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Contribution of Academic Libraries in Addressing Misinformation Pre and Post Covid-19 Through User Education Programmes

Abstract: In the rapidly evolving landscape of information dissemination, academic libraries play a pivotal role in combating misinformation, particularly in the context of the pre and post-COVID-19 pandemic period. This is shown in this chapter through a mixed-methods approach, combining a comprehensive review of existing literature with insights gathered from librarians to provide a nuanced understanding of the multifaceted challenges posed by misinformation. This study investigates the contribution of academic libraries in mitigating the impact of misinformation through user education programmes, encompassing library instruction and information literacy initiatives.

The findings of the study reveal the roles of librarians, educators, and policymakers in fostering information literacy skills and combating misinformation, as well as contribute to the ongoing dialogue on the vital role they play in empowering users to discern credible information from misinformation in the context of the period of the Covid-19 pandemic and beyond.

Keywords: academic libraries, misinformation, fake news, user education programmes

Introduction

Assisting students and faculty with research and teaching information literacy skills are major responsibilities of librarians. For this reason, academic libraries today continue to act as hubs of information, which are not only sources of relevant and accurate information but are also helpful in curbing misinformation. Academic libraries, in the process of providing information in academia and beyond, for teaching, learning, and research, have encountered their fair share of challenges in providing information whilst managing the changes of collection,

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curriculum, evolution of technology, and the booming internet world. Consequently, academic libraries have had to embrace new frontiers and expand their services in providing information that is relevant and accurate. In turn, the development of new technologies has also resulted in rapid and fundamental changes in the way libraries conduct business (Bailin and Grafstein 2005, 317). In light of these changes, librarians have reconfigured the way their time and resources are utilised in order to maximise access and repurpose their mission in providing relevant, accurate, and current information towards literary skills within academic institutions. Information literacy skills involve evaluating information sources in terms of reliability, validity, currency, and bias, as well as knowing when information is necessary and how to use and cite it properly. Information literacy is not only important in academia, but also has practical applications in everyday life, such as making informed decisions and forming opinions based on accurate and relevant information.

With the growth of online resources and media, the scope of information literacy has expanded to include various platforms, including print, broadcast, online, and social media. The role of librarians in teaching information literacy has also expanded significantly, as this skill is now essential across disciplines and platforms. Librarians have also had to come up with ways to reform their services, repackage, and reassemble the resources for their users to ensure the relevance of library and information services in the increasingly complex information environment, as prevailing expectations posit that literacy interventions protect users against any harmful effects of misinformation (Jones-Jang, Mortensen, and Liu 2021). Librarians have also had to adapt to the multimodal training methods for user education programmes as well as commence the offering of online teaching, learning, and assessment through the likes of Blackboard Collaborate interface. Consequently, librarians faced various challenges during the pandemic, including the need to reimagine and reassemble library resources to maximise accessibility.

Statement of the Research problem

Misinformation has become increasingly prevalent in today's society and could negatively impact the quality of research. Throughout the Covid-19 lockdown period and beyond, librarians had to work hard with limited resources to reimagine and reassemble the library resources to maximise accessibility. During this period, librarians encountered various challenges, and were required to show resilience by adapting to multimodal teaching (Mehta and Wang 2020, 354). The pur-

pose of this study is to provide guidance for librarians on how to educate patrons about identifying and avoiding misinformation in their research. Librarians, as said, encountered difficulties during the Covid-19 period in providing adequate distant services to researchers, academics, and students for teaching, learning and research. With members of academic institutions being heavy users of social media, the likelihood of their exposure to misinformation, which circulates easily, is now a matter of concern to all who seek and generate accurate knowledge. Students and faculties must make evaluative judgments about the believability and trustworthiness of materials found on the internet, especially on social media platforms, and decide whether to share such information as accurate information or not. Although initial research has studied academic libraries' ability to identify and address misinformation, their behaviours around identifying, evaluating, and sharing misinformation through user education programs is yet to be elaborately investigated (De Paor, and Heravi 2020). Moreover, the ability of students in accurately evaluating their own skills at identifying misinformation requires more research. Previous research has also documented students' reliance on social media as an information source but is yet to specifically investigate any effect this behavior may have on their ability to accurately evaluate misinformation or fake news (LaGarde and Hudgins 2018). There is therefore an urgent need to increase the interrogation of the contributions of academic libraries in addressing misinformation through user education programs. In order to address these gaps, this study explores the following research questions:

Research Questions

RQ1. How are academic libraries addressing misinformation through their institutions' user education programs?

