

Assessing artificial intelligence literacy levels among academic librarians in Kenya

DOI: 10.61735/t2essm90

¹Miriam W. Ndungu, ²Stanislaus Agava

¹<https://orcid.org/0000-0002-4120-0899>, ²<https://orcid.org/0000-0003-2879-6082>

¹The Co-operative University of Kenya, ²National Intelligence and Research University

ABSTRACT

Artificial Intelligence (AI) literacy is emerging as a core competence in preparing higher education learners for the industry. It has been proposed that libraries are well-positioned to offer AI literacy to all students by integrating it into existing media and information literacy programs. There is, however, a research gap on whether librarians possess the requisite skills and competencies to deliver AI literacy to learners in higher education. This study utilised an online questionnaire created in Google Forms to assess librarians' self-rated levels of awareness and competencies in AI in higher education in Kenya. Librarians rated themselves as most proficient in using AI tools for research, AI-driven search and discovery tools, and responsible use of AI. They reported critical skill gaps in concepts such as prompt engineering, training data, algorithms, explainable AI, and ethical considerations in AI use. The authors conclude that librarians must build on the information literacy skills they possess by integrating AI literacy. This can be done by leveraging free online resources and targeted capacity building.

(Key words: *Artificial Intelligence literacy; AI algorithms; prompt engineering; explainable AI; XAI; training data.*)

I. INTRODUCTION

Artificial Intelligence (AI) has become ubiquitous in our daily lives (Tai, 2020). AI has permeated critical sectors such as healthcare, business, transportation, banking, and education (Rawas, 2024). AI technology is the simulation of human intelligence in machines. The technologies utilise techniques such as machine learning, data processing, algorithmic systems, natural language processing, and neural networks to process and analyse complex data sets, recognise patterns, and make informed decisions based on data (Lestari et al., 2024). The technologies are transforming the ways we acquire, evaluate, share, create, and use information in education and everyday life.

In particular, AI has profound implications for higher education in its role of preparing individuals to navigate, contribute to, and thrive in the AI-driven era (Lo, 2024a). Consequently, AI has become a top agenda item for leaders in higher education (Ng et al., 2021a). The accompanying AI literacy is also recognised as an indispensable component of successful AI adoption (Miltenoff, 2024). It has been acknowledged that there is an urgent need to equip higher education learners with AI literacy skills (Ng et al., 2021a). Without the essential AI literacy skills, "higher education risks falling prey to AI's

pitfalls rather than leveraging its benefits" (Lo, 2024a, p. 635).

Libraries and librarians in higher education settings must consider AI skills and knowledge as part of the information literacy (IL) training they provide for their users (Andersdotter, 2023). Librarians need to equip themselves with the ability to understand, use, and critically evaluate AI technologies if they are to remain relevant in their service delivery to the patrons they serve. It is critically important that they embrace AI literacy and spearhead efforts to demystify AI and guide patrons in engaging with AI (Lo, 2025). Some of the competencies and skills that are required in the librarians' reengineered role include awareness and knowledge of AI tools for education (Akakpo, 2024), and crafting effective prompts for optimal results out of the AI systems (Knoth et al., 2024; B. Lund, 2023). Another critical literacy is algorithmic literacy and the closely related concept of explainable AI (XAI). Algorithms have been described as the power brokers in the current technological era. Librarians also need awareness of the potential biases inherent in AI-generated content, the need to critically evaluate AI tool outputs, and the responsible and ethical use of AI (Lo, 2024a). To effectively plan for AI capacity building, it is important to establish the level of awareness

and skill levels of the AI competencies and identify knowledge gaps that need to be bridged.

With the increasing presence of AI in the information ecosystem, the conceptualisation of information literacy must include AI literacy. A white paper on AI literacy published by the Association of College and Research Libraries (ACRL) has identified a gap in higher education for learners seeking to learn basic AI literacy skills (Hervieux & Amanda, 2024). Libraries are perfectly positioned to provide literacy training, much like librarians provide information, data, and digital literacy instruction. A survey of AI needs assessment that included Kenya among the sampled African countries identified a gap in the availability of trained individuals to provide AI-related instruction on aspects such as AI's legal and ethical implications (Sibal & Neupane, 2021). It is therefore unclear whether librarians in universities in Africa possess the requisite levels of competencies to accomplish the task of instruction on AI literacy. In the Kenyan context, no literature addressing academic librarians' AI literacy competencies was found. This study sought to examine whether academic librarians in Kenya have the AI literacy skills and competencies needed to effectively deliver basic AI literacy to higher education learners.

This paper is significant because it helps bridge the knowledge gap regarding librarians' AI literacy capacity in universities in Kenya. Specifically, the study evaluates the following among librarians at universities in Kenya: the level of understanding of AI literacy, the level of awareness of AI literacy, gaps in AI literacy, aspects of AI literacy already integrated into Information literacy sessions, and the challenges librarians face in imparting AI literacy skills to learners.

