From tradition to transformation:
Academic librarians as key players in online education

Received (in revised form): 12th February, 2024

Brad Garner
Digital Learning Scholar in Residence, Indiana Wesleyan University, USA

Brad Garner serves as Digital Learning Scholar in Residence at Indiana Wesleyan University. Prior to moving into higher education, his career was focused on programme and faculty development in K-12 public school settings where he worked as a classroom teacher, school psychologist and administrator. Brad is a frequent presenter at conferences and workshops and has authored several publications including Teaching Millennial Learners (2007), Teaching Adult Learners (2009), Teaching in the First-Year Seminar (2012), Creating Engaged Learners and Digital Citizens (2016), Students as Digital Content Curators (2019) and Inclusive Hospitality in Online Learning (2023). Brad also serves as editor for an electronic newsletter, eSource, for the National Resource Center for the First-Year Experience and Students in Transition at the University of South Carolina. He is a co-host, with Tiffany Snyder, of the "Digital2Learn Podcast".

Indiana Wesleyan University, 4201 S Washington St, Marion, IN 46953, USA
E-mail: brad.garner@indwes.edu

Tiffany Snyder
Director of Faculty Enrichment, Indiana Wesleyan University, USA

Tiffany Snyder is the Director of Faculty Enrichment at Indiana Wesleyan University, overseeing the professional development of both full-time and adjunct faculty for the National & Global Campus with a focus on hybrid and online programmes. Since the release of Chat GPT 3.5 in autumn 2022, Tiffany has invested in leading generative artificial intelligence (AI) training and teaching, from facilitating professional learning communities, delivering conference and university presentations, teaching graduate courses and consulting on graduate research to hosting on-site and online training for over 500 full-time and adjunct faculty. Tiffany has co-hosted the Digital2Learn podcast since 2018, launching weekly episodes featuring global scholars and exploring critical topics about technology, teaching and learning. In 2021, she earned a PhD in psychology with an emphasis on the integration of technology and learning. Her investment in academia underscores her hope to see technology and education harmonised, creating meaningful and impactful learning experiences for students and educators alike.

Indiana Wesleyan University, 4201 S Washington St, Marion, IN 46953, USA
E-mail: tiffany.snyder@indwes.edu

Jay Wise
Dean of University Libraries, Indiana Wesleyan University, USA

Jay Wise joined Indiana Wesleyan University's (IWU) National & Global Campus administrative faculty in October 2011 as an Online Campus Library Services (OCLS) Reference Librarian. He accepted the opportunity to become the second Director of Off Campus Library Services in 2019, and IWU's first Dean of University Libraries in 2023. With over two decades' experience in academic libraries, Jay is passionate about the future of libraries and leveraging the many ways academic librarians help students succeed in higher education's changing landscape. In addition to duties as Dean, Jay actively supports IWU's residential and online students, partnering with faculty and staff to provide an excellent educational experience for his stakeholders. He enjoys assisting administrators and faculty with course development, documentation and research needs, collaborating with colleagues and serving as the Seminary Librarian for Wesley Seminary at Indiana Wesleyan University. Jay holds the Master of Divinity from Wesley Seminary (2015), the Master of Library and Information Science from Kent State University (2006), and
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the Master of Arts and Bachelor of Arts in history (both with High Honours) from Ohio University’s Honors Tutorial College. To better meet his stakeholders’ needs, he began doctoral studies in organisational leadership in July 2019; as of January 2024, he is ABD.

Indiana Wesleyan University, 4201 S Washington St, Marion, IN 46953, USA
E-mail: jay.wise@indwes.edu

Rachel Walters
Online Campus Librarian, Indiana Wesleyan University, USA

Before joining Indiana Wesleyan University (IWU) as an Online Librarian for the National & Global Online Campus, Rachel completed her academic journey as an adult exclusively through online education, earning an Associate of Science from IWU in 2011 and a Bachelor of Science from IWU in business in information systems (Cum Laude) in 2014. Subsequently, she obtained a Master of Library and Information Science from San Jose State University in 2019. She transitioned to the field of academic libraries in 2015. She is currently focused on providing library services to online adult college students. In her current role, she brings her expertise in online education, support for neurodivergent students and skills in graphic and web design, content creation and marketing and communication. Guided by the principle of meeting students where they are, Rachel is devoted to helping them realize their full potential. Her role as a librarian is marked by a profound understanding of the challenges and opportunities presented by online education, coupled with a steadfast commitment to facilitating student success.

