Information Research - Vol. 30 No. 2 (2025)

The digital transformation of the information professions: Exploring the impact of digital publishing and open access

Suliman Hawamdeh, Daniel Alemneh, and Jeff Allen

DOI: https://doi.org/10.47989/ir30253989

Abstract

Introduction. The information professions encompass a range of interconnected disciplines that contribute to the effective creation, processing, management, dissemination, and preservation of information and knowledge in diverse formats and contexts. Major technological innovations of the 20th century, combined with the rise of open access, open educational resources, and digital publishing, have greatly impacted public engagement with information and changed how people learn, communicate, and participate in civic society. This paper examines the impact of open access and digital publishing on information science education and the broader digital transformation of the information professions.

Method. The study adopts a historical and thematic analysis of major technological innovations and the emergence of open access (OA), Open Educational Resources (OER) and digital publishing platforms, focusing on pioneering initiatives in the information science field such as *Information Research*, *First Monday*, and the *Journal of Digital Information* (JoDI).

Results. Early open access and digital publishing pioneering initiatives served as catalysts for democratizing information access and reshaping the information field professional identities. Open access dismantled traditional barriers, facilitating global participation and promoting pedagogical innovation and resource sharing.

Conclusion. The study highlights the pivotal role of open access and digital publishing in the digital transformation of the information profession. It underscores the ongoing evolution of the information professions by positioning information professionals at the forefront of a global movement for equitable access to information and knowledge.

Introduction

The information professions are broadly characterized as the disciplines that deal with the dynamic interplay among data, information, and knowledge. These professions have undergone significant transformation over the past two centuries due to key innovations and technological advances, most recently computers, the Internet, and the World Wide Web. The 18th and 19th centuries saw the birth of information documentation, initially as a response to the explosion of scientific and technical literature and subsequently to a series of technological innovations and digital transformation.

In 1876, Melvil Dewey developed the Dewey Decimal Classification (DDC) system, which became the world's most widely adopted knowledge classification system (Hjorland, 2025). Nearly two decades later, in 1895, Paul Otlet worked with Henri La Fontaine to create the Répertoire Bibliographique Universel (Universal bibliographic repertory), a project to compile a master bibliography of the world's accumulated knowledge (Day, 2001; Maculan, 2023;). This work later became known as the Mundaneum, translating Otlet's vision of creating a centralized repository for global knowledge into reality. Otlet and La Fontaine's development of Universal Decimal Classification (UDC) was an extension of Dewey's system that laid the foundation for what is known today as the field of knowledge organization (Rayward, 2016).

The period following World War II marked a turning point in the information professions centred in libraries, archives, and government documentation. An article by Vannevar Bush in 1945 titled 'As We May Think' proposed an electromechanical device for interacting with microform documents (Bush, 1945). The memex concept influenced the development of hypermedia, hypertext, and the World Wide Web. In 1948, Claude Shannon published a paper, 'A Mathematical Theory of Communication', in *The Bell System Technical Journal* that revolutionized the study of communication by offering a rigorous, mathematical framework for quantifying and transmitting information (Shannon, 1948). He introduced the concept of entropy to measure uncertainty. Shannon's idea of information is a quantifiable entity that established the basis for digital communication, leading to profound advances in computation, data storage, artificial intelligence, and beyond (Shannon & Weaver, 1949).

The 20th century also saw the emergence of documentation and information retrieval as a field concerned with indexing, abstracting, and retrieving information and the foundation of professional institutions such as the American Documentation Institute which went through several transformation and name changes to the American Society for Information Science & Technology and then the Association for Information Science & Technology (ASIS&T) reflecting the shift in the profession (Bates, 1999).

The rise of Information science brought a more theoretical and computational orientation to information work, focusing on systems design, user behaviour, and information-seeking processes. Advances in technology in the 1980s and 1990s also enabled the digitization of information, leading to significant development in information retrieval, in particular, full text indexing and retrieval (Al-Hawamdeh & Wellett, 1989; Chowdhury, 2010; Salton & McGill, 1983). The convergence of information and communication technologies (ICTs) in the late 20th century further expanded the scope of the information professions, creating opportunities for collaboration across fields and sectors.