AI and Information Literacy in Academic Libraries

In the Kenyan context, there is a significant gap in AI literacy among the general populace (Ministry of Information, Communications, and the Digital Economy (MICDE), 2025). The government strategy on AI positions the Integration of AI into educational curricula as one of key enablers in the uptake and adoption of AI (Ministry of Information, Communications and the Digital Economy (MICDE), 2025). In the higher education sector, the Commission of University Education (CUE) has vested the responsibility of information literacy on librarians in partnership with faculty by stating that "The librarians, in partnership with the faculty, shall provide information and instruction to all users through a well-structured information literacy competency programme" (Commission for University Education, 2014, p. 105). In this context, Masinde et al.

(2024) studied the effectiveness of the pedagogical approaches that academic librarians in Kenya utilise to deliver information literacy. Their study found a lack of consistency in the conceptualisation of information literacy, and many online tutorials and information literacy documents failed to address all aspects of the concept. The gap in the content covered is further widened as AI literacy expands the scope and content of traditional information literacy. In today's AI-driven world, information literacy must include topics such as understanding how to attribute AI-generated content, apply AI tools ethically in academic writing, and navigate copyright and publishing regulations related to AI (Kim, 2024). With AI making inroads into the information landscape, librarians and libraries are by default being positioned as key and indispensable players in AI learning and teaching in the higher education sector (Corrall & Jolly, 2019; Pinto et al., 2024).

There is a gap in AI literacy courses. More concerning is the lack of clarity on what components should make up these courses. The higher education sector has yet to reach a consensus on the skills and competencies that define an AI-literate person (O'Dea et al., 2024). The conceptualisation of AI literacy and the associated set of skills are still in their early stages. The emerging literature is beginning to lay the foundations and propose frameworks on which AI literacy curricula, courses, certifications, learning programmes, MOOCs, and other educational tools can be built (Faruqe et al., 2022).

Some researchers have conceptualised AI literacy using Bloom's taxonomy (Ng et al., 2021c). The taxonomy categorises the levels of reasoning skills and ordered thinking required across different learning contexts. Each of the six levels in the taxonomy requires a higher level of complexity and ordered thinking from the students. The concepts identified were categorised under cognitive domains of the knowledge and understanding of AI; the ability to apply the knowledge and concepts in different scenarios, higher-order thinking skills for evaluating, appraising, predicting, and designing using AI tools; and AI ethical considerations (Ng et al., 2021a).

UNESCO has developed a comprehensive framework of twelve interconnected blocks of competencies that are categorised under human-centred mindset, AI ethics, AI technics, applications and AI system design. The competencies are grouped into three progression levels, namely understand, apply, and create (Miao & Shiohira, 2024).

An ACRL white paper has proposed a hierarchical framework consisting of six principles and related

competencies. The frames and competencies are accompanied by a set of learning objectives. The proposed frames are knowledge of the basic principles of AI, an understanding of the differences in the types of AI, experimenting with AI tools, reviewing the outputs of the tools, evaluating the impact of AI on a societal scale, and engaging with AI discourse (Hervieux & Amanda, 2024).

The ACRL Board of Directors established an AI Competencies for Library Workers Task Force that was approved in March 2024. The terms of reference include identifying and analysing the specific needs and roles of library workers in the AI era; a review of existing ACRL standards and frameworks for AI relevance and integration; and the development of a set of the requisite essential AI competencies for library professionals (ACRL, 2024). The draft report of the task force was released on 5th March 2025. The draft framework highlights proposed AI competencies and suggests how they can be integrated into the ACRL Framework for Information Literacy for Higher Education (ACRL AI Competencies for Library Workers Task Force, 2025).

An exploratory review that aimed at conceptualising “AI literacy” identified the following four aspects that may be used in defining, teaching, and evaluating AI literacy: knowledge and understanding of AI; application of AI; evaluation and creation; and AI ethics (Ng et al., 2021b). The four frameworks are the basis of this study. The author has extended the concepts by incorporating topics that have been proposed as essential in AI literacy. These are basic knowledge and awareness of AI tools; search techniques and prompt engineering; evaluation of generated content; AI algorithms; ethics and responsible use of information; and AI explainability, transparency, and accountability (ACRL AI Competencies for Library Workers Task Force, 2025; Ndungu, 2024).

II. METHODOLOGY

The study sought to obtain self-rated levels of awareness and understanding of selected AI literacy concepts and AI research tools among academic librarians in Kenya. The results would gauge the preparedness of librarians in integrating AI literacy into existing information literacy programs. 87 librarians responded to an online questionnaire that covered sixteen (16) multiple-choice questions on the following themes: respondents’ demographics; awareness and Knowledge literacy concepts and research tools; self-rated evaluation of confidence in teaching AI literacy concepts; AI concepts that librarians have already integrated into their information literacy sessions; challenges the librarians are facing in equipping themselves for AI literacy

instruction and one (1) open-ended question that sought for the librarians’ insights on AI literacy for academic librarians.