Indiana Wesleyan University, 4201 S Washington St, Marion, IN 46953, USA
E-mail: rachel.walters@indwes.edu

Abstract The role and function of academic libraries have undergone dramatic changes in the midst of a shifting digital world and a chaotic higher education landscape. Library personnel have made significant progress in staying abreast of these developments and creating new and different ways of engaging with online students and faculty. This paper summarizes current research related to the historical roots of academic libraries in higher education, the influences of digital technology (particularly generative artificial intelligence [GenAI]), connections between faculty and academic libraries, relationships between students and academic libraries, and possible courses of action as library personnel continue to make academic libraries a pivotal resource for online faculty and students.

KEYWORDS: academic libraries, student engagement, academic research, embedded librarians, artificial intelligence (AI)

INTRODUCTION
What do you remember about your campus academic library as a college student? Depending on when you enrolled in higher education, those memories could include the presence of card catalogues, rows and rows of books sorted by the Dewey Decimal System or Library of Congress Classification, and hard copies of countless professional journals across myriad academic disciplines. Perhaps you encountered microfiche machines, daily newspapers, educational films in varied formats (eg DVD, videotape, film), a map collection, encyclopaedias and telephone books from across the country. Just as important as these library staples, however, was a longstanding expectation to maintain quiet decorum and refrain from consuming any food or beverages.

To say that academic libraries have changed is a gross understatement. Visiting libraries on today’s college campuses tells an entirely different story. Many library spaces have been transformed to be more comfortable and inviting, with student-friendly additions, spaces for collaboration and group study,
comfortable seating, computer labs, printing and scanning services, an instructional media centre, classroom space for group instruction and a café serving refreshments. Moreover, academic libraries are now defined by more than simply a campus location — they have refashioned themselves as an integral aspect of the campus learning ethos.

Another factor that influenced the role and importance of academic libraries was the COVID-19 pandemic.\textsuperscript{1,2} As colleges and universities moved unceremoniously from on-campus to online courses, they were provided with 'a unique opportunity for academic libraries to plan, design and roll out a sustainable plan for establishing online education on information skills and digital literacy as a normative provision, focusing on creating more impactful ways of learning for students and building online learning communities'.\textsuperscript{3} Part of that opportunity hinged on the new level of dependence felt by students and faculty to engage with the online resources available through their library. This expanded level of use and awareness will have an ongoing impact on academic libraries and their role in engaging with campus partners to design and deliver instructional supports for students.

These winds of change have also included creating new ways to interact with and serve online students. These students often have differing levels of availability compared to students on a residential campus. Additionally, they often have different needs and perspectives, access information in different ways, and have schedules that necessitate the availability of remote support and assistance outside of regular working hours.

Ongoing and significant changes are part of contemporary academic library cultures, driven by a need to be integral to on-site and online higher education learning experiences. Therefore, examining available research and practices guiding and directing decision making on the roles, functions and structures of today's academic libraries is essential.

\section*{The Historical Roots of Academic Libraries}

Academic libraries date back centuries. And, as we might guess, many universities are continually vying for the title of the 'oldest' academic library in the world. It has been suggested that Al-Qarawiyyin Library in Fez, Morocco, founded in 859 CE, is the oldest continually operating university library. Interestingly, it was founded by a woman, Fatima Al-Fihyari, who used her inherited wealth to establish the university.\textsuperscript{4} Other academic libraries claiming a longevity title include Oxford University's Merton College Library, founded in 1276, Germany's Heidelberg University Library (1536), Oxford's Bodleian Library (1601), the Harvard University Library in the United States (1638), and Prague's Theological Hall of Strahov Library (1671). These libraries often couch their longevity with qualifiers such as 'oldest university library in Europe' or 'library with the greatest active longevity'.