With the advent of the Internet and the proliferation of digital content, the information professions diversified rapidly. Specialized areas such as information architecture, user experience design, digital library and digital curation, knowledge management, and data science have emerged as interdisciplinary areas grounded in theory and practice. The 2000s marked the turn of the century, an era characterized by globalization and increased emphasis on knowledge as a factor of growth. This period has also seen a shift in library and information science education. The iSchools

movement started in 2005 as an effort to modernize library and information science education, with the need to prepare information professionals for work beyond libraries and librarianship with a particular interest in the relationships between people, information, and technology (Hawamdeh & Madali, 2024). The emergence of open access publication and the iSchools represent a significant shift in direction and philosophy in the information professions, emphasizing interdisciplinary research, technological innovation, and broader engagement with information-related fields and stakeholders.

Historical evolution of digital publishing and open access

The concept of the electronic journal (e-journal) started in 1976. One of the earliest examples is the *New Horizons in Adult Education* launched by Syracuse University began publishing electronically in 1976 via ERIC (Education Resources Information Center). The transition from print to digital publishing in scholarly communication began in the mid-1990s with the advent of the World Wide Web. Before that, scholarly journals were printed or distributed electronically on a limited scale through electronic newsletters, bulletin boards, or CD-ROM format (Schauder, 1994). The Internet and the Web revolutionized publishing and gave users more control of their intellectual capital. Many early electronic journals were born digital, but often mirrored print journals' editorial process and appearance (Tenopir & King, 2000).

With the rise of electronic publishing came the concept of open access, where scholarly research should be freely accessible to readers online (Suber, 2012). Several factors drove this movement, including the rising cost of scholarly publications. Open access (OA) emerged as a movement advocating free, unrestricted online access to research outputs. The open access movement received support as it aligned with the mission of academic libraries, which long held the belief that information should be set free and access to knowledge is a human right. Information professionals, particularly academic librarians, were among the earliest supporters of open access, seeing it as a solution to improve knowledge dissemination and equity in access.

The formal open access movement gained momentum in the early 2000s when the Budapest Open Access Initiative (BOAI) of 2002 defined open access to academic literature as free availability on the public internet, permitting users to read, download, copy, and distribute the works so long as authors are appropriately credited. It also identified two primary routes to open access: open access journals (gold OA) and author self-archiving in repositories (green OA). This was followed by the Bethesda Statement on Open Access Publishing and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities in 2003, further solidifying the philosophy and principles of open access among institutions and researchers. By this time, the term *open access* had become common in academia.

The Directory of Open Access Journals (DOAJ), launched in 2003 by Lund University, provides a valuable snapshot of the early growth of open access (Directory of Open Access Journals, n.d.). This growth of open access was fuelled by grass-roots efforts (individual academics or departments launching open access journals) and top-down policies where foundation and government mandates encouraged open dissemination of research work. One of the earliest significant policy shifts toward open access came from the U.S. National Institutes of Health (NIH) and the U.S. National Science Foundation (NSF) when the two agencies required all peer-reviewed journal articles arising from NIH- and NSF-funded research to be made freely available to the public (Kroth, et al., 2006). Initially, the policy was introduced as voluntary guidelines, which were mandated in 2008 and 2010 for both organizations, signalling strong institutional support for public access to federally funded research. This requirement was subsequently adopted by several international funding agencies, including the European Commission mandating policies requiring open access of publications arising from grants funded research (Kroth, et.al., 2006; Plan S, 2018).

Pioneering initiatives in digital publishing and open access

The open access (OA) movement has been significantly shaped by pioneering initiatives and projects that challenged the traditional scholarly publishing systems and championed the cause of making information available free of charge. One of the early infrastructure components of open access was the development of arXiv, developed by Paul Ginsparg in 1991 as an open access repository (Ginsparg, 2006). arXiv demonstrated the viability and scalability of preprint sharing as a mechanism for accelerating the dissemination of scientific knowledge. Several journals (including the *New Horizons in Adult Education*) predated the formal open access movement that can be dated to the Budapest Open Access Initiative (BOAI) in 2002, and these notable efforts should be recognized as pioneering efforts in making open access a reality. These bold early initiatives faced fierce resistance from publishers and academics who feared that such moves would compromise copyright and affect the revenue associated with copyright and intellectual property.