The target population was librarians working in university libraries in Kenya. Data was collected using an online Google Form and analysed using the same Google Form. The Form was circulated using the Kenya Library and Information Services Consortium (KLISC) listserv and the Kenya Library Association (KLA) listserv.

III. STUDY RESULTS

This section presents the findings of a study conducted to evaluate the AI literacy levels of academic librarians in Kenya and to identify gaps in AI literacy skills and competencies.

Demographic characteristics of the respondents

The participants’ age distribution ranged from 20 years to over 50 years. The largest percentage of participants fell within the age bracket of 50 years and above (31%), while the lowest demographic was within the 20-30 years (13%). Twenty-eight percent of the respondents fell within the 41-50 age range, while 28% were aged between 31 and 40 years. The study had nearly equal gender representation, with 51% of respondents male and 49% female. A majority of respondents (40%) hold a Master’s degree, while 27% have a Bachelor’s degree. A smaller proportion (7%) holds diplomas, while 7% possess PhDs. In terms of years of experience in the profession, the majority of the respondents have been in the profession for 11-20 years (40.2%), with the least bracket being those who have been in the profession for less than 5 years (12.2%). Cumulatively, participants who have been in the profession for more than 11 years make up 70.7%.

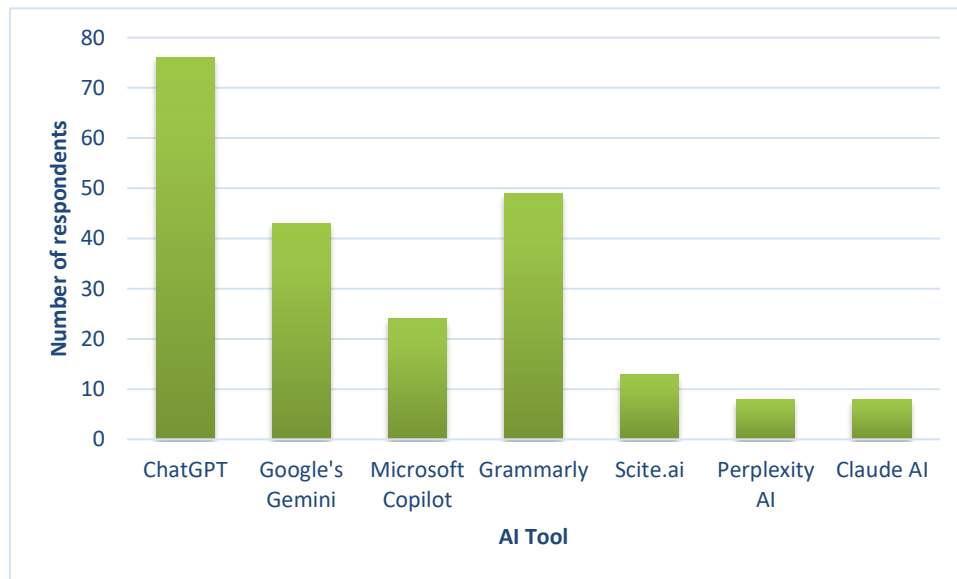
Awareness and Knowledge of AI

This section sought self-rated levels of awareness and knowledge of AI in general, as well as specific concepts of AI literacy, AI research tools, and the sources of AI knowledge and skills. Sixty-two percent of the librarians described themselves as “somewhat familiar” with AI, and only 24% rated themselves as “very familiar” with AI literacy. The most familiar AI concept was generative AI, with 83.8% of the librarians reporting familiarity. This was followed by machine learning at a distant (33.8%), AI algorithms (25%), natural language processing, and training data, both at 23.8%. Seven point five percent of the participants reported that they were not familiar with any of the listed concepts. Regarding AI research tools,

the study found that, relative to other tools, ChatGPT was the most familiar, with 90.1% of participants reporting familiarity. The next three most popular tools were

Grammarly (58%), Google Gemini (49.4%), and Microsoft Copilot (28.4%). Figure 1 shows librarians' self-rated familiarity with AI tools used for research.

Figure 1: Familiarity with AI tools for research

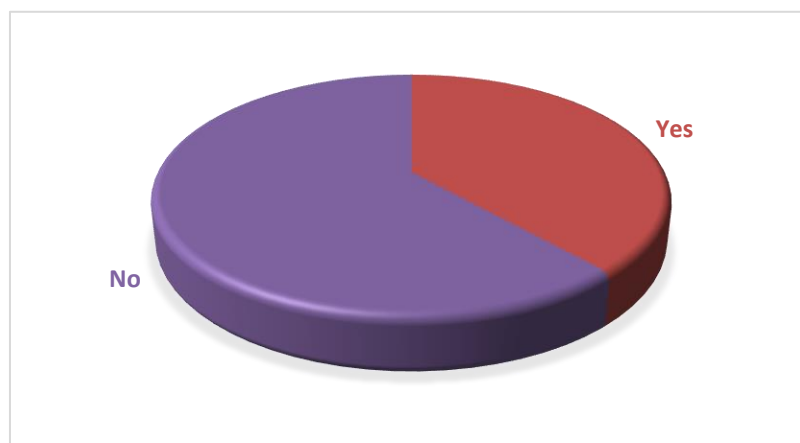


AI-Capacity building

Figure 2 represents the number of librarians who have attended training on AI Literacy. The study found that 63.4% of respondents had not attended any AI literacy training, while only 36.6% reported participating in AI literacy programs. The top three most cited sources of AI