Putting aside claims of being the oldest or best library, it is no exaggeration to say that academic libraries play a vital role in students' lives and colleges and universities’ operational lives. According to the International Federation of Library Associations and Institutions,\textsuperscript{5} there are 86,197 academic libraries worldwide, and 65,315 have Internet access. These academic libraries employ 358,080 people, boast 192.9 million registered users, receive 805.7 million individual visits, and loan 863.5 million physical and over 12 million electronic items. By any standard, this data represents a remarkable investment in library services. Making libraries the best they can be is essential to student, faculty, and institutional success.

\section*{Academic Libraries in Disruptive Times}

Understanding academic libraries' historical roots involves recognising the evolution of their physical presence and functions.
Initially, libraries were repositories of handwritten manuscripts, often limited to elite institutions. Over centuries, the advent of the printing press democratised access to knowledge, leading to the proliferation of libraries across educational institutions. With the Industrial Revolution, academic libraries shifted from exclusive collections to public accessibility. In recent decades, the digital age has transformed libraries into information hubs and community spaces, breaking down physical barriers and offering virtual and physical access to an extensive array of resources and professional personnel.

Recognising this historical trajectory provides a foundation for comprehending the dynamic nature of academic libraries.

One of the most significant challenges and motivators for academic libraries to embrace change has been the influence of digital technology. Banks proposed that digital technology has made it necessary for academic libraries to 'think outside the book'. Tappenbeck and Sühl-Strohmenger summarised how librarians have adapted to a new world of serving their customers.

Today, we know that digitisation has not superseded libraries or put librarians out of work. On the contrary, it has set in motion a profound transformation process in which libraries have not simply adapted but reinvented themselves: public libraries have embraced technologies such as three-dimensional (3D) printers, virtual reality (VR) glasses and gaming tools, while academic libraries operate repositories of digital publications and research data and offer consultations to their users in the form of meetings or chat.

These authors continued by praising academic libraries and librarians and the level at which they have adapted to assume new and expanded roles and functions.

Saunders observed that library personnel are pressed to keep up with the latest developments in library, information science and higher education. These changes, in turn, affect faculty and students’ perceptions and expectations. Bell likewise observed the level at which libraries have been required to adapt to the disruptions of the higher education landscape. The disruptive forces identified primarily relate to the varied pathways that can be followed in pursuit of a college degree. Bell referred to this pathway as ‘Alt-Higher Education’, characterised by attendance at multiple institutions, taking from 3–7 years, in a nonlinear and unpredictable manner.

Some of the elements included in this category include:

- The completion of community college coursework before enrolling in a four-year programme.
- Part-time enrolment.
- Reverse transfers (ie ‘awarding associate degrees to students who have transferred in pursuit of a bachelor’s degree before completing the requirements for an associate degree at a two-year institution’).
- Competency-based education.
- Open educational resources (OER).
- Massive online open courses (MOOC) such as Coursera, Udacity and EdX.
- College swirl (ie undergraduates who moved among institutions before earning a bachelor’s degree).
- Self-paced courses for college credit (eg Sofia, Western Governor’s University).

Bell contrasted this range of options to ‘traditional higher education’, where students enrol in college and follow a prescribed four-year path to a degree. These authors described the traditional model as characterised by attendance at a single institution over a 4–5-year period in a linear fashion. Library personnel, as centralised, institutional-level resources, must remain aware of student and faculty learning needs, regardless of the path chosen toward completing a degree programme.

Disruptive forces, such as Alt-Higher Education, have significantly affected
academic libraries, necessitating physical and digital infrastructure adaptation. The emergence of alternative pathways to higher education, characterised by flexible timelines and varied institutional affiliations, challenges traditional library models.

Consequently, libraries are reconfiguring their physical spaces to accommodate diverse learning styles and fostering digital innovations to support remote and non-linear learning journeys. The ability to integrate technology (including generative AI [GenAI] tools), virtual resources and collaborative spaces reflects how academic libraries are evolving to meet the demands of a rapidly changing educational landscape.

**FACULTY AND LIBRARY CONNECTIONS**

Faculty and academic libraries play pivotal roles in fostering rich learning environments, especially in online education contexts. Faculty–library collaborations have been instrumental in developing innovative information literacy approaches. For instance, joint efforts in creating assignments that require students to engage with professional literature enhance research skills and strengthen connections between academic content and library resources. Successful case studies showcase how faculty–librarian partnerships contribute to more holistic and compelling learning experiences, irrespective of the learning modality.

