Continuous Professional Development (CPD) Initiatives for Academic Librarians in the Fifth Industrial Revolution: A Systematic Review

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Abstract

In light of the extensive emergence of disruptive technologies that catalyze the fifth industrial revolution (5IR), academic libraries have experienced a significant transformation, which has concurrently altered the responsibilities of academic librarians. With the advent of disruptive technologies, library and information services are now accessible globally, contingent upon a user's connection to the Internet of Things. To remain pertinent within the context of 5IR, it is imperative for academic librarians to enhance their skillsets. This study posits that such skill enhancement can be achieved through continuous professional development. CPD initiatives encompass various formats, including workshops, both internal and external training programs, conferences, job shadowing, mentoring, and focus groups. The methodological approach employed in this paper is an analytical review of the literature pertinent to CPD initiatives for academic librarians in the context of the fifth industrial revolution. To achieve these aims, the study employed a Systematic Literature Review (SLR) methodology. This involved a structured and transparent process of identifying, selecting, and synthesizing peer-reviewed literature relevant to CPD in the context of Industry 5.0. Inclusion criteria focused on studies published between 2015 and 2024, specifically addressing CPD in academic libraries and technological competencies. After applying rigorous screening and eligibility criteria, a total of 42 studies were selected from an initial pool of 146 academic sources. The paper dwell on continuous professional development (CPD) initiatives as a mechanism for academic librarians to engage with the fifth industrial revolution, key areas of CPD for academic librarians in industry 5.0, CPD initiatives for academic librarians in the fifth industrial revolution, types of knowledge and skills acquired by academic librarians in continuous professional development (CPD) in the era of fifth industrial revolution, benefits for academic librarians in continuous professional development (CPD) in the fifth industrial revolution, challenges of academic librarians in continuous professional development (CPD) to engage with the fifth industrial revolution, conclusion and recommendations were made on how to optimize the benefits of CPD for academic librarians in the 5IR

Key terms: Academic librarians; Fifth industrial revolution; Continuing professional development; Disruptive technologies; Evolving roles of librarians; Library services.

Introduction

The world is undergoing rapid technological transformation, often referred to as the Fifth Industrial Revolution (5IR), which is distinguished by the convergence of advanced technologies such as artificial intelligence (AI), the Internet of Things (IoT), big data, automation, and robotics. This new revolution is reshaping industries, including education and information services, where academic librarians play a critical role in facilitating access to knowledge and supporting the learning and research processes in academic settings (Bawden & Robinson, 2020). As digital tools and technologies continue to evolve, academic librarians face the challenge of staying relevant and competitive by adapting to new demands and acquiring new competencies that are essential for the 5IR.

Continuous Professional Development (CPD) is a strategic mechanism through which professionals, including librarians, maintain and enhance their skills, knowledge, and competencies in their respective fields (Haddow & Parker, 2021). For academic librarians, CPD initiatives are particularly crucial as they provide opportunities to engage with and utilize emerging technologies, foster innovation, and equip them to respond to the dynamic demands of the academic and information landscape in the 5IR (JISC, 2020). CPD enables academic librarians to stay up-to-date with digital literacy, information management, data curation, and the evolving role of libraries as knowledge hubs in the digital age. The rapid advancement of digital technologies in the 5IR presents opportunities and challenges for academic libraries. With the rise of AI, machine learning, and data science, librarians must not only ensure that they can navigate and use new tools but also understand their implications on privacy, security, and ethical concerns (Liu & Huang, 2019). Furthermore, CPD initiatives can help librarians better integrate these technologies into the services they offer, including virtual reference services, digital archives, and collaborative research platforms. Through CPD, academic librarians can also strengthen their capacity for data analysis, information retrieval, and user-centered design, all of which are critical in the modern academic ecosystem (Sweeney, 2022).

Given the speed of technological change, CPD initiatives must be tailored to address the specific needs and challenges posed by the 5IR. In this context, CPD programs could range from workshops on AI and data analytics, to professional networks that share best practices in utilizing emerging technologies within libraries (Neal, 2021). Moreover, these initiatives should foster a culture of lifelong learning and collaboration to ensure that academic librarians remain equipped to lead in an increasingly technology-

driven world. As academic libraries evolve into hubs for digital learning, research, and collaboration, CPD becomes central to enabling librarians to meet the demands of the 5IR and enhance their role in supporting academic success.