RQ2. What are the information-seeking behaviors relating to the ability of students in accurately identifying misinformation.

RQ3. What information-seeking behaviors relate to students' ability to accurately recognise and evaluate misinformation?

These research questions were investigated through a data analysis of a collection of literature on addressing misinformation through user education programs.

Methodology

This study employed both the qualitative and quantitative research methods. The researcher utilised a literature review and content analysis to examine user education programs offered by academic libraries. The documents were categorised based on the analysis, which was conducted using a systematic literature review that involved searching for relevant articles using specific keywords. The focus of the study was on academic libraries and their user education programs, also known as information literacy and library instruction. Additionally, the experiences of reference librarians were also considered during this study. To collect data and address the research questions, the researchers conducted a systematic literature review that involved examining scientific publications and shared experiences of librarians.

Literature Review

This section deals with literature findings on this study. A literature review involves the careful selection of available documents related to a particular topic and this section, therefore, presents pertinent literature pertaining to this study in historical and contemporary terms. It features a body of texts, which are reviews of critical points of current knowledge, including substantive findings and contributions to the topic under investigation. Kitchenham (2004) attests that a systematic literature review is a method of identifying, evaluating, and interpreting available research relevant to a specific research question, topic area, or phenomenon of interest and a comprehensive search approach with limited bias. Consulted literature for this study provide information, ideas, data, and evidence from specific perspectives in order to achieve certain aims as well as express various views on the nature of the topic under investigation. The effectiveness of these documents, in relation to the proposed research went through evaluation.

While conducting the literature for this study, a set of selection criteria was used to identify primary studies that offer direct evidence relevant to the research question. It is important to establish these criteria at the outset in order to minimise bias, as noted by Kitchenham (2004, 9). For this particular study, the primary aim was to identify recent research that examines or discusses library practices related to misinformation. As such, only documents that fulfilled this purpose were selected, without any bias related to language, country, type of library, or author perspective. In essence, literature for this study distinguishes what has been done from what needs to be done; synthesising and gaining a new perspective; identifying the relationship between ideas and practice; discovering

important variables to relevant topics; relating ideas and theory to application; and identifying methodology and techniques that have been used (Akinola, Ebewo, and Abodunrin 2017). The review in this chapter is expected to bring the reader up to date with current findings on the intersections of academic libraries in relation to misinformation, social media, and user education programs and to form the basis for understanding the prevalence of disinformation, misinformation, and fake news in communities. This is important, as it would be a major basis for this study.

Defining Misinformation

Misinformation has become a pervasive problem in our society, and libraries are stepping up to combat it. Many libraries provide resources and tools to help their patrons develop the critical thinking skills necessary to distinguish between accurate and misleading information, including offering fact-checking services, hosting workshops on media literacy, and providing access to reliable sources of information (Cooke 2017). Additionally, libraries collaborate with community partners to promote media literacy and combat misinformation beyond the library's walls. Furthermore, libraries also work to provide guidelines for evaluating sources and encouraging patrons to be mindful of their own biases.

As trusted institutions which provide access to information, libraries play a crucial role in promoting accurate and reliable sources of information and in equipping individuals with the skills needed to navigate an increasingly complex media landscape (Das and Tripathi 2023). Libraries take a proactive approach to combating misinformation and promoting media literacy in their communities. By doing so, they help to ensure that individuals have the tools and knowledge needed to make informed decisions about the information they consume and share.