Libraries’ relative importance and value to colleges and universities are primarily affected by how faculty and students value libraries’ contributions to learning. Consider, for example, circumstances where faculty make course-based assignments that require students to use professional literature (eg literature reviews, policy analyses, case studies). Given those assignments, online students have a choice to make (see Figure 1).

![Figure 1: Connections between faculty assignments and online student choices regarding the use of the academic library](image-url)
This model incorporates several key elements that faculty can incorporate to enhance student and academic library connections:

1. Faculty can create assignments that require students to actively use the professional literature and other resources as an integral part of their research. For example, students could be required to include those sources in their final product.

2. Given the specifications of the assigned task, students can:
   a. use resources available through their academic library (eg research librarians, academic databases, grey literature, eBooks, conference proceedings);
   b. use the Internet to gather resources through searches or with the assistance of websites (eg browser-based searches, Google Scholar, ChatGPT or another GenAI app);
   c. use resources available through their academic library and Internet resources; and
   d. schedule in-person or virtual research appointments to engage professional librarians, practise and refine students’ search skills, evaluate search results’ relevance and utility, and learn how to properly cite and document professional sources used in the research process.

Colón-Aguirre\textsuperscript{17} compared the varied aspects of student use related to Google Scholar and academic library database systems. Students perceived Google Scholar as more straightforward and having better system quality, resulting in higher user satisfaction. Academic library database systems were perceived to be more comprehensive. Interestingly, the subjects in this study did not voice overwhelming support for using either of these tools exclusively. They concluded: ‘In summary, it is important and necessary to regard each resource not as a competitor but as a good model to learn from for improvement, especially since both are used in similar ways but have different aspects that are preferred by users.’ These authors also reported that these results were drawn from students attending Research One institutions. They speculated that the results might differ in other colleges and universities.

A study by Joo and Choi\textsuperscript{18} revealed that accessibility and ease of use were significant in students’ decision making about using their academic library’s online resources. Students also expressed awareness of source credibility, the format of the online search results, the currency of the search results and the span of coverage as factors they consider in choosing to use online library resources. These authors suggested that in-class partnerships with faculty to teach students how to maximise the results from their online searches of academic databases would be highly beneficial for faculty and students.

Gabbay and Shoham\textsuperscript{19} analysed the perceptions of faculty and librarians in relation to the relative importance of various library services. On the research side, faculty and librarians place a high value on accessing and effectively using electronic databases, printed books and journals, and purchasing relevant print and electronic materials. Librarians, however, tended to overvalue, when compared with faculty, a comfortable and quiet library environment, updating and renewing collections, advanced information technologies, searching by an information specialist, and information about conferences and seminars. On the academic teaching side, faculty and librarians valued access to electronic databases, printed books and journals. Beyond that, librarians valued their services (eg purchasing printed/electronic materials, interlibrary loans, updating/renewing collections, advanced information technologies, and assisting in preparing course materials) more than faculty. Gabbay and Shoham concluded: ‘this study indicates that librarians should be more aware of the faculty members’ expectations of them.
— particularly in the research aspect — and should develop skills to assist faculty members not only in teaching but also in research.’

Librarians have frequently observed that course writers and subject matter experts (SMEs) often assume the feasibility of assignments using library resources without undertaking the requisite research to complete the proposed activities. This presumption can lead to a misalignment between the conception of course assignments and the practical utility and accessibility of library resources. A critical strategy to bridge this gap and promote an effective library–faculty partnership involves integrating librarians into the course creation process. This approach serves a dual purpose: first, to ensure comprehensive utilisation of library materials across courses; secondly, verifying assignments align with course objectives and correspond with course writers’ and SMEs’ expectations. Such collaborative efforts amplify library resources’ relevance and practical utility while contributing to a compelling student experience.

STUDENT SUCCESS AND ACADEMIC LIBRARIES

Student success is a vital concern when discussing the impact of academic libraries. In line with this concern is the reality that ever-increasing numbers of students are enrolling in online courses. Because these students are often geographically distant from their campuses, the availability of accessible and helpful library services contributes significantly to student success opportunities.