information were reported as research articles (28.2%), peer discussions (24.7%), and online courses and tutorials (15.5%). Professional development programs played a relatively moderate role at 10.6%. Other sources not included in the choices provided were cited as personal reading, the ALX AI Career Essentials Course, the internet, and online information sources, each at 1.2%.

Figure 2: Number of librarians who have attended training on AI Literacy

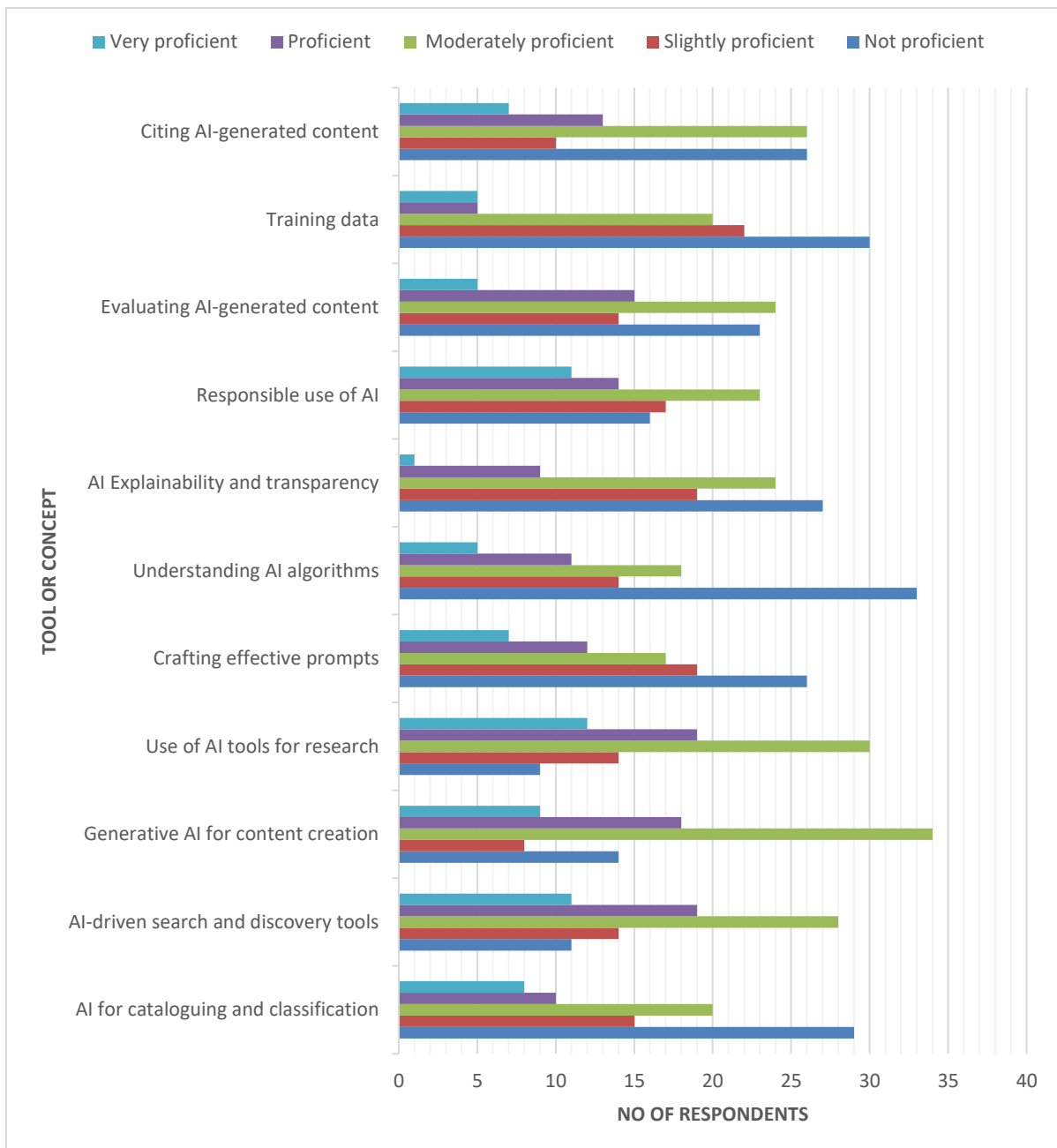


Proficiency levels of AI literacy concepts and tools

Figure 3 presents findings on librarians' self-ratings of AI literacy competencies in AI research tools and concepts. The levels were scored on a scale of 1 (Not proficient) to 5 (Very proficient). The highest ratings (at 5-very

proficient) were competency in the use of AI tools for research (12), AI-driven search and discovery tools (11), and responsible use of AI (11), out of the 87 respondents. Conversely, the least proficiency was reported in the understanding of AI algorithms, training data, XAI, and crafting effective prompts.