This section examines three scholarly information science journals that debuted in the era that predated the formal open access movement: *Information Research*, *First Monday*, *and Journal of Digital Information* (JoDI). The first information science journal established as an open access journal was *Information Research*, founded in 1995 by Professor T.D. Wilson, which focuses on information behaviour, information management, and information systems. *First Monday* was founded in May 1996; it focuses on Internet research and the Web's social, economic, and technical aspects. The *Journal of Digital Information* (JoDI), which was established in 1997 by the British Computer Society and Oxford University Press, focuses on digital libraries, digital documents, and information systems.

Information Research is the oldest open access journal in the information field. Tom Wilson founded it while he was working at the University of Sheffield. The journal predated the open access movement and the Budapest Open Access Initiative of 2002 (Wilson, 1996). Born digital, the journal followed a traditional editorial style with regional editors and an editorial board representing different aspects of the information professions. The journal gained credibility in the information science community by publishing original work due to its rigorous peer review process, respected editorial board, and commitment to free and permanent access for all readers (including persistent access to cited resources). The journal tackled emerging disciplines and research areas in information science, such as knowledge management, information data analytics, digital libraries, data science, usability and user experience, and knowledge organization, as well as information behaviour and information management more broadly. For example, in October 2002, Information Research published a special issue titled ‘Knowledge Management: The Emperor's New Clothes,’ edited by Suliman Hawamdeh and T.D. Wilson. This issue critically explored the foundations and evolution of knowledge management, addressing its conceptual underpinnings and engaging with timely and contentious debates in the field.

The journal is indexed in major databases like Scopus and DOAJ, and its articles are frequently cited in theses, textbooks, and policy documents. Its open access model has made it a preferred resource for researchers, particularly in user studies and digital information environments (Savolainen, 2007). *Information Research* is highly respected in the information science community for its commitment to accessibility, editorial independence, and academic rigor. It offered a bold model of a free, high-quality, peer reviewed journal without subscription or article processing charges. This *diamond open access* approach was significant for democratizing access to research and modelling ethical and sustainable publishing in library and information science (Fuchs & Sandoval, 2013).

First Monday started in 1996, one year after *Information Research*. It was officially launched during the 5th International World Wide Web Conference in Paris. Like *Information Research*, the journal was born digital and existed only in electronic format. It was designed to take full advantage of the Web regarding accessibility, distribution, and dissemination. In addition to being one of the

pioneer journals in information science, the journal fostered an inclusive, global scholarly community focused on the emerging Internet age. Articles are published on the first Monday of every month, hence its name, *First Monday*. The journal was hosted by the University of Illinois at Chicago for most of its existence and continues to be supported by the university's library system, underscoring the role of academic institutions in supporting open access initiatives (Valauskas, 1997; 2000).

First Monday distinguished itself from traditional and other electronic publications by its rapid publication cycle and production. The Web-based networking of authors, editors, and reviewers allows for a more global interactive and instantaneous editorial analysis (Valauskas, 1997). *First Monday* operates under a Creative Commons license, encouraging the redistribution and reuse of its content with appropriate attribution. This approach aligns with broader movements toward democratizing knowledge and providing equitable access to information.

The influence of *Information Research* and *First Monday* extends across multiple disciplines, including information science, libraries, archives, information systems, computer science, communication studies, digital humanities, and media studies.

It is also worth mentioning the *Journal of Digital Information* (*JoDI*), which was started in 1997 by the British Computer Society in collaboration with Oxford University Press. *Journal of Digital Information* specialized in information science-related areas such as digital libraries, metadata standards (e.g., Dublin Core), XML/SGML markup, user interfaces for digital repositories, and digital preservation.

Its editorial policy emphasized interdisciplinary research, drawing authors and readers from information science, computer science, library science, and web development. The journal also encouraged critical discussion of evolving digital infrastructures, including the architecture and sustainability of open access systems. *Journal of Digital Information*'s impact on the open access movement was evident through advancing research and practice related to digital repositories, hypertext systems, and information architecture. Early work on Open Archives Initiative (OAI) protocols appeared in in the journal, helping to shape the foundation of institutional repositories and open data infrastructure (Lagoze & Van de Sompel, 2001).