Misinformation, colloquially regarded as "fake news," is related to types of incorrect, false, or misleading information. Disinformation is false information deliberately spread to deceive readers or hearers (Lazer et al. 2018). What distinguishes disinformation from misinformation is whether the error and the likelihood of others' deception are purposeful, intended, and spread for economic gain or to purposely mislead, and therefore we are dealing with a "creation" of disinformation (European Commission 2018). On the other hand, if there was no intention to deceive but rather a misinterpretation inherent in the receivers, or if the search took place in untrustworthy sources of information and then the unverified data was shared, incomplete, or inconsistent with the course of events, we are dealing with misinformation (Szpitalak and Polczyk 2019). Implicitly, misin-

formation has to do with error of omission or commission while disinformation relates with intention to deceive. Misinformation may be unintentionally inaccurate, but disinformation, on the other hand, is always deliberately false and misleading (Jack 2017). Furthermore, popular media has widely used misinformation coated with politicises and contested meanings that presents partisanship along political lines (Caplan, Hanson, and Donovan 2018).

Contemporary literature characterises misinformation as deliberately and demonstrably false news articles, capable of misleading readers. It encompasses problematic content employing misleading, deceptive, or incorrect information presented as authentic news, fabricated articles disseminating falsehoods while maintaining an appearance of credibility, and fabricated information imitating news media content in form but deviating from editorial norms and processes. Additionally, misinformation includes sensational, partisan narratives designed to boost readership and generate revenue (Allcott and Gentzkow 2017; Caplan, Hanson, and Donovan 2018; Howard et al. 2017; Knight Foundation and John 2018; Lazer et al. 2018; Marwick and Lewis 2017). Snopes.com, the well-known fact-checking website, refers to misinformation as fabricated stories intended to fool readers and generate advertising revenue (Mikkelson 2016). For the purpose of this study, fake news is agreed to be news or information that are prepared and disseminated with the sole purpose to deceive readers or viewers into thinking those are real information (Tandoc, Lim, and Ling 2018).

Misinformation Education Guide for librarians

This study seeks to provide guidance for librarians on ways to educate patrons on how to identify and avoid misinformation in their research. This is due to the prevalence of misinformation in today's society, which could impact negatively on the quality of research. To combat misinformation, librarians can play crucial roles by developing and implementing effective strategies that educate patrons about the importance of conducting research with integrity and using reliable sources (Bangani 2021).

The first step in educating patrons about misinformation is to define what it is misinformation and how it differs from accurate information. Misinformation is defined as false or inaccurate information that is spread unintentionally. To effectively educate patrons, it is important to provide practical examples of misinformation. Additionally, it is important to explain the consequences of relying on unsound sources of information and thereby spreading misinformation. Another approach to user education by librarians towards combating misinformation is

through information literacy. A few strategies that academic libraries should adopt to address misinformation using information literacy are as follows:

1. Collaborate with Faculty
Librarians should collaborate with faculty to integrate information literacy instruction into course curricula. Embedding information literacy will help ensure that students are equipped with the skills they need to evaluate information critically and recognise misinformation. Librarians in collaboration with faculties can develop assignments that require students to evaluate sources and identify potential biases.

2. Online Learning Materials
Academic libraries have created online learning materials to help students and faculty develop their information literacy skills. This includes instructional videos, tutorials, and interactive quizzes that cover topics such as evaluating sources and recognizing misinformation.

3. Workshops and Training Sessions
Information literacy curriculum is developed in collaboration with research departments to ensure that throughout the research process, students adhere to good research ethics and academic integrity. Academic libraries provide information literacy initiatives encompassing programs such as library orientation, fundamental library and research skills, an introduction to online catalogs, utilization of electronic databases, ethical information access and use, incorporating anti-plagiarism tools, and reference management software and tools. Many libraries have integrated information literacy into course curricula and research programs, aiming to bolster graduate success and contribute to the efforts against misinformation (Committee of Higher Education Libraries of South Africa. (2021).

4. Access to Trusted Sources
Although academic libraries provide access to high quality, peer-reviewed sources, students need to be taught how to use and evaluate these sources. Librarians curate collections of trusted sources and provide guidance on how to find use and evaluate them. This includes, amongst others, evaluating accuracy, relevancy, authority, objectivity, and many other criteria.

5. Promote Critical Thinking
Academic libraries promote critical thinking by encouraging students and faculty to question information and seek out multiple perspectives. This includes using multiple resources when writing assignments to get varied arguments and avoid biasness in resource usage. Librarians also provide guidance on how to analyse sources and recognise potential biases.