Objective

The objectives of this documentary research are to:

1. Discuss Continuous Professional Development (CPD) Initiatives as a Mechanism for Academic Librarians to Engage with the Fifth Industrial Revolution
2. Identify key Areas of CPD for Academic Librarians in Industry 5.0
3. CPD Initiatives for Academic Librarians in the Fifth Industrial Revolution
4. Examine the types of Knowledge and Skills Acquired by Academic Librarians in Continuous Professional Development (CPD) in the Era of Fifth Industrial Revolution
5. Determine the benefits for Academic Librarians in Continuous Professional Development (CPD) in the Fifth Industrial Revolution
6. Identify the challenges of Academic Librarians in Continuous Professional Development (CPD) to Engage with the Fifth Industrial Revolution
7. Make recommendations to overcome the identified challenges

Methodology

A **Systematic Literature Review (SLR)** is a rigorous and transparent method of identifying, evaluating, and synthesizing existing research relevant to a specific topic or set of objectives (Kitchenham & Charters, 2007). It involves clearly defined search strategies, inclusion and exclusion criteria, and an objective process for screening and selecting studies. The aim is to minimize bias and provide a replicable foundation for evidence-based conclusions.

This review adopted the SLR approach to explore **Continuous Professional Development (CPD) initiatives as a mechanism for academic librarians to engage with the Fifth Industrial Revolution (5IR)**, based on well-defined objectives. The process ensured that the reviewed studies directly contributed to answering questions related to required competencies, key CPD areas, impact on professional performance, and institutional support frameworks.

Inclusion and Exclusion Criteria

To ensure the relevance and quality of selected literature, the following inclusion and exclusion criteria were applied:

Inclusion Criteria:

- Peer-reviewed journal articles, conference papers, and academic reports.
- Publications from **2015 to 2024** to capture contemporary CPD practices in light of Industry 4.0 and transitions into 5IR.
- Studies focused on **academic librarians or CPD in higher education library contexts.**
- Literature addressing **digital skills, AI, leadership, emerging technologies, or user-centered library services.**
- English language publications.

Exclusion Criteria:

- Articles focusing solely on school or public libraries.
- Studies published before 2015 unless cited for foundational context.
- Non-academic blogs, opinion pieces, or media reports lacking empirical evidence.
- Literature unrelated to CPD or not aligned with the evolving demands of the Fifth Industrial Revolution.

Search Strategy and Article Selection

Relevant studies were identified using key databases such as Scopus, Web of Science, Google Scholar, and ERIC. Search terms included combinations of: "continuous professional development", "academic librarians", "Fifth Industrial Revolution", "digital skills", "AI in libraries", and "CPD in higher education". An initial pool of **146 studies** was retrieved. After applying inclusion and exclusion criteria through title and abstract screening, and a full-text assessment, **42 studies** were selected for final review and synthesis.

Review of Literature

The Fifth Industrial Revolution (5IR) emphasizes the synergy between humans and advanced technologies such as artificial intelligence (AI), robotics, and the Internet of Things (IoT), focusing on human-centric innovation (Schwab, 2019). For academic librarians, this means acquiring new competencies that merge digital literacy with ethical and user-centered service delivery. Core skills include data analytics, AI integration, digital content curation, and emotional intelligence (Gómez-Hernández & Pasadas Ureña, 2022). CPD initiatives must be aligned with these skill requirements to ensure librarians remain relevant and effective in facilitating research, teaching, and learning.

Academic libraries globally have implemented CPD strategies such as workshops, short courses, mentorships, online training, and certifications to help librarians upskill. These programs often cover topics like digital scholarship, research data management, open science, and AI tools for information services

(Ocholla & Shongwe, 2021). Notably, MOOCs (Massive Open Online Courses) and institutional collaborations with tech companies have become important CPD channels. For instance, libraries in South Africa and Nigeria have partnered with organizations like EIFL and UNESCO to offer digital skills training for staff (Okike, 2020).

CPD has been shown to significantly improve librarians' ability to provide innovative, tech-enabled services. Enhanced confidence in using digital tools, improved research support, and proactive user engagement are among the outcomes of sustained professional development (Ifijeh & Yusuf, 2020). Moreover, librarians who engage in continuous learning are more likely to contribute to institutional goals such as digital transformation, research excellence, and student success (Onyancha, 2022). Evaluation metrics for CPD effectiveness often include job performance assessments, service quality indices, and user satisfaction surveys.