While *Information Research* and *First Monday* continue to be published, *Journal of Digital Information* ceased in 2012.

Open educational resources and pedagogical innovation

The ongoing digital transformation of education and scholarly communication has been influenced by two interrelated developments: open access (OA) and open educational resources (OER). While both movements aim to democratize access to knowledge, they operate in different domains, respectively academic publishing, and teaching and learning. Together, they have revolutionized how information is created, shared, and consumed globally, with profound implications for equity, inclusion, and the economics of knowledge (Ford & Alemneh, 2024).

Over the past decade, the rising cost of higher education has placed increasing financial pressure on students and their families. Among these expenses, the cost of textbooks has become a significant concern. In response to this challenge, many educators and institutions have turned to open access textbooks, also known as open educational resources (OER). Free and openly licensed materials are gaining popularity due to their potential to reduce costs, improve educational outcomes, support inclusive teaching practices, and promote equity in global education. Despite specific challenges, the benefits of open access in reshaping education are profound and far-reaching. Data from the U.S. Bureau of Labor Statistics published in 2014, showed a 943% increase in the price of college textbooks since 1978. The inflation dwarfs medical services (Medical Care 604%), the housing bubble (New Homes Prices 408%), and the Consumer Price Index (CPI 262%).

No wonder that the 'Open Education Fact Sheet' (SPARC, n.d.) noted that 65% of students report not purchasing a textbook because of its high price. SPARC further argued that open educational resources are the ideal model to leverage the digital environment to unlock the full potential for education.

UNESCO officially introduced the concept of open educational resources (OER) in 2002 as teaching, learning, or research resources that are in the public domain or that have been released under an intellectual property license that permits their free use, adaptation, and redistribution by any person (UNESCO, (n.d.)). The term may include full course curricula, course materials, modules, textbooks, media, assessments, software, and any other tools, materials, or techniques, whether digital or otherwise, used to support access to knowledge (Jimes et.al, 2019).

The most significant impact of open access on pedagogy is the increased availability of high-quality, up-to-date learning materials, particularly open access textbooks. One of the most immediate advantages of open access textbooks is their ability to reduce costs. Traditional books and supplies (e.g., textbooks, online textbooks, textbook rentals, laptops, calculators, and other course supplies) can cost hundreds of dollars per course and contribute to student debt. Full-time undergraduate students spend an average of USD1,290 annually on textbooks and supplies (Ma et al., 2024; Wittkower et al., 2020). For many students, these costs can be prohibitive and may result in students not purchasing required materials. Instead, they choose to borrow or share, which can negatively affect overall academic performance.

Open educational resources address this issue by offering free digital versions to the consumer, often under Creative Commons licenses that allow for use, adaptation, and sharing. Hilton (2020), in a review of sixteen studies involving over 100,000 students, found that open access adoption consistently led to significant student savings without reducing the quality of education. Some institutions have reported millions of dollars in total savings after adopting open access resources on a broad scale (Bliss and Smith, 2017).

In addition to cost savings, open access can improve academic outcomes, especially for students from under-served and economically disadvantaged populations. Studies conducted at Virginia State University and Houston Community College found that students who used open textbooks tended to have higher grades and lower withdrawal rates than their peers who used traditional textbooks. Fischer, et al. (2015) found that students using open educational resources achieved similar results to those from traditional textbooks. Colvard, Watson, and Park (2018, p. 262) state that 'Results indicate that OER adoption does much more than simply save students money and address student debt concerns. OER improves end-of-course grades and decreases DFW (D, F, and Withdrawal letter grades) rates for all students'. They also improve course grades at greater rates and decrease DFW rates at greater rates for Pell recipient students, part-time students, and populations historically underserved by higher education. Open educational resources address affordability, completion, attainment gap concerns, and learning. These findings contribute to a broadening perception of the value of such resources and their relevance to the great challenges facing higher education today.

