia. Through the compilation of 98 case studies from news media outlets, scientific reports, and other documents discussing information disorder, the researchers identified six different forms of potentially harmful information related to COVID-19. These six were:

1. Discouraging safety precautions and measures against catching and/or spreading COVID-19. This includes information that questions the value of using face masks as well as the promotion of anti-vaccination ideas.
2. Promoting the usage of false and/or harmful cures and remedies, such as promoting the belief that cheese and colloidal silver are COVID-19 remedies.

3. Providing false information regarding the transition of and immunity to the virus, such as the claim that type O blood groups are less susceptible to the infection.
4. Trivializing the consequences caused by the pandemic. This includes false predictions giving exact dates to when the pandemic will end. It also includes COVID-19 denialist claims.
5. Various scams that exploit people's fears regarding the pandemic.
6. Causing and enacting stigma and prejudice against certain groups with a high infection rate. This involves hostile behavior towards refugees and minority groups during the quarantine period.

Approaches to Addressing Battling the COVID-19 Infodemic through Information Literacy

Now is the time for strengthening information literacy education more than ever. Looking at the information literacy practices and related concerns presented in the previous portion, it is very obvious that a more robust approach to information literacy instruction should be implemented. While multiple aspects of information literacy skills can be covered, following the discussions above, the aspects of searching behavior and information evaluation should be highlighted. What other approaches in information literacy education could be used to address the COVID-19 infodemic?

It has long been accepted that librarians play a crucial role in instruction. This is no different now. The same is highlighted by Young et al. (2020) in their discussion of the role of libraries in misinformation programming. The American Library Association has released information and resolutions that oppose the spread of information disorder. Other library associations have done so as well, strengthening the call to librarians that they hold an important responsibility in solving information disorder-related concerns. As librarians are seen to have always been at the forefront of addressing this and promoting critical thinking when dealing with information, some measures look at how they can adapt existing information literacy frameworks to solve the current predicament of the infodemic.

Young et al. (2020) also recognize that while addressing information disorder is expected from librarians, there are limitations, such as the insufficiency of pointing users to LibGuides or checklists when looking for information. Young et al. also argue that librarians must also remember to adapt

the information literacy skills they teach to increasingly online environments and provide training on social media use and journalism, as these are crucial elements people must also understand when talking about information disorder. Another key suggestion is for librarians to remember the psychological aspect of misinformation. This is an excellent reminder of the importance of using more relatable illustrations of information disorder and looking at other explanations of the root of the problem, for example, the emotional triggers some information disorder provide that lead to them being viral.

Another research that talks about the role of librarians in addressing information disorder is from De Paor and Heravi (2020). They studied how the field of librarianship can help solve the problem concerning information disorder. The goal of their research was to serve as the foundation for the development of initiatives in librarianship to solve information disorder-related problems. They conducted an evaluation of existing literature in LIS, discussing the themes and patterns used by librarians in their quest to solve the issue of information disorder. Following their evaluation of the literature, the researchers discovered that fake news varied in what perspective it favored but could be categorized as either for financial gain, deceit, or entertainment. The findings highlighted the need to understand not just how it is created but also how it is disseminated. Along with this, information users must be taught not just to evaluate information but also to understand the environment where information is formulated and shared.

In another related research by Guo and Huang (2021), the response of academic libraries against COVID-19 was discussed. After conducting a content analysis of information literacy education through mini-classes in 42 academic libraries in different universities in China, it was determined that these institutions employed a multitude of responses to address the concerns regarding the pandemic. These approaches ranged from:

1. Recommending reliable information sources to users.
2. Developing and gathering current information on COVID-19 cases.
3. Resisting misinformation and disinformation.

While these attempts were greatly helpful, it was still marred by obstacles such as poor planning, lack of updates, and lack of resources. Suggestions on

improving these approaches include creating courses with multi-platform linkage, developing innovative teaching models with online and offline functions, and using teaching opportunities and content according to new information needs and fighting misinformation.

Bonnet and Sellers (2021) took an innovative approach to addressing COVID-19 misinformation by designing a program called the COVID-19 Misinformation Challenge. The program aimed to teach and develop critical thinking by quizzing participants regarding their COVID-19 knowledge and getting feedback on the different approaches participants could take in validating information found in various resources. This initiative is particularly interesting as it took a step forward than just seeing how well the participants were informed about COVID-19. Giving suggestions on how information can be verified and showing examples of reliable resources when giving feedback to the participants would help them understand that there might be more to what they already know. This feedback could either strengthen their information search practices or improve their practices in finding information. While the program is designed specifically for COVID-19 information, information literacy skills concerning locating information and verifying information could also be applied to other topics or other activities where a person would be in pursuit of information.