Figure 3: Proficiency in AI Research tools and concepts



Confidence in teaching AI literacy concepts

The study also sought to determine self-rated levels of confidence in the ability to teach various AI literacy concepts to students. The responses were rated on a scale from 1 (Not confident) to 5 (Very confident). The highest number (10) of librarians were most confident in teaching the use of AI tools for research, AI ethics, and responsible use of AI (both at 7). The highest number of librarians were least comfortable in training on AI algorithms (36) and training data (at 35), citing AI-generated content (34) and crafting effective prompts (31).

Integration of AI literacy into information literacy sessions

Respondents were asked about their perception on the integration of AI literacy into IL sessions and, the concepts that have already been integrated. Slightly more than half of the respondents (51.2%) strongly agreed that AI literacy should be part of the library's information literacy programs, emphasizing the growing recognition of AI as an essential skill for librarians and researchers. Additionally, 20.7% "Agreed". Conversely, 25.6% strongly disagreed, while a very small percentage were neutral on the issue. None of the respondents' sentiments were reflected by the option of "Disagree".

Integration of AI tools and concepts into information literacy sessions

Regarding the integration of AI tools and concepts into information literacy sessions, the study found that 56.1% of respondents have not incorporated AI into their sessions, while 43.9% have. This indicates that while AI integration is gaining traction, a significant portion of educators or librarians have yet to embrace AI in their information literacy programs. Among respondents who have integrated AI concepts into their IL sessions, the most commonly reported area of AI integration is the use of Generative AI tools in education and research (62.8%), followed by Information retrieval (51.2%) and the

responsible use of AI (48.8%). Other notable concepts that have been integrated include AI-driven search and discovery (41.9%), AI ethics (41.9%), and evaluating AI-generated content (30.2%). The least level of integration was reported in topics such as crafting effective prompts (16.3%), AI algorithms (16.3%), and AI explainability and transparency (11.6%).

Challenges faced in acquiring AI literacy skills

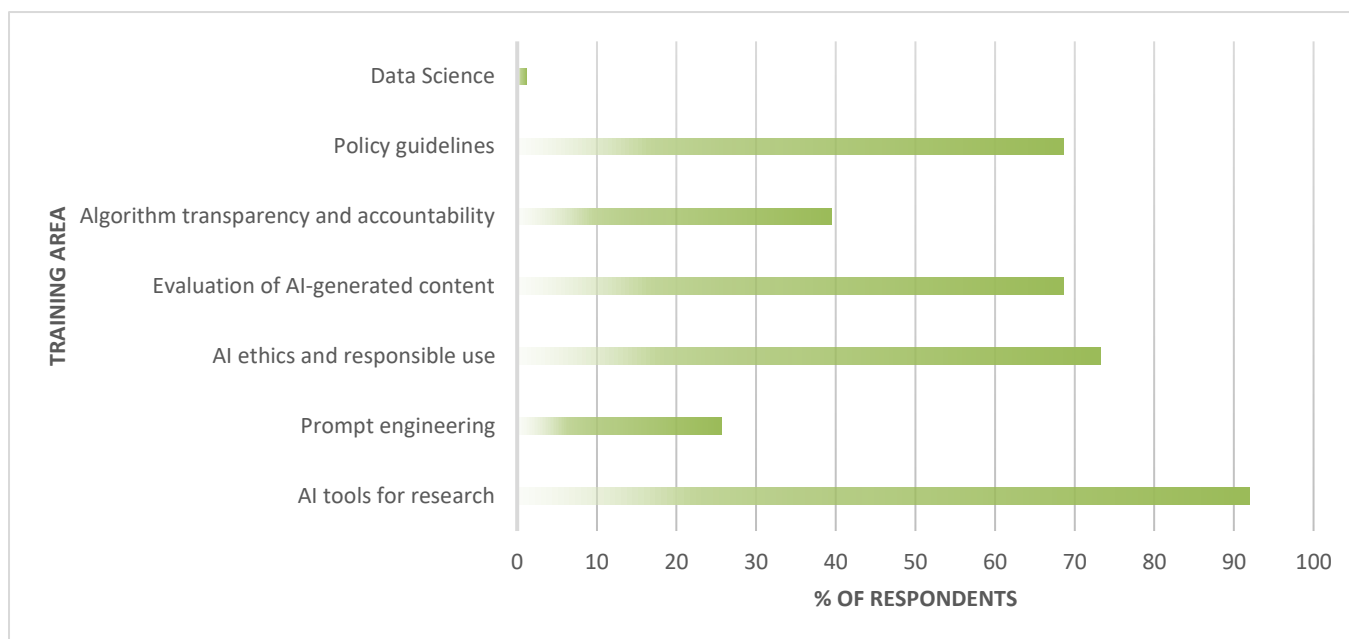
The study found that the lack of training opportunities is the most significant barrier, with 84.1% citing this as a challenge. This was followed by a lack of institutional support (43.9%), limited access to resources, and resistance to adopting new technologies, all of which were identified by 37.8% of the respondents. Other challenges cited were the lack of locally available AI knowledge and the unavailability of AI experts (both at 1.2%).