Institutional support — through funding, time allocation, infrastructure, and policy frameworks — is essential for effective CPD. Many higher education institutions now recognize CPD as part of performance management and promotion systems (Popoola & Zaid, 2023). National library associations and governing bodies like IFLA have also provided guidelines and toolkits for CPD in the digital age. However, challenges remain in terms of inconsistent policy implementation, limited access in resource-constrained regions, and lack of strategic planning (Aina, 2021).

Table 1: Thematic Summary of CPD Literature in Academic Librarianship (2015–2025)

Theme	Key Focus	No. of Studies (n=42)	Representative Studies	Findings Summary
1. Digital Literacy and ICT Skills	Training in information technology, digital tools, online platforms	14	Fatoki (2021), Ani & Edem (2020)	Emphasis on training librarians in digital databases, open access systems, and emerging technologies.
2. Open Access & OER Advocacy	Librarians' roles in promoting and managing OA and OER resources	10	Isah (2018), Eze & Ikegwuruka (2020)	Libraries lack institutional policies; advocacy remains limited; staff need more confidence and tools.
3. Leadership and Management	CPD for managerial, leadership, and communication skills	6	Nnadozie & Nnadozie (2021)	Limited participation in leadership CPD; institutions overlook soft skill development.
4. Research Support & Data Services	Supporting scholarly communication, research impact, data curation	5	Ateneme & Adetimirin (2022)	Librarians need advanced training in research tools, bibliometrics, and data management.
5. Institutional Repository Use	Development and librarian involvement in repository creation and use	7	Ani & Edem (2020), Isah (2018)	Repositories underutilized due to poor sensitization and low faculty involvement.
6. Policy and Institutional Support	CPD funding, policy formulation, and top-down support	8	Nnadozie & Nnadozie (2021), Eze (2020)	Inadequate funding and weak institutional frameworks limit sustainable CPD implementation.
7. CPD Delivery Models	Face-to-face, blended, and online CPD approaches	5	Multiple case-based studies	Shift toward flexible, online CPD, but effectiveness varies depending on access and design quality.

Continuous Professional Development (CPD) Initiatives as a Mechanism for Academic Librarians to Engage with the Fifth Industrial Revolution

The Fifth Industrial Revolution (Industry 5.0) is transforming academic libraries, presenting opportunities and challenges. Continuous Professional Development (CPD) initiatives are crucial for academic librarians to adapt to new technologies and maintain high-quality service delivery. These programs equip librarians with technical expertise and critical thinking skills to manage emerging technologies, adapt workflows, and foster innovation. As academic libraries become leaders in knowledge management, CPD programs are essential for staying informed about technology, data management, and digital resource curation.

Key Areas of CPD for Academic Librarians in Industry 5.0

Continuous Professional Development (CPD) initiatives play a crucial role in ensuring that librarians are prepared to leverage these technologies to enhance their services and support academic communities. By focusing on areas such as AI, data analytics, blockchain, user-centered services, and collaboration, CPD programs will enable librarians to adapt to the changing landscape, foster innovation, and continue playing an essential role in knowledge management and information access in the digital age according to: (Kumar & Sinha, 2022; Wang & Lee, 2020; Oliver, 2021; Bhatti, 2021; O'Connor & Ward, 2022 and Singh, 2022) are.

1. **Digital Literacy and Technology Skills:** In the Fifth Industrial Revolution, librarians need to be proficient in various technologies like AI, big data analytics, cloud computing, IoT, and blockchain. CPD programs should focus on developing competencies in these areas, ensuring data management and privacy, and understanding ethical implications for handling sensitive information.

2. **Collaboration and Knowledge Sharing:** CPD initiatives should promote collaboration and knowledge sharing skills, focusing on human-machine collaboration in Industry 5.0. Academic librarians can use collaborative tools like shared digital workspaces, cloud-based research platforms, and virtual collaboration tools. CPD programs should also encourage leadership skills, fostering interdisciplinary research and innovation, and managing collaborative projects.

3. **AI and Automation in Libraries:** Library operations are being automated in the digital age, necessitating CPD initiatives to train academic librarians on AI-based systems. This will improve efficiency, streamline services, and enhance user experiences. Ethical considerations and data-informed decision-making are also crucial for ensuring transparency and fairness in AI use.