Students' information-seeking behaviours in identifying misinformation

Misinformation has become a prevalent issue in today's digital age, and students are not immune to its effects. As such, understanding students' information-seeking behaviors when it comes to identifying and combating misinformation is crucial for helping them to navigate the online landscape. Providing students with the tools and strategies necessary to identify accurate information from misinformation will not only benefit students in their academic endeavours but also help them become informed and responsible digital citizens.

Educational institutions, educators, and researchers hold a crucial role in arming students with the skills and knowledge required to discern reliable sources of information and cultivate a critical mindset while interacting with online content. Therefore, it is imperative to undertake studies and research that explore the information-seeking behaviors of students concerning the identification of misinformation. Through such investigations, we can gain insights into their approaches to information consumption and discernment, pinpoint gaps in their knowledge or skills, and formulate intervention strategies to enhance their effectiveness as consumers and producers of information. Ultimately, by empowering students to actively engage with information and question its validity, we can assist them in evolving into informed and responsible citizens who are better prepared to navigate the intricate and ever-evolving digital landscape.

Required evaluation skills in order to recognise misinformation by students

Developing the ability to recognise and evaluate information sources is a crucial skill for students to navigate the informational landscape. This is achievable through critical thinking skills, providing fact-checking training, and the offering of media literacy education with continuous support through user education training. To address this imperative, universities and colleges should prioritise providing resources that instruct students on how to discern and assess the accuracy of information (Zuo 2022). These resources ought to be designed to educate students on distinguishing between credible and unreliable sources, evaluating the quality of presented evidence, and critically analysing information from diverse perspectives.

Moreover, colleges and universities can enhance these efforts by collaborating with media literacy organisations, offering workshops, or integrating courses on media and digital literacies. This collaborative approach equips students with the tools to assess the credibility of information, enabling them to make informed decisions based on accurate data and ultimately fostering responsible and engaged citizenship (Jacobson and Mackey 2013). It is pivotal for students to cultivate a keen sense of awareness and skepticism towards information sources, allowing them to effectively discern fact from fiction. Lastly, the integration of media literacy into the curriculum contributes to the development of critical thinking skills essential for navigating a rapidly changing and complex information environment.

Limitations of librarians in Fighting Misinformation

Librarians plays a crucial role in promoting information literacy and critical thinking skills among their patrons. However, their efforts are limited in fighting misinformation due to the vast amount of information available on the internet and the inability to fully monitor and control online content. Librarians also face challenges in addressing the entrenched beliefs and biases of some individuals that contribute to the spread of misinformation (Herrero-Diz and López-Rufino 2021). Furthermore, they may face difficulty in reaching broader audiences outside of their institution and the immediate community they serve.

To overcome these limitations, librarians can collaborate with other organisations and individuals to promote reliable sources of information and educate the public on how to identify misinformation (Schroeder 2021). This can involve collaborating with media literacy and education organisations, participating in community outreach programs, and providing resources for digital literacy training to reach a wider audience. It is also essential for librarians to stay up-to-date with the latest developments in technology and media trends, enabling them to respond appropriately and provide relevant information to their patrons.

Recent evidence has also shown that the field of librarianship can help counteract the phenomenon of misinformation (De Paor and Heravi 2020). Librarians can engage in proactive approaches by providing guidance and support to their patrons on how to critically evaluate information sources, fact-check claims, and use reliable resources to obtain accurate information. Revez and Corujo (2021) posit that while the majority of studies have highlighted practices in academic libraries, with a primary focus on information literacy instruction, the ongoing discourse centres on strategies that aim to reinforce an authority-based approach to

source evaluation. This contrasts with the challenge of discerning emotional-based reactions to misinformation in a post-truth world.

Keisling (2018, n.p.) attests that "adapting to remote services, librarians have also had to adjust their user education programmes to accommodate online learning." This has included offering online training and workshops, as well as using virtual platforms like Blackboard Collaborate for teaching, learning, and assessment. This shift to online learning has required librarians to develop new skills and approaches to engage and support their users in a digital environment.