To mitigate the challenges, the study sought to identify the types of support that would help librarians enhance their AI literacy skills. The most sought-after support is training programs, cited by 97.6% of respondents. Other forms of support required were given as access to AI tools and software (65.9%), and collaboration with faculty and researchers was recommended by 59.8% of the respondents.

AI concepts that should be prioritised in training programs for librarians

Figure 4 presents the librarians' suggestions for prioritising concepts of AI literacy in librarians' training programs. The training areas recommended as priority by more than half of the respondents were AI tools for research (91.5%), AI ethics and responsible use (74.4%), policy guidelines (69.5%), and evaluation of AI-generated content (68.3%). Additionally, 37.8% emphasized algorithm transparency and accountability, and 25.6% selected prompt engineering as a priority, indicating that while important, it is not viewed as critical as the other areas.

Figure 4: AI literacy priorities for librarians' professional development



Librarians' insights on AI literacy

In response to the open-ended question on librarians' suggestions and insights on AI literacy for academic librarians, 23 out of the 50 who responded expressed the urgent need for AI education in the form of sensitisation, awareness, integration of AI literacy into the LIS curriculum, proactive research in AI, development of AI literacy manuals, workshops, and seminars. In this context, librarians were challenged to utilise the wealth of free online AI content in the form of journal articles and videos and to be at the forefront of the technology. The training should target all library staff. Urged librarians to embrace AI by integrating it into the libraries' daily operations. Further, ethical and responsible use was an underlying theme in five of the responses.

IV. DISCUSSION OF FINDINGS

“As facilitators of information and knowledge, academic library employees stand at the crossroads of this AI revolution, making their AI literacy an imperative, not a choice, for the future of higher education” (Lo, 2024b, p. 635). To their advantage, librarians are already skilled and knowledgeable in the skills needed for information search and discovery, evaluation, and creation of information. These skills intersect with AI literacy at many points. AI also has the potential to impact traditional areas of librarianship, such as cataloguing (Lund & Wang, 2023). In regard to information literacy,

librarians will need to train users on different application tools, AI core concepts such as prompt engineering, training data, AI algorithms, XAI, and ethical domains of AI. To be able to confidently transfer the AI skill sets needed by learners in higher education, librarians must possess sufficient AI awareness, knowledge, and competencies on these concepts. This section, therefore, discusses key findings on the librarians' level of awareness and knowledge of selected AI literacy concepts and insights on AI literacy as a component of information literacy.

Should AI literacy be integrated with Information Literacy?

On the issue of AI literacy integration with information literacy, 51.2% of the respondents “strongly agreed” that librarians should offer AI literacy as part of the libraries' information literacy programs. However, 24.4% of the librarians “strongly disagreed” with the position, implying that they felt that AI literacy should not be part of the information literacy programs. This may be attributed to the fact that most of the librarians felt that they were not confident in teaching the AI concepts. The aspects of AI that librarians felt least confident in teaching students were AI algorithms, training data, and XAI. The librarians expressed an urgent need for training on AI and suggested that AI literacy should be part of the Information Science curriculum. Capacity-building programs can boost the confidence of librarians in

handling AI literacy and improve the acceptance of AI technology. This aligns with the technology acceptance model, which purports that acceptance is determined by the perceived usefulness of the technology and the perceived ease of use of the technology (MBA Skool Team, 2023).

Understanding of AI tools and concepts

Approximately half of the respondents rated themselves as “somewhat familiar” with AI concepts in general, while only about one quarter rated themselves as “very familiar” with AI concepts. The most familiar concepts are generative AIs such as ChatGPT, Google’s Gemini, Microsoft Copilot, and Perplexity AI. The critical gap that librarians can fill in the use of the tools is in guiding users on how to cite AI-generated content, and the development of frameworks that delineate parameters of legitimate use of the AI tools (Enis, 2024). 74% of the respondents rated their understanding of how to cite AI-generated content as ranging from “not proficient” to “moderately proficient”. It is worth noting that librarians need not grasp the technical details of AI concepts. This is exemplified by the Frisco Public Library and the Toronto Public Library, which have introduced training on basic AI and AI algorithms (Ridley & Pawlick-Potts, 2021).