Brown and Malenfant\(^20\) analysed the results of over 200 campus-based assessment projects documenting the relationship between active use of academic library resources and student success. They identified five key findings:

- Students benefit from information literacy instruction during the early stages of their college careers.
- Students who use the library achieve higher levels of academic success.
- Collaborative ventures between the academic library and other campus units enhance student learning.
- Instruction related to information literacy enhances achievement pertaining to general education outcomes.
- Library research consultations (eg structured conversations between students and librarians) have a positive impact on student learning.

These findings highlight the value of creating a solid bridge between the academic library and schools, departments and programmes across the campus. This facilitates a unified approach to teaching and learning. As a caution, however, it is essential to remember the differences between online and campus-based learners. Walking into a library or academic department can be straightforward for residential learners. For online learners, however, ease of using these resources requires careful planning and execution.

In online education, academic libraries address the unique challenges online students face in accessing resources. Challenges such as geographical distance and varying schedules require libraries to provide remote support and assistance outside business hours. To tackle these challenges, academic libraries are implementing virtual services, such as online chat support, remote consultations and digitised resources, including database and software tutorials and personalised search assistance. Case studies highlighting how libraries have successfully facilitated student success by tailoring services to the needs of online learners serve as examples of the crucial role libraries play in supporting diverse student populations.\(^21\)

WHAT IS A LIBRARIAN TO DO?

Available research identifies the benefits of connecting students with academic libraries. The level at which this is occurring varies
across institutions; however, several trends can guide library personnel in deciding what is most beneficial to students, faculties and institutions. These decisions primarily depend on college and university characteristics and the resources and personnel available for deployment.

Wilson, in an analysis of what might lie ahead for academic libraries, cited Matthews with encouraging words for the future:

‘The next several decades will demand leadership that is fluent in change literacy and strategic foresight. As guiding libraries is becoming an increasingly challenging undertaking, embracing the future rather than fearing it enables us to have a better chance at success no matter what disorienting or dazzling change awaits.’

To embrace the future, consider the following examples of how academic libraries can proactively respond to campus-wide issues to serve students and faculty.

**Embedded librarians**

Embedded librarianship is critical to enhancing students’ academic experience. The academic community’s consensus is that embedded librarians are valuable educational resources. Their role extends beyond traditional library boundaries, bringing library services directly into digital environments and facilitating greater student engagement with research resources and information literacy.

When course assignments do not explicitly require student interaction with an embedded librarian, however, the likelihood of such interaction tends to be minimal or non-existent. This suggests a need for more intentional integration of the librarian’s role into the coursework. Assigning a point value or some credit for interacting with embedded librarians can significantly amplify student engagement. Requiring students to meet with their embedded librarians signals the importance of these interactions and brings library resources to the forefront of the learning process.

**Librarians as experts**

In academic libraries’ evolving landscapes, librarians must position themselves as content experts and integral contributors to the educational process. This positioning not only enhances the perceptions of librarians as key academic partners but also maximises the impact of library resources and services. In this context, we highlight several best practices for faculty–librarian collaboration.

**Faculty–librarian collaboration projects**

One of the most effective ways to demonstrate librarians’ expertise is through faculty partnerships for research projects. Academic librarians offer specialised knowledge in information sourcing, management, research assistance and content curation. These invaluable skills facilitate mutually beneficial research, co-authored publications, joint conference presentations and other scholarly projects, further elevating the librarian’s status as an academic expert.

**Faculty research spotlights**

Featuring faculty research prominently on library platforms, such as websites or social media channels, and linking faculty work to relevant library resources demonstrates how the library supports and enhances academic success. This approach recognises and promotes faculty accomplishments while strategically showcasing the library’s integral role in the research process. Such spotlights can take various forms, including interviews, articles or interactive features, and serve as a testament to the symbiotic relationship between faculty research endeavours and library resources.
Curated faculty resource newsletters

Regular communication through visually appealing and content-rich newsletters is a powerful tool for librarians to assert their expertise. Tailoring newsletters to specific departments or courses boosts their relevance and engagement. By including new resources, research tips and showcasing librarian expertise, these newsletters can become a vital resource for faculty and students alike. They serve as information conduits and platforms for librarians to demonstrate their knowledge and skills in effectively curating and managing academic resources.