Open access textbooks benefit both students and instructors by reducing costs and allowing greater flexibility in teaching. Unlike traditional textbooks, which are restricted by copyright, open educational resources can be modified, updated, and tailored to specific course needs. This adaptability encourages innovative teaching and supports the creation of materials that reflect students' diverse backgrounds and local contexts. Wiley et al. (2012) emphasize that the ability to revise and customize content is one of the most transformative aspects of such resources, particularly in fast-changing fields like science and technology.

Open educational resources also foster collaboration among educators. Faculty can share adapted materials, engage in peer review, and co-create pedagogically sound and contextually relevant

resources. This collaborative approach improves the quality of teaching materials and promotes a culture of academic sharing.

Moreover, open educational resources contribute to more inclusive education by allowing instructors to incorporate culturally relevant content and underrepresented perspectives, elements often missing from traditional textbooks. Hodgkinson-Williams and Arinto (2017) suggest that open educational resources can support the development of 'inclusive knowledge societies' by enabling content that reflects linguistic, cultural, and social diversity. Many open access materials also include digital accessibility features, such as screen-reader compatibility and adjustable text, aligning with Universal Design for Learning (UDL) principles and improving access for all learners.

By making educational content openly available, open educational resources support the decolonization of knowledge and foster a more balanced global intellectual landscape. They enable scholars and students from all regions to participate in creating and disseminating knowledge, breaking down traditional hierarchies of information production. Studies have shown that open access and open educational resources contribute to academic equity. They help bridge the gap between well-funded institutions and those with limited resources, offering equal access to high quality knowledge, increasing academic research's visibility, citation, and impact (Ford & Alemneh, 2022; Piwowar et al., 2018).

The reshaping of scholarly communication norms

The perception of open access journals and their prestige is gradually evolving following significant research funding agencies around the world as noted above. These policies have instilled more confidence in the open access movement and increased the proliferation of open access journals. The normalization of open access suggests that open access journals are increasingly viewed as reputable as traditional subscription-based journals (Piwowar et al., 2018). Despite concerns with the long-term preservation of digital material, the longevity of journals like *Information Research* and *First Monday* helped dispel the notion that digital publishing is less credible than traditional paper-based publishing.

The proliferation of user-generated online content and the challenges posed by low-quality predatory journals that take advantage of the open access pricing model have emerged as serious issues (Ayeni & Adetoro, 2017). Information professionals and librarians are essential in educating researchers and identifying legitimate open access journals using tools like Directory of Open Access's reliable and verified list. While the discussion regarding what constitutes a scholarly publication continues, the impact of the current open access model mirroring print journals' editorial process and the appearance of the traditional reviewing process is no longer a fringe or radical idea. It is gradually becoming integral to how scholarship is disseminated and evaluated. This move back toward more traditional review practices in digital publishing deeply affects information professionals, who must continue to adapt to new quality standards, update their article evaluation methods, and help users navigate a system that now mixes open access with formal academic review.

One major shift in the norm of publishing is the author's intellectual capital, copyright, and licensing (Kim, 2007; Suber, 2012). The traditional publishing model requires authors to assign the copyright to the publishers, and any re-use of the final products requires the authors to seek permission to use their own work. In the open access model, authors increasingly retain their copyright and publish their work with open licenses that allow authors to reuse their work. Creative Common licensing in scholarly publishing clearly recognizes the new model and the author's ownership of the original work.

We note that not all open access journals are free of charge, in the same way that not all traditional journals are free of charge. In most cases, the cost or financial responsibility for publishing in reputable open access journals falls on the author or their affiliated institution. Article processing charges (APCs) can be prohibitively expensive, creating a significant barrier for researchers committed to making their work freely accessible to the public. Halevi & Walsh (2021) surveyed 310 faculty active in research that show that about 50% of respondents include the anticipated APC costs in grant applications, and 16% will pay article processing charges using personal funds. The findings from the survey also show that while the majority support the concept of open access, most believe that charges are too high and should not be the responsibility of the authors. Neither *Information Research* nor *First Monday* have any article processing charges, subscription fees, or advertising, making them diamond open access journals.