Capacity building in AI literacy

Cumulatively, the percentage of librarians who have engaged with professional development programs, online courses, and tutorials is about 27%. The mention of these two sources of AI literacy underscores the preference for structured AI capacity-building initiatives. Despite the implied preference, ALX AI career programs were among the least cited sources of AI literacy. This may be attributed to a lack of awareness of the program. The reliance on peer discussions and communities of practice suggests a need for collaborative learning on AI. It also implies that AI is a trending discussion topic among librarians in Kenya. The peer discussions are supported by the librarians’ networks, such as the Kenya Library and Information Services Consortium and the Kenya Library Association. This underscores the potential of the networks in upscaling AI capacity-building initiatives among member librarians. Overall, the findings underscore the reliance on academic and collaborative resources.

Prompt engineering

Prompt engineering is at the forefront of efforts in shaping human-AI interactions. Prompt engineering competencies may be one of the factors that will

distinguish successful professionals who use AI to their advantage vis-à-vis other professionals who will not be as successful. Lund, 2023). Librarians are well-suited to deliver these skills as an extension of the information search skills component of information literacy. Despite the core role of prompt engineering in AI tools, on a scale of 1-5, ranging from “Not proficient” to “Very proficient,” only 8.3% of the respondents rated themselves as very proficient. 53.6% of the respondents rated themselves on scale 1-2. This may explain why only 15.2% of the respondents have integrated crafting effective prompts in their information literacy sessions. Librarians already understand the online information-seeking and retrieval process; acquiring proficiency in prompt engineering will therefore be a relatively easy process.

Training data, algorithm literacy, and XAI

AI literacy enables librarians to critically evaluate AI systems for issues such as potential biases in algorithms. This requires an understanding of the concepts of training data, algorithm literacy, and XAI. These were the three least understood AI concepts out of the eleven (11) concepts covered in the study. Training data and the algorithms applied in the development of AI applications are core concepts in AI literacy. The ubiquity of algorithms in decision-making and their impact on everyday lives make algorithmic literacy a critical skill. Moreover, algorithmic decision-making is increasingly embedded in the information tools, services, and resources provided by libraries and promoted to library users. In this regard, libraries have begun addressing their role in AI and algorithmic literacy. In the Kenyan context, only 20% of the librarians are familiar with the two concepts. XAI can be considered a subset of algorithm literacy. Only one respondent in this study rated their level of understanding of XAI as “very proficient”. This situation is correlated to the fact that only 7% and 5% of the respondents have integrated AI algorithms and XAI, respectively, in their information literacy sessions. This situation may be attributed to the fact that XAI is an emergent field that is being driven by challenges in evaluating data for potential biases, discrimination, and unfairness.

Ethical and responsible use of AI

Responsible use of AI has been a key concern in the adoption of AI, especially in academic settings. AI ethical concerns include academic integrity, data privacy, and the potential for bias in AI-generated content. Academic librarians possess expertise in ethical aspects such as data privacy and intellectual property rights. Academic librarians are therefore well-positioned to offer AI

literacy. They must, however, be conversant with the range of ethical issues that are of concern in the use of AI tools. Only 12.6% of the respondents rated themselves as “very proficient” in the understanding of the responsible use of AI, while only 8% rated themselves as “very proficient” in citing AI-generated content.

The position of the Committee on Publication Ethics on citing AI-generated content is that an AI tool cannot be listed as an author of a paper (Committee on Publication Ethics, 2023). However, the American Psychological Association (APA) appears to have a different stance. In February 2024, APA released guidelines on how to cite AI-generated content, but also acknowledged that the sources are not retrievable by other readers. Higher education institutions such as Columbia College and Purdue University have provided Libguides that direct students to cite AI-generated content and have included the format to be used (Columbia College, 2025; Lu, 2025). Since guidance on how to cite AI-generated is constantly changing, librarians need to update themselves on the developments.

Implementation of AI literacy

The aspects of AI that were reported by the majority of the respondents to have been implemented in academic library settings include the use of generative AI for research, information retrieval, responsible use of AI, and AI ethics. This scenario may be explained by the emergence of ChatGPT in November 2022, which fuelled the awareness of the potential of generative AI tools in research (Pan et al., 2023). The responsible use of AI and the myriad ethical issues surrounding the use of AI tools in education are concerns. The use of ChatGPT, for example, is associated with ethical issues such as the generation of information that appears coherent but is inaccurate, fabricated citations, and biases in the generated content (Cox, 2024). Academic integrity in the context of the use of AI for research purposes is one of the aspects of responsible use of AI that has taken centre stage. The level of integration of responsible use of AI can be explained by the fact that in the Kenyan context, libraries play a key role in mitigating issues of academic malpractices such as plagiarism. 73% of the respondents in a study reported that institutional antiplagiarism software was managed and administered by the respective university libraries (Nakitare & Otiike, 2023).