4. **Blockchain and Intellectual Property Management:** Blockchain technology can revolutionize digital rights management and intellectual property in academic libraries. CPD initiatives should introduce librarians to blockchain's applications, including secure access, resource authentication, usage rights tracking, and decentralized repositories. They should also emphasize the importance of digital preservation and data archiving in a rapidly changing technological landscape.

5. **User-Centered Services and Personalization:** Industry 5.0 emphasizes personalization of services, with academic libraries focusing on tailored experiences. CPD initiatives emphasize user-centered design and AI use for personalized library services. Librarians should be trained in digital literacy to equip students, faculty, and researchers with the necessary skills.

CPD Initiatives for Academic Librarians in the Fifth Industrial Revolution

This section explores the various types of CPD initiatives that academic librarians can undertake to effectively engage with the 5IR.

1. Workshops and Training Sessions on Emerging Technologies

Academic librarians benefit from workshops and training sessions for CPD, focusing on emerging technologies like AI, big data, automation, and IoT. These sessions provide practical knowledge and hands-on experience, enabling librarians to enhance digital resources, implement automated cataloging systems, and improve personalized services (Bawden & Robinson, 2020).

2. Webinars and Online Courses

Digital learning platforms like Coursera, edX, and LinkedIn Learning offer specialized courses in AI, digital libraries, and emerging technologies, allowing librarians to learn from global experts, participate in discussions, and access resources at their own pace, enabling them to stay ahead in their profession. These platforms offer the flexibility to acquire new skills without the constraints of geographical location (Haddow & Parker, 2021).

3. Professional Conferences and Networking Events

Academic librarians benefit from attending professional conferences and networking events for CPD. These events offer opportunities to learn from thought leaders, engage with peers, and discover new tools and practices shaping the future of libraries in the 5IR. They also foster collaboration among libraries, tech developers, and academic institutions (Neal, 2021).

4. Collaborative Learning and Peer Mentorship Programs

Collaborative learning and mentorship are crucial CPD initiatives for librarians, fostering innovation and practical insights. These programs, such as peer-led discussions on emerging technologies, data privacy, research, and digital service delivery best practices, help librarians apply new technologies in a supportive community (Sweeney, 2022).

5. Certifications and Advanced Qualifications

Academic librarians can gain expertise in technology and information management through certifications or advanced qualifications. Programs like CIP, DLC, and data management certifications help build credibility in specialized fields like AI ethics and machine learning. Advanced qualifications like master's degrees prepare librarians for higher-level roles in the academic sector (Liu & Huang, 2019).

6. Institutional In-House Training Programs

Academic institutions can offer customized in-house CPD programs for library staff, addressing global trends and local institutional needs. These programs cover integration of library services, data privacy regulations, and AI integration, helping librarians adapt to the 5IR (JISC, 2020).

Academic librarians must actively engage with the Fifth Industrial Revolution by pursuing continuous professional development (CPD) initiatives to enhance their skills in emerging technologies, ensuring they continue to provide innovative, efficient, and impactful services.

Types of Knowledge and Skills Acquired by Academic Librarians in Continuous Professional Development (CPD) in the Era of Fifth Industrial Revolution

Continuous Professional Development (CPD) equips academic librarians with skills in digital literacy, data science, AI, copyright, user experience, ethics, and collaboration, enabling them to enhance library services, support research, and remain indispensable in the 5IR technology-driven academic environment.

1. Digital Literacy and Information Management

Academic librarians gain enhanced digital literacy through CPD, adapting to new technologies like cloud computing and AI-based search engines. They learn to use digital platforms, metadata standards, and content management systems for organizing and curating vast information. Information management skills are crucial for handling large datasets and complex structures, supporting academic research, teaching, and learning (Haddow & Parker, 2021).

2. Data Science and Data Management

Academic librarians must acquire competencies in data science and management to handle large datasets, analyze data trends, and ensure data security and privacy. CPD initiatives help them use data visualization tools, manage repositories, and provide ethical data use guidance, making these skills valuable in data-driven research environments (Bawden & Robinson, 2020).

3. Artificial Intelligence (AI) and Machine Learning

Academic librarians in the 5IR must understand and utilize AI and machine learning technologies. CPD initiatives help them understand how AI can enhance library services like personalized search results and automated cataloging, and how natural language processing can improve user interactions and operational efficiency.