The Internet and the Web have forged a new collaboration between researchers worldwide. The world's interconnectedness through social media and other technologies has enhanced global participation in knowledge production and authorship (Veletsianos & Kimmons, 2016). Now, researchers from rich and poor countries can connect and have access to the same material resources, increasing the diversity of contributions and enhancing the democratization of knowledge. The information professions have been instrumental in shaping these new norms, which are characterized by openness, speed, global inclusion, author empowerment, and public engagement. Information professionals are moving away from the traditional roles of custodians of knowledge to more innovators with active participants and redefining what it means to communicate scholarship in the 21st century.

Conclusion

Several factors, including the evolution of digital publishing and the open access movement, have significantly influenced the digital transformation of the global information professions and higher education. Early initiatives from the information science field such as *Information Research*, *First Monday*, and the *Journal of Digital Information* demonstrated the practicality of free and open access, reshaping scholarly publication norms. Historically, traditional publishing limited global participation due to high costs and restrictive practices. Open access removes these barriers, allowing broader global engagement with academic content and research and reshaping the skills and competencies required by information professionals in the digital age. Today, users are no longer passive recipients of information but rather co-creators of knowledge taking advantage of the participatory digital ecosystems.

Recent advances in information technology, particularly artificial intelligence (AI), have renewed emphasis on the need for digital literacy, ethical information stewardship, and social advocacy for information access and equity. At the heart of the digital transformation of the digital professions is integrating open access and open education resources into the core mission of educational institutions. Open access materials, particularly open educational resources, offer benefits beyond reducing costs. They enable educators worldwide to adapt and continuously update educational materials to match local needs and contexts. This promotes innovative teaching methods, encourages global collaboration among educators, and helps educational institutions more effectively meet community needs.

Despite these advances, challenges remain in ensuring sustainability, quality, and balance with traditional publishing practices. However, growing support from governments, educational institutions, and global initiatives indicates a promising future for open access. Continuing to embrace and advance open access practices will be essential to expanding global educational opportunities, facilitating knowledge sharing, and supporting international intellectual growth.

About the authors

Suliman Hawamdeh is a Regents Professor in the Department of Information Science at the University of North Texas, He Received his Ph.D. from University of Sheffield, and his research interests include knowledge management, information Science, cybersecurity, and data science. He can be constacted at Suliman.hawamdeh@unt.edu

Daniel Alemeneh is head of the Digital Curation Unit at the University of North Texas Libraries and teaches at the College of Information. He was a Fulbright Scholar, both at Addis Ababa University in Ethiopia (2019-2020) and at the University of Pretoria, South Africa (2021-2022). He published extensively and his research interests include Information organization, knowledge management, digital preservation, open access and scholarly communications. Daniel can be reached at daniel.alemneh@unt.edu

Jeff M. Allen is a Regents Professor in the Department of Information Science at the University of North Texas, USA. He received his Ph.D. from Penn State University, and his research interests include wisdom-driven leadership, knowledge management, and workforce development. He can be contacted at jeff.allen@unt.edu

References

Al-Hawamdeh, S., & Willett, P. (1989). Paragraph-based nearest neighbour searching in full-text documents. *Electronic Publishing*, 2(4), 179–192. http://cajun.cs.nott.ac.uk/compsci/epo/papers/volume2/issue4/ep020pw.pdf (Archived at https://web.archive.org/web/20220121002801/http://cajun.cs.nott.ac.uk/compsci/epo/papers/volume2/issue4/ep020pw.pdf)

Ayeni, P. O., & Adetoro, N. (2017). Growth of predatory open access journals: Implication for quality assurance in library and information science research. *Library Hi Tech News*, 34(1), 17–22. https://doi.org/10.1108/LHTN-10-2016-0046

Bates, M. J. (1999). The invisible substrate of information science. *Journal of the American Society for Information Science*, 50(12), 1043–1050. https://doi.org/10.1002/(SICI)1097-4571(1999)50:12%3C1043::AID-ASI1%3E3.0.CO;2-X

Bliss, T. J., & Smith, M. (2017). A brief history of open educational resources. In R. S. Jhangiani & R. Biswas-Diener (Eds.), *Open: The philosophy and practices that are revolutionizing education and science* (pp. 9–27). Ubiquity Press.