Kandel (2020) discussed three levels of information disorder syndrome and suggested interventions for each level. Some of his recommendations on how to manage the syndrome include rumor surveillance. He cited examples of social media companies monitoring where information disorder originates and target messaging to remove false information posted online. For this kind of approach, he cited some government efforts to bust myths with evidence-based information. Another approach Kandel recommended is psychosocial counseling, particularly for those exhibiting Grade 2 and Grade 3 information disorder syndrome. He posits that there might be a relationship between narcissism and excessive online activity. The most critical intervention for this would be to remind people that not all posts on social media are real. Though Kandel recognizes that this is quite challenging, his approach to managing information disorder seems more grounded in medical approaches, such as his suggestion to conduct counseling for people exhibiting Grade 2 and Grade 3 behavior. However, it is still important to remember that information literacy is a key aspect of managing the infodemic.

Buchanan (2020) goes a step further in identifying solutions to the information disorder problem, reiterating the need to raise digital media literacy to address disinformation concerns. He also adds that pre-existing beliefs of people regarding the truthfulness of what they see online could also contribute to why some people are more likely to spread false information. Further, he suggests that repeated exposure to media and information containing correct information could be helpful too. This echoes previous mentions of using evidence-based information to ‘counter’ false information available online.

DISCUSSION

All the resources examined in this paper, along with the corresponding discussions of each: understanding the new information literacy practices (Lloyd & Hicks, 2021; Zimmerman, 2021), the different information disorder concerns that emerged along with COVID-19 (Hansson et al., 2021; Igbinoia et al., 2021); and the approaches that various institutions have taken in addressing these concerns (Bonnet & Sellers, 2021; Kandel, 2020; Young et al., 2020; Guo & Huang, 2021) could be the basis of an information literacy program that focuses on health information and health literacy. This approach aligns with the information literacy perspective that information literacy is embedded in information-rich social practices, as Addison and Meyers (2013) studied. Following this perspective would not highlight the instruction of information literacy skills. Instead, it would focus on the understanding that there are other aspects of a person’s life where information is used. These areas are beyond school and research and must also be highlighted so that people would still appreciate the importance of using the right information and information sources in making decisions.

The contents of an information literacy program must always be mindful of real-world events so that the lessons would remain relatable for the clientele. This supports the importance of context in discussions of information literacy practices, as these practices are borne out of the context where they are situated. Since the announcement that COVID-19 is a global pandemic, changes should be incorporated into information literacy programs to give them a more contemporary tone and to ensure it remains relevant to the actual experiences of the learners undergoing training. Some new content that could be introduced should be anchored to the current information environment: current issues concerning the pandemic,

resources discussing it, examples of information disorder related to it, and the tools that information seekers can use to find useful information. Echoing what was mentioned in the introduction, since one of the five contexts of information literacy from CILIP is health, this could be a starting point in developing an information literacy program. Examples of contemporary issues under this topic that could be included in the program are concerns regarding vaccine hesitancy, pseudo-scientific practices to supposedly cure COVID-19, and health information sources selection and evaluation, among others. To further inform learners about the problem caused by the information disorder surrounding COVID-19, activities where students have to discuss their encounters with COVID-19-related information disorder could be added to the information literacy sessions. Doing this helps contextualize information literacy instruction and promotes the appreciation of its application beyond doing schoolwork as a research tool but as something that could help the learners survive the pandemic. Since health literacy and scientific literacy are concepts related to information literacy and infodemics, the inclusion of topics on these may be useful for information literacy programs. For health literacy, topics that emphasize familiarity with health resources and health databases may be added to a program. Another useful approach could be in helping information users evaluate credibility and authority in health and other related areas. This approach could be supplemented by discussing the contextual nature of authority in health (Association of College & Research Libraries, 2015). Understanding that authority is contextual may be helpful in instilling to information users that not all perspectives explaining health issues are trustworthy. This awareness is not just applicable to health-related concerns, but for other concerns as well. As for scientific literacy, a good introductory approach could be through a review of the scientific process. This approach may further be reinforced by introducing examples of counterknowledge. Doing this could serve as a springboard for discussions on how scientific knowledge is produced and disseminated, and how the spread of counterknowledge on issues such as health and the environment may be addressed. Aside from including the above-mentioned topics, changes in the way the program is delivered may also be implemented. Instead of utilizing a lecture or seminar-type approach to instruction, gamifying it or adding a myth-busters element to an information literacy program might also be appealing to learners.

Considering that the pandemic is still ongoing as a public health concern, this area is still a very relevant information literacy topic. There are still prevalent examples of information disorder surrounding COVID-19, and these must still be debunked or corrected. Legitimate health sources and proven scientific practices must also be communicated or made available for people for them to be able to access relevant health information and make informed decisions.

CONCLUSION

The complex landscape of the information society people live in today shows that while information can be accessed very easily compared to the past, it does not necessarily mean that the information one can gather should automatically be considered reliable. Information literacy education remains crucial in ensuring that people use information sources effectively and do not fall victim to information disorder, especially when they pursue information for their health. As such, it takes enormous effort for librarians and information literacy educators to develop information literacy programs to ensure that their clientele is information literate. These efforts are not in vain, though, specifically in the context of health: if people can use information sources properly and make sound decisions based on this, the beneficial effects to the broader community reward the efforts of people involved in information literacy education.

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