Despite the challenges, many librarians have risen to the occasion and found innovative solutions to support their users during the pandemic. Some librarians have developed new online resources and tools to support remote learning and research. Others have partnered with faculty to integrate library resources and services into online courses and assignments (Mehta and Wang 2020).

Misinformation as a global challenge

The issue of misinformation has become increasingly prevalent in recent years, fuelled by the proliferation of social media platforms and the ease with which information could be shared. As such, combating misinformation is a critical challenge that requires the collective efforts of individuals, organisations, and governments across the globe to ensure the integrity and accuracy of information. To address this challenge, strict government laws and legislation are necessary to prevent the spread of misinformation, social media rumours, disinformation, and misinformation (Pate, Gambo, and Ibrahim 2019).

Wang et al. (2019) attest that the proliferation of misinformation has become a pressing concern for individuals and institutions around the world. Detecting the elusive effects of misinformation thus requires a multifaceted approach that involves utilising advanced algorithms to monitor online activity, examining social media trends, analysing patterns of information spreading on social networks, and developing novel approaches for detecting misinformation.

Findings

The librarianship profession has endured and prospered over the years, successfully navigating through various pandemics, including the challenges posed by Covid-19. In academic settings, the conditions have not been excessively harsh; however, the identified issues are complex, with multifaceted forces at play, di-

verse constituencies to accommodate, various curricula to support, and competing values to reconcile. Despite these challenges, librarians continue to thrive in their profession (Otike et al. 2021).

Leeder (2019) infers that the study of misinformation contributes to the field of Library and Information Science by identifying specific information-seeking behaviors that correlate with students' ability to accurately identify and evaluate misinformation stories but has not identified specific behaviors associated with effective evaluations thereof.

Misinformation serves as a powerful form of disinformation, posing as a legitimate journalistic article and thereby undermining the credibility of journalism. This deceptive tactic exploits the timely nature of content and enables the dissemination of articles on sensitive topics, including politics, through platform newsfeeds (Tandoc, Lim, and Ling 2018). Recognising misinformation is challenging, primarily due to the difficulty in distinguishing intentional deception from the genuine presentation of a controversial perspective (Wang et al. 2019)

Limitations of the Study

Whereas this study's finding is essential, there are a few limitations to it. One limitation is the inability to ascertain the degree to which participants read news stories. This limitation aligns with previous research, which suggests that a significant proportion of the public's interaction with news on social media is restricted to reading the article headlines and not delving into the actual content of the story (Gabielkov 2016). Bastick (2021, n.p.) posits that "the behavioural effects of disinformation are not obvious through current means of content analysis or fact-checking, and such misinformation is consequently difficult to detect." In turn, although the behavioural impacts of misinformation could be empirically observed, refined, and anticipated by malicious content creators, the manipulation processes and their comprehensive consequences may not be fully grasped by the misinformation creators themselves (Lim 2020). This highlights a limitation for librarians, as they may struggle to detect these behavioral effects.

Conclusion

This study sought to establish the contribution of academic libraries in combating misinformation through user education programs, provision of quality and credible information to users, support for research and collection development, creat-

ing awareness, and using various tools to evaluate information. Despite the enormous threats and high risks of behavior modification through misinformation, the least librarians and libraries generally can do is to make their clients aware of this pandemic (misinformation).

Librarians can also help patrons identify reliable sources of information by providing them with access to credible databases and online resources. Librarians should provide guidance on how to critically evaluate sources of information, which has been achieved by offering training sessions, workshops, and creating online resources that teach patrons how to evaluate information for its currency, relevance, accuracy, authority and purpose.

Sullivan (2019a, 106) posits that librarians have admirably taken on the challenge, positioning themselves on the frontline to combat misinformation. The solutions presented were primarily derived from the traditional arsenal of information literacy tools. Sullivan (2019b, 1153) additionally asserts that individual responses have served to reaffirm the fundamental values of librarianship and underscore traditional services as effective means to counter misinformation.

This study, like most on this subject, confirmed the attempt, strategies, and efforts by academic libraries and librarians to combat misinformation or misinformation. Through information literacy initiatives such as collaborating with faculty, creating online learning materials, offering workshops and training sessions, providing access to trusted sources, and promoting critical thinking, academic libraries are trying to address misinformation pre and post Covid-19.

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