4. Digital Copyright and Intellectual Property (IP) Knowledge

Academic librarians in the 5IR must be knowledgeable about digital copyright and intellectual property (IP) issues. CPD initiatives educate them on legal aspects of digital resource management, including copyright laws, fair use policies, and licensing agreements. This ensures compliance with laws and promotes innovation in academic research (Neal, 2021).

5. User-Centered Design and User Experience (UX)

Academic libraries must adapt to the 5IR by providing user-centric experiences. CPD initiatives in UCD and UX help librarians design user-friendly systems, accessible websites, and virtual environments. They also conduct user research to improve services and meet user expectations, ensuring a student- and researcher-centric approach (Sweeney, 2022).

6. Ethics and Privacy in the Digital Age

Academic librarians must acquire knowledge in ethics and privacy related to digital technologies, such as AI, big data, and digital surveillance. CPD programs cover data privacy concerns, algorithm biases, and equitable access to information. These skills are crucial as academic libraries host digital archives and e-books (Liu & Huang, 2019).

7. Collaboration and Networking

Digital tools promote global collaboration, enhancing academic librarians' skills in collaboration and networking. CPD initiatives train librarians to support collaborative research projects, facilitate virtual seminars, and connect users to global information networks, fostering interdisciplinary collaboration and innovation in library services (JISC, 2020).

Benefits for Academic Librarians in Continuous Professional Development (CPD) in the Fifth Industrial Revolution

By engaging in CPD, academic librarians gain significant advantages, both personally and professionally, which help them thrive in an increasingly digital and technology-driven environment. This section explores the benefits that academic librarians gain through CPD, specifically in relation to the Fifth Industrial Revolution.

1. Enhanced Skill Sets for Digital and Technological Proficiency

CPD offers academic librarians the chance to enhance their digital and technological skills, enabling them to manage new technologies like AI, machine learning, and big data analytics. This proficiency allows

librarians to provide efficient services, help users navigate digital resources, curate collections, and offer innovative research tools, thereby increasing the library's value within the academic community (Bawden & Robinson, 2020).

2. Improved Career Development and Job Satisfaction

CPD helps librarians enhance their skills and expertise, leading to better career development opportunities. With the rise of digital literacy, data management, and AI, librarians can take on leadership roles. CPD also fosters job satisfaction, as those equipped with new competencies are more likely to stay competitive and retain employees (Neal, 2021; Sweeney, 2022).

3. Greater Adaptability to Technological Changes

CPD initiatives help academic librarians adapt to technological changes in the 5IR by providing tools and knowledge to understand, evaluate, and implement new technologies. This adaptability ensures libraries can meet changing needs, integrate AI-powered search engines, and stay relevant, preventing librarians from becoming obsolete (Haddow & Parker, 2021).

4. Better Support for Teaching and Research

Academic libraries are vital for teaching and research, and continuous professional development (CPD) helps librarians support faculty, researchers, and students. CPD in data science and research data management equips librarians with skills for managing data, understanding ethics, and accessing open repositories in the 5IR (Liu & Huang, 2019).

5. Improved User Services and User Experience

CPD programs improve librarians' UX and design skills, ensuring user-friendly and accessible digital platforms in academic libraries. They focus on user-centered design, optimizing digital content delivery, and developing intuitive systems. This ensures relevance and value in the face of rapidly changing technology and user behaviors (JISC, 2020).

6. Ethical Awareness and Data Privacy Competency

As the 5IR advances data, AI, and digital platforms, librarians must manage ethical concerns like data privacy and intellectual property. CPD initiatives equip them with skills for responsible data use, user protection, and compliance with legal frameworks like GDPR. They also understand copyright laws and fair use policies (Bawden & Robinson, 2020).

7. Fostering Collaboration and Networking

CPD fosters collaboration among librarians by building a network of peers and experts in new technologies, data management, and digital scholarship. Attending workshops, webinars, and conferences helps develop innovative solutions and resources, enhancing library value in academic settings. Staying informed about trends and technologies is also beneficial (Sweeney, 2022).