Incorporating these strategies into libraries’ outreach and engagement efforts positions librarians as information providers, academic experts and essential partners in institutions’ scholarly endeavours. These outreach approaches align with best practices in academic librarianship, fostering a more integrated and collaborative educational environment.

Tackling artificial intelligence

Artificial intelligence (AI) is among higher education’s most highly discussed topics today. These conversations are generally filled with ominous warnings about how this emerging technology will negatively affect the future of learning. Faculty frequently couch these arguments with concerns that AI will assist students in creating assignments artificially based on student-generated prompts of varying quality and comprehensiveness. Numerous stories of Bard, ChatGPT and similar GenAI applications making up citations (ie AI hallucinations) have only added to instructors’ AI angst.

These scenarios provide faculty and librarians excellent opportunities to collaboratively create policy solutions. Coffey observed: ‘Librarians have often stood at the precipice of massive changes in information technology: the dawn of the fax machine, the internet, Wikipedia, and now the emergence of generative artificial intelligence, which has been creeping its way into classrooms.’ AI in the classroom has allowed librarians to contribute to this ongoing narrative by engaging in cross-campus collaboration. Librarians can leverage these discussions to actively shape institutions’ AI policies and practices, acknowledging the value of AI apps while promoting their ethical use. In a recent editorial on academic library AI use, Vogus touted Chat GPT and related tools for collection development, multilingual 24/7 reference service, and helping users discover previously unknown literature. Two years earlier, Cox proposed merging AI’s unparalleled retrieval and knowledge creation abilities with librarians’ understanding of user needs: ‘AI supported search does not remove the need for information literacy.’

This partnership is not without risks, but holds tremendous potential for integrating AI into education toward positive and responsible ends. In the contemporary academic landscape, librarians’ roles in navigating and integrating AI into research and educational practices are crucial. As AI technologies continue to evolve and permeate all aspects of academic life, from marketing to microbiology, librarians are uniquely positioned to guide and educate students and faculty to use AI tools appropriately and ethically. Academic libraries’ stances toward AI in education should be one of informed embrace and strategic utilisation, recognising the technology’s potential while being cognisant of its limitations and ethical implications.

The increasing integration of AI in higher education demands a proactive approach from librarians. They are pivotal in shaping how AI tools such as OpenAI’s ChatGPT are utilised in academic settings. Cox underscored this point: ‘AI competence is likely to be added as a necessary skill for students to learn.’ This involves not just understanding the capabilities of these tools
but also addressing ethical considerations, such as data privacy and the potential for AI to perpetuate biases, and ensuring individuals and organisations handle user information appropriately without exploiting data mining discoveries. Librarians can lead forums and discussions, bringing together faculty, IT experts and students to explore AI’s benefits and challenges in education collaboratively. For example, they could organise a seminar series on the implications of AI in academic research, featuring case studies of AI use in different disciplines.

**Embracing and utilising AI technology**

AI is an integral part of the future of information science and academia. Librarians should embrace this technology and explore ways to incorporate AI tools into library services and resources. This might include using AI for cataloguing and data analysis or enhancing user search experiences.

In embracing AI, librarians have the opportunity to revolutionise traditional library functions. For instance, AI can be applied in predictive analytics to anticipate and meet user needs, suggesting resources based on user behaviour patterns. AI can also automate mundane tasks, such as cataloguing, using image recognition software to sort and classify materials. Furthermore, AI can enhance digital archiving, employing algorithms to digitise, categorise and preserve historical documents and artefacts, making them more accessible to researchers and the public.

**Prompt generation assistance**

Librarians can assist users in generating effective prompts for AI tools to enhance critical thinking and writing skills. Effective prompt generation is a skill that can significantly benefit from librarians’ expertise. For instance, librarians can conduct workshops to teach students how to utilise AI for research effectively. This might include framing research questions that yield comprehensive and relevant AI responses. For example, transforming a broad question like ‘Discuss the effects of global warming’ into a more focused prompt such as ‘Analyse the impact of global warming on Arctic marine ecosystems’ can lead to more precise and valuable AI-generated content (see Figure 2).