Barriers to acquiring AI literacy skills

The emergence of AI in academic librarianship calls for a corresponding evolution in librarians' training. The AI reskilling requires a culture of continuous learning, adaptability, and collaborative exploration, anchored in a

practical, hands-on approach. The lack of training was cited by 84.1% of academic librarians. Exposure to a structured AI literacy program implemented at the University of New Mexico's College of University Libraries and Learning Sciences enhanced the confidence of librarians in applying AI tools (Lo, 2024c). The case study demonstrates the value of AI training opportunities for academic librarians. In particular, they reported a recurring focus on understanding of AI concepts, and their integration into the broader information literacy discussions (Lo, 2024b). Limited access to resources was another significant challenge. Lo (2024b) found that academic librarians who had access to a paid version of an AI had a higher understanding of AI concepts and principles compared to those who did not. This underscores the need for equitable access to AI tools. Related to access to resources is the lack of institutional support. Institutional support is a pillar in the success of AI literacy initiatives. The support is, for example, in policy guidelines on the adoption of AI, training opportunities, and financial resources for the acquisition/subscription to AI tools.

Librarian's insights on AI literacy

The respondents made a call for librarians to embrace AI and consider AI as an opportunity to improve effectiveness and efficiency in library service delivery. This requires that librarians evolve in step with the changes in technology. The most common theme in the response on insights from librarians on AI literacy is the urgent need for capacity building among library staff and students. The top four priority areas for the training were identified as AI tools for research, AI ethics and responsible use of AI, development of policy guidelines, and evaluation of AI-generated content. At the national level, the government of Kenya released a strategy paper that prioritises AI policies as a necessary cornerstone in creating an enabling environment for the adoption of AI (Ministry of Information, Communications and the Digital & Economy (MICDE), 2025).

More than half of the respondents expressed the need for institutional support for AI literacy and access to AI tools to facilitate capacity building. Capacity building can be accomplished through sensitisation programs, seminars, and workshops. Related to capacity building is the suggestion that AI literacy should be included in the LIS curriculum. Librarians' responsibility in researching AI was highlighted. The respondents indicated a need to identify AI literacy skills that librarians require in their service delivery. This would guide targeted capacity building and inform LIS curriculum developers on the AI

content that should be integrated into the educational curriculum.

V. CONCLUSION

The study was focused on establishing the level of awareness and skills of AI concepts, tools, and applications. It identified skill gaps in critical concepts of AI literacy, such as training data, AI algorithms, XAI, and AI ethics. This knowledge gap must be bridged if librarians are to be trusted companions to the researchers and students they serve. Librarians must therefore urgently position themselves at the forefront of AI literacy. Librarians already have foundational knowledge of aspects such as information search skills, evaluation of information sources, and source attribution. They therefore only need to integrate skills required in an AI environment into the existing knowledge base. By utilising the extensive range of free online AI literacy resources, librarians can equip themselves for the integration of AI in their operations as well as offer AI literacy training to library patrons.

VI. RECOMMENDATIONS

As AI literacy becomes increasingly integral to the research process and information services, librarians must familiarise themselves sufficiently with AI tools and concepts and build their confidence in training library patrons on their use. Based on their practical experience with the tools, they must, for example, position themselves to recommend different tools for different purposes. To the requisite competencies and skills, librarians can join communities of practice such as that established by the AI Equality Initiative (Carnegie Council for Ethics in International Affairs, 2025).

Information literacy frameworks and standards are valuable tools in the development of information literacy programs and sessions. However, currently, the frameworks do not cover key AI concepts such as prompt engineering, in-depth evaluation that covers the ethics of AI, and biases and attribution (Hervieux & Wheatley, 2024). While the frameworks can be used as a starting point for AI literacy, there is a need for the development of new frameworks. The frameworks are necessary for capturing the nuance required to teach AI literacy concepts. Librarians can consult frameworks such as the ACRL AI Competencies for Library Workers Framework, which is currently a draft version, for guidance on the skills they need to equip themselves with if they are to support researchers and students in using the AI tools.

Librarians need to make use of the vast array of free online content, research articles, and videos that are available online. Some of the free resources include Microsoft's AI in Education platform (Microsoft, 2025) and OpenAI hub for AI literacy (OpenAI, 2015). IFLA has curated 23 free resources, many of them targeting librarians. The resources address aspects such as the basics of AI, the application of AI in library services, machine learning, chatbots, AI literacy training, and responsible AI and its ethics (IFLA Artificial Intelligence SIG, 2023).

Librarians can partner with university departments, such as computer science and data science departments, and technology companies such as Google AI in their AI literacy initiatives. They can, for example, host guest lectures, workshops, and seminars on specialised AI topics. Librarians can incentivise participation in the programs by providing opportunities for AI certification courses or continuing education programs.

REFERENCES

- ACRL. (2024). *ACRL AI Competencies for Library Workers Task Force | Association of College and Research Libraries*.
<https://www.ala.org/acrl/aboutacrl/directoryofleadership/taskforces/tfs/acr-tfaiclw>
- ACRL AI Competencies for Library Workers Task