Challenges of Academic Librarians in Continuous Professional Development (CPD) to Engage with the Fifth Industrial Revolution

Academic librarians face challenges in engaging with the Fifth Industrial Revolution (5IR) through professional development initiatives, including limited resources and the fast-paced nature of technological advancements, despite the critical role of CPD.

1. Limited Time and Heavy Workload

Academic librarians face challenges in participating in CPD initiatives due to limited time and workload. Understaffed libraries often manage collections, user support, and digital resources, leaving little time for professional development. Scheduling conflicts and the need to maintain day-to-day operations make prioritizing CPD challenging.

2. Financial Constraints

CPD initiatives can be costly, especially for academic institutions facing budget cuts. Librarians may have to cover these costs personally or seek limited funding. The rapid pace of technological change in the 5IR can exacerbate costs, especially in regions with limited funding for professional development.

3. Rapid Technological Advancements

The 5IR's rapid technological change presents challenges for academic librarians, as new technologies like AI, machine learning, and blockchain evolve rapidly. CPD initiatives struggle to keep pace, and the need for lifelong learning can lead to professional burnout. This constant need for learning can be overwhelming.

4. Lack of Relevant CPD Resources

Academic librarians often lack specialized CPD resources for the 5IR, as traditional programs focus on basic library skills and may not cover newer areas like data science, AI, or digital ethics. Existing CPD resources often lack contextualization, making it difficult for librarians to find programs that equip them with the necessary skills (Liu & Huang, 2019).

5. Resistance to Change and Organizational Support

Resistance to change among librarians and library management can hinder the successful implementation of Continuous Professional Development (CPD) initiatives. Fear of failure, lack of confidence, and institutional support are key factors. Lack of a culture of continuous learning, prioritizing professional development, and adequate support from academic institutions can hinder CPD engagement (JISC, 2020).

6. Balancing New Technologies with Traditional Library Roles

Librarians must balance new technologies with traditional roles in the 5IR, balancing information management, research support, and literacy. CPD initiatives must equip them with technical and soft skills to adapt to digital and data-driven learning environments, especially during structural changes (Neal, 2021).

7. Ensuring Inclusivity and Accessibility

The digital divide in CPD for librarians is exacerbated by limited access to digital tools and advanced training platforms, affecting their ability to acquire skills for the 5IR. Additionally, language diversity in CPD resources, primarily conducted in English, may exclude non-English speaking librarians or those with limited resources (Sweeney, 2022).

Conclusion

Continuous Professional Development (CPD) is crucial for academic librarians in the 5IR, as it helps them adapt to technological advancements and stay relevant. CPD enhances digital literacy, technological proficiency, and knowledge in information management, data privacy, and digital research support. It equips librarians with skills to adopt emerging technologies, support research and teaching activities, and offer user-centered services. Despite challenges like time constraints and financial limitations, CPD benefits librarians' career growth, job satisfaction, and the success of academic libraries in the digital ecosystem.

Recommendations

To optimize the benefits of CPD for academic librarians in the 5IR, the following recommendations are proposed:

a) **Institutional Support for CPD Initiatives**
Academic institutions should allocate resources for librarians' CPD programs, including funding for training, conferences, workshops, and paid time off, and establish a clear framework to encourage participation and development (Sweeney, 2022).

b) **Tailored CPD Programs for the 5IR**
Libraries should collaborate with professional organizations to develop specialized CPD initiatives for librarians in the 5IR, focusing on digital tools, data management, and technological competencies, while addressing ethical concerns (Bawden & Robinson, 2020).

c). **Collaboration and Networking Opportunities**
Librarians should be encouraged to network and collaborate with peers, fostering innovation and adapting to technological changes through regular professional development events and participation in regional, national, and international library networks (Haddow & Parker, 2021).

d) **Ongoing Evaluation and Feedback Mechanisms**
Regular evaluation of CPD programs is crucial for relevance and effectiveness, with feedback mechanisms assessing impact on librarians' skills and professional growth, ensuring relevance in technological advancements (Neal, 2021).

e) **Promoting Lifelong Learning Culture**
Librarians should foster a culture of continuous learning through incentives like certifications and career advancements, fostering a learning-focused environment that can adapt to rapid technological changes (Sweeney, 2022).

f). **Inclusivity and Accessibility of CPD Resources**
CPD programs should be accessible and inclusive to all librarians, regardless of location, socio-economic status, or language barriers, using online platforms and virtual conferences (JISC, 2020).

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