**Evaluating AI-generated sources**

Teach users how to locate and critically evaluate sources AI programme produce. This includes discerning credible information from potential misinformation or biases in AI outputs. Librarians can guide students in critically assessing the reliability of sources generated by AI. This might involve comparing AI-sourced information with scholarly databases and teaching students to identify potential biases or inaccuracies in AI outputs. Evaluating an AI-generated summary of a study or article using Elicit, Explainpaper or a similar tool against the original publication can be a practical exercise in discerning the nuances and complexities that AI might miss or misinterpret.

**Addressing AI hallucinations and counterfeit sources**

Educate users about the possibility of AI ‘hallucinations’ or generating false information and how to identify and address such issues. AI-generated ‘hallucinations’ pose significant challenges in academic research. Librarians can create tutorials or resource guides to educate users about these pitfalls. Indiana Wesleyan University (IWU) Libraries has seen a substantial increase in students requesting articles to read or APA citation help for
articles that do not exist. ChatGPT4 is now connected to the Internet and can provide accurate sources; however, it currently does not know if a source is scholarly. Through our testing, ChatGPT versions not connected to the Internet create counterfeit sources 95–100 per cent of the time (see Figure 3).

**AI as augmentation, not sole creator**
Emphasise using AI as a tool to augment content creation rather than as the primary or sole creator. Librarians can demonstrate how AI can outline a literature review by generating an initial summary of existing research using Semantic Scholar, PopAI or a similar tool. Students can critically analyse and expand upon this AI output, integrating their interpretations and additional research findings. This approach maintains the integrity and originality of academic work.

**AI as a research assistant, not the researcher**
Position AI as a supportive tool in the research process, not a replacement for learners’ research efforts. The goal is to...
use AI for assistance, not as a shortcut. In redefining AI as a research tool, librarians can showcase how AI can assist in research with visual literature mapping and connect students to relevant articles using Litmaps, ResearchRabbit, Connected Papers and other literature mapping tools.

**Summarising and outlining with AI**
Librarians can guide students using AI to summarise or outline articles, followed by the students’ critical evaluation of the article content. This exercise can develop skills in comparison, contrast and accuracy assessment. By adopting these strategies, librarians can effectively guide their academic communities in the responsible use of AI, ensuring that these powerful tools are leveraged to enhance learning and research while upholding academic integrity and ethical standards. This proactive approach positions librarians as essential navigators and educators in the evolving digital information landscape.

**Enhanced cataloguing and metadata management**
AI can significantly improve the efficiency of cataloguing processes. By employing...
machine learning algorithms, libraries can automate the classification and tagging of vast collections, reducing human error and freeing up librarians’ time for more complex tasks. AI can also help identify and correct inconsistencies in existing catalogues.28

Data analysis for improved services
AI tools can analyse library usage patterns, helping librarians understand which resources are most valuable to their users. This insight can guide decisions on acquisitions, resource allocation and the development of personalised services. Furthermore, AI can help predict trends, enabling libraries to stay ahead of users’ needs.

Enhancing user search experience
AI can transform how users find information. Through natural language processing (NLP) and machine learning (ML), search systems can understand queries in a more human-like manner, offering more relevant and precise results. This includes handling complex queries and offering suggestions based on context, improving user satisfaction and engagement. In addition, AI platforms like Yewno Discovery enable users to search and view catalogues in a visual, more creative fashion.29

Virtual assistants and chatbots
Libraries can implement AI-powered chatbots and virtual assistants to provide users with 24/7 support. These tools can respond to frequently asked questions, guide users through digital resources and even assist with research inquiries, making library services more accessible.30

Recommendation systems
By leveraging AI, libraries can develop sophisticated recommendation systems that suggest books, articles and other resources based on users’ past behaviour and preferences. This personalisation, similar to what users experience on streaming platforms or online shopping, enhances the discovery process, making it easier for users to find content that interests them.

Accessibility enhancements
AI can also make library resources more accessible to people with disabilities. For example, AI-powered tools can automatically generate descriptive audio for videos or translate text into various languages, including sign language, improving inclusivity.

