

Digital Literacy for Researchers: A Necessity in Today's Digital Age

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ABSTRACT

Digital literacy is essential for medical professionals to effectively utilize computer tools in research and practice. This editorial article highlights the necessity of computer skills for managing manuscripts, adhering to guidelines, and enhancing research visibility. It advocates for techno-literacy training to overcome challenges in digital publishing and ensure efficient dissemination of valuable research findings, ultimately advancing medical knowledge and patient care.

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BACKGROUND

Medical professionals are well aware of the significant role of technology in our daily practices. From electronic health records (EHRs) and telemedicine platforms to online databases and research articles, technology has revolutionized the way we practice medicine. It is essential for us to have a level of digital literacy skills to effectively communicate their findings and ideas. To

communicate our findings and ideas effectively, it is crucial to possess a solid foundation in digital literacy. In the era of online journal platforms, pre-prints, and open-access protocols, being tech-savvy is essential for efficiently sharing research findings.

The benefits of online systems are especially pronounced for developing countries, which are often under-represented

in medical research literature. This under-representation can impact the visibility and dissemination of research from these regions [1]. But the value of computer and technology-related knowledge extends in social, professional, and academic dimensions as well. Moreover, electronic submission systems such as EHR have streamlined the peer-review process, allowing journals like ours to maintain a high level of quality control [2]. Digital knowledge (techno-literacy) is a critical skill for authors, reviewers, editors, and readers alike. A scoping review highlighted that digital health literacy—which includes the ability to find and use health information using technology—is crucial for healthcare professionals [3]. Higher digital health literacy scores are linked to better self-management, increased participation in medical decisions, and overall improved quality of life [3].

Reviewers need to be able to efficiently navigate online submission systems and evaluate manuscripts based on formatting guidelines, while editors require necessary skills to manage manuscript flow and track changes. Readers, too, benefit from being tech-savvy, allowing them to easily access the resources, which may be free of cost only in electronic form. It also provides assistive tools such as on screen reading and speech-to-text transfer for those in need.

Lack of basic technological skills can lead to poorly typed manuscripts, difficulties adhering to format recommendations, and an unawareness of changes in journal policies or submission guidelines. Other common possible issues may be forgotten passwords, lost files, and unclear formatting. These issues can result in delays, rejections, or even the loss of valuable research findings, even well-designed studies [4]. As an

experienced editor, author has also observed many quality research papers being delayed for publication only due to poorly written manuscript, mostly either because of computer inefficiency or of language barrier.

WAY FORWARD

To address these challenges at a policy level, journals should consider implementing techno-literacy training for authors, editors, and reviewers. This training could include step-by-step guides on electronic manuscript submissions, tutorials on formatting and style guidelines, and an up-to-date list of frequently asked questions (FAQs). Online communities or forums for authors, reviewers, and editors could also be beneficial [5].

At a personal level, authors can take proactive steps to improve their techno-literacy skills. Familiarizing oneself with online journal platforms by submitting manuscripts or reviewing articles is a good start. Authors should also utilize free resources and tutorials offered by journals, publishers, or professional organizations. Using citation management tools like Zotero can streamline the reference management process. Importantly, we need to stay up-to-date with the changes in technical ways of working. Familiarity with common software such as office programs, statistical tools, picture editing software, and online manuscript writing tools is also beneficial for authors. Additionally, acquiring basic HTML or coding skills can enhance the readability of manuscripts on various platforms. Online platforms like Coursera, edX, and Udemy offer courses on scientific writing, data analysis, and specific software tools.

It's also useful for authors to stay informed about pre-prints, which provide an

opportunity for researchers to share their work in progress before formal publication. As peer review and journal process become lengthy, pre-prints have gained popularity for fast supply of info and getting feedback from peers. Some common platforms include arXiv and its variants medRxiv, and F1000Research. Even social platforms like researchgate may be useful to disseminate the research findings and receive comments from readers. Additionally, online databases like Figshare or Zenodo offer a platform for storing supplementary data, such as datasets, images, or videos, making them easily accessible and reusable by other researchers.

Speaking of open-source protocols, the Open Science Framework (OSF) is an excellent example of a collaborative effort to promote transparency, reproducibility, and openness in scientific research [6]. Value of open source in medical research is already discussed [7]. By providing tools for data sharing, version control, and collaboration, OSF enables researchers to share their findings more effectively while fostering techno-literacy among authors.

A WHO study emphasized that better training programs, incentives, and evaluations of perceived technology usefulness could increase the adoption of digital health tools among healthcare workers. The study noted that barriers such as resistance to change, difficulties understanding technology, and low literacy levels are common [8]. At the same time, there may be challenges in setting up the digital infrastructure in some settings, especially in the initial stage [9]. The journal-hosting institute has the responsibility in the growth of journal in this respect, by providing infrastructure, and financing to conduct various programs described above.

While technology is a great asset for medical research dissemination, it is equally important to understand the problems of relying heavily on it. excessive use of online platforms can lead to issues like data privacy breaches, where sensitive information falls into the wrong hands. Additionally, publishers' increasing reliance on targeted advertising (e.g., Google AdSense) raises questions about the impact on readers' experiences and authors' motivations. Excessive computer use has its own issues of physical and mental health. Furthermore, as we become more dependent on digital tools, there's a risk of ignoring some underlying technical issues rather than addressing them via correct diagnosis. After all, we are mainly medical professional and not computer experts; we are not expected to solve the intricate complexities of the computer network. It seems important to strike a good balance between embracing technology and ensuring that it serves us, not the other way around.

In conclusion, digital literacy is not a luxury but a necessity for medical professionals. As we continue to navigate the complexities of digital publishing, it is essential that medical professionals prioritize digital literacy and familiarity. We can thus ensure that valuable research findings are disseminated efficiently and effectively, ultimately advancing our understanding of medicine and improving patient care.

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