Bureau of Labor Statistics (2014). *Consumer Price Index Databases.* Retrieved April 12, 2025, from http://www.bls.gov/cpi/data.htm (Archived at https://web.archive.org/web/20250404102538/https://www.bls.gov/cpi/data.htm)

Bush, V. (1945). As we may think. *The Atlantic Monthly*, 176(1), 101–108. https://archive.org/details/as-we-may-think

Chowdhury, G. G. (2010). *Introduction to modern information retrieval* (3rd ed.). Facet Publishing.

Day, R. E. (2001). *The modern invention of information: Discourse, history, and power*. Southern Illinois University Press.

Directory of Open Access Journals. (n.d.). *About DOAJ*. Retrieved April 12, 2025, from https://www.doaj.org/about

Fischer, L., Hilton, J., Robinson, T., & Wiley, D. (2015). A multi-institutional study of the impact of open textbook adoption on the learning outcomes of post-secondary students. *Journal of Computing in Higher Education*, 27, 159–172. https://doi.org/10.1007/s12528-015-9101-x

Ford, A. Y. & Alemneh, D. G. (2022). The role of open access in equitable research curriculum and research outputs. In D. G. Alemneh (Ed.), *Global view of open access and scholarly communications* (pp. 126-147). IGI Global. https://doi.org/10.4018/978-1-7998-9805-4

Ford, A. Y., & Alemneh, D. G. (2024). Inclusive global scholarly communication: Toward a just and healthier information ecosystem. *Journal of the Association for Information Science and Technology*, 75(10), 1058-1069. https://doi.org/10.1002/asi.24899

Fuchs, C., & Sandoval, M. (2013). The diamond model of open access publishing: Why policy makers, scholars, universities, libraries, labour unions and the publishing world need to take non-commercial, non-profit open access serious. *tripleC: Communication, Capitalism & Critique*, 11(2), 428–443. https://doi.org/10.31269/triplec.v11i2.502

Ginsparg, P. (2006). As we may read. *The Journal of Neuroscience*, 26(38), 9606–9608. https://doi.org/10.1523/JNEUROSCI.3161-06.2006

Hawamdeh, S., & Madali, N. P. (2024). The emergence of new disciplines and the transformation of the library and information science profession. *Library Trends*, 72(2), 187–204. https://doi.org/10.1353/lib.2024.a941423

Hilton, J. (2016). Open educational resources and college textbook choices: A review of research on efficacy and perceptions. *Educational Technology Research and Development*, 64(4), 573–590. https://doi.org/10.1007/s11423-016-9434-9

Hilton, J. (2020). Open educational resources, student efficacy, and user perceptions: A synthesis of research published between 2015 and 2018. *Educational Technology Research and Development*, 68(3), 853–876. https://doi.org/10.1007/s11423-019-09700-4

Hjorland, B. (2025). Dewey Decimal Classification (DDC)(V. 1.0). In B. Hjorland (Ed.), *ISKO encyclopedia of knowledge organization*. https://www.isko.org/cyclo/ddc (Archived at https://web.archive.org/web/20250218061147/https://www.isko.org/cyclo/ddc)

Hodgkinson-Williams, C., & Arinto, P. B. (Eds.). (2017). *Adoption and impact of OER in the Global South*. African Minds. https://doi.org/10.5281/zenodo.1005330

Jimes, C., Karaglani, A., Petrides, L., Rios, J., Sebesta, J., & Torre, K. (2019). *Open Educational Resources (OER) in Texas Higher Education, 2019*. Digital Higher Education Consortium of Texas and Texas Higher Education Coordinating Board; Institute for the Study of Knowledge Management in Education.