Preservation and archiving
AI can assist in digitising and preserving historical documents and rare collections. Through image recognition and text analysis, AI can automate the process of digitising, categorising and annotating archival materials, ensuring their longevity and accessibility for future generations.

By adopting these strategies, librarians can effectively guide their communities in the responsible use of AI, ensuring that these powerful tools are leveraged to enhance learning and research while upholding academic integrity and ethical standards. This proactive approach positions librarians as essential navigators and educators in the evolving digital information landscape.

MAXIMISING THE USE OF OPEN EDUCATIONAL AND OTHER LIBRARY RESOURCES
In tandem with addressing the challenges posed by AI, academic librarians play a pivotal role in another transformative area: maximising the use of open educational resources (OER) and other library resources such as e-books, book chapters, journal articles and videos. Many colleges and universities are converting courses to include OER, to lower student costs. OERs are typically freely available, reducing or eliminating the cost of textbooks and other learning materials. Further, many OER texts permit users to integrate different sources within digital textbooks. These
OER products allow faculty and course developers to supplement texts with relevant and editable database articles, infographics, videos and other media, providing immersive learning experiences. This decision often necessitates replacing current textbooks and other learning tools.\(^\text{31-33}\)

At IWU, librarians create ‘Course Resource Guides’ highlighting available library resources, complete with descriptions of each suggested source. Guides include APA citation information and permalinks or embed code to add items directly to the course syllabus, OER or assignment within the university’s learning management system (LMS). Library personnel collaborate with faculty and instructional designers to ensure that selected content meets course objectives and established quality criteria and that chosen resources will be continuously available. This collaborative partnership contributes to cost-effective education and strengthens the relationship between faculty and library personnel, underscoring the symbiotic nature of their roles in supporting learning initiatives.

**WRITING AND CITING**

A common concern that faculty expresses is how many students are unprepared to use prescribed writing styles and citation formats.\(^\text{34-36}\) Recognising the importance of these skills, librarians can provide invaluable resources for students. These materials can guide online students through composing a research document that aligns with the publication guide chosen by their institution or academic department (eg creating a title page, in-text citations and bibliographic formats). To make these resources relevant to online students, they must be shared in formats that make them readily available (eg videos, step-by-step directions, help desk assistance and always-available online citation help). This proactive support enhances students’ writing proficiency and ensures that the resources are tailored to the unique needs of online learners, thereby promoting inclusivity and accessibility.

**COPYRIGHT AWARENESS AND COURSE DESIGN**

There has been a flurry of activity surrounding videos, interactive elements and graphics to enhance online courses’ quality and engagement levels. This effort is essential to creating online learning experiences that invite students into the learning process. At the same time, it is critically important to verify that the content selected by faculty and instructional designers complies with prevailing rules regarding copyright.\(^\text{37}\)

As information stewards, librarians deeply understand copyright laws and licensing agreements. This enables them to guide faculty in the ethical use of materials. They assist in identifying and accessing resources that adhere to copyright regulations, allowing educators to create content-rich courses without infringing on intellectual property rights. Once again, these collaborative efforts ensure students access engaging materials while recognising content creators’ rights and remaining compliant with current copyright law.

**CONCLUSION**

Twenty-first-century academic librarians are pivotal guides for innovation in online programmes. Beyond traditional roles of curating and organising information, librarians facilitate technological advancements and educational innovation. They actively engage with emerging technologies, digital resources and information literacy tools, ensuring that students and faculty are equipped to navigate an ever-evolving information landscape. Academic librarians collaborate with faculty to integrate library resources and new technologies into teaching and research and offer expertise in digital scholarship, data management, GenAI
tools and open educational resources. They catalyse innovation by fostering a culture of experimentation, continuous learning and collaboration within the academic community. Librarians contribute significantly to developing cutting-edge learning environments, helping institutions stay at the forefront of 21st-century educational innovation.

As a watchword for the future, consider this observation by Lankes:58 ‘Bad libraries build collections, good libraries build services, great libraries build communities.’ This triumvirate of learning communities, comprising students, faculty and library personnel, exemplifies the powerful synergy that propels educational institutions to the forefront of innovation and excellence. As architects of this synergy, academic librarians are instrumental in shaping the future of learning for future generations.

References
From tradition to transformation: Academic librarians as key players in online education