Kim, M. (2007). The Creative Commons and copyright protection in the digital era: Uses of Creative Commons licenses. *Journal of Computer-Mediated Communication*, 13(1), 187-209. https://doi.org/10.1111/j.1083-6101.2007.00392.x

Ma, J., Pender, M., & Oster, M. (2024). *Trends in college pricing and student aid* 2024. College Board. Retrieved from https://research.collegeboard.org/trends/college-pricing (Archived at https://web.archive.org/web/20250325203804/https://research.collegeboard.org/trends/college-pricing)

Maculan, B. C. M. d. S. (2023). The Universal Decimal Classification in the organization of knowledge: Representing the concept of ethics. *Knowledge Organization*, 50(3), 214–226. https://doi.org/10.5771/0943-7444-2023-3-214

Piwowar, H., Priem, J., Larivière, V., Alperin, J. P., Matthias, L., Norlander, B.,, Farley, A., West, J., & Haustein, S. (2018). The state of OA: A large-scale analysis of the prevalence and impact of open access articles. *PeerJ*, 6, e4375. https://doi.org/10.7717/peerj.4375

Plan, S. (2018). *Making full and immediate Open Access a reality*. Retrieved April 2025 from https://www.coalition-s.org/why-plan-s (Archived at https://web.archive.org/web/20250312035538/https://www.coalition-s.org/why-plan-s/)

Rayward, W. B. (Ed.). (2016). *Information beyond borders: International cultural and intellectual exchange in the belle époque*. Routledge.

Salton, G., & McGill, M. J. (1983). *Introduction to modern information retrieval*. McGraw-Hill.

Schauder, D. (1994). Electronic publishing of professional articles: Attitudes of academics and implications for the scholarly communication industry. *Journal of the American Society for Information Science*, 45(2), 73–100. https://doi.org/10.1002/(SICI)1097-4571(199403)45:2%3C73::AID-ASI2%3E3.0.CO;2-5

Savolainen, R. (2007). Information behavior and information practice: Reviewing the "umbrella concepts" of information-seeking studies. *The Library Quarterly*, 77(2), 109–132. https://doi.org/10.1086/517840

Shannon, C. E. (1948). A mathematical theory of communication. *The Bell System Technical Journal*, 27(3), 379–423. https://doi.org/10.1002/j.1538-7305.1948.tb01338.x

Shannon, C. E., & Weaver, W. (1949). *The mathematical theory of communication*. University of Illinois Press.

SPARC (n.d.) *Open Education Fact Sheet*. The Scholarly Publishing & Academic Resources Coalition (SPARC). https://guides.library.unt.edu/ld.php?content_id=50669404 (Archived at https://web.archive.org/web/20240731233421/https://guides.library.unt.edu/ld.php?content_id=50669404)

Suber, P. (2012). *Open access*. MIT Press

Tenopir, C., & King, D. W. (2000). *Towards electronic journals: Realities for scientists, librarians, and publishers*. Special Libraries Association.

UNESCO. (2002). *Forum on the impact of open courseware for higher education in developing countries: Final report*. https://unesdoc.unesco.org/ark:/48223/pf0000128515

UNESCO. (n.d.). *Open educational resources* (OER). UNESCO. https://www.unesco.org/en/open-educational-resources (Archived at https://web.archive.org/web/20250303224728/https://www.unesco.org/en/open-educational-resources)

Valauskas, E. J. (1997). Waiting for Thomas Kuhn: First Monday and the evolution of electronic journals. *Journal of Electronic Publishing*, 3(1). https://doi.org/10.3998/3336451.0003.104

Valauskas, E. J. (2000). Reflections on the future of journals: The First Monday experiment. *Learned Publishing*, 13(2), 93–96. https://doi.org/10.1087/09531510050145377

Veletsianos, G., & Kimmons, R. (2016). Scholars in an increasingly open and digital world: How do education professors and students use Twitter? *The Internet and Higher Education*, 30, 1-10. http://dx.doi.org/10.1016/j.iheduc.2016.02.002

Wiley, D., Hilton, J., Ellington, S., & Hall, T. (2012). A preliminary examination of the cost savings and learning impacts of using open textbooks in middle and high school science classes. *The International Review of Research in Open and Distributed Learning*, 13(3), 262–276. https://doi.org/10.19173/irrodl.v13i3.1153

Wilson, T. D. (1996). Information Research: An international electronic journal. *Information Research*, 1(1). https://informationr.net/ir/1-1/infres.html

Wittkower, L. R., & Lo, L. S. (2020). Undergraduate student perspectives on textbook costs and implications for academic success. *Open Praxis*, 12(1), 115–130. https://doi.org/10.5944/openpraxis.12.1.1036

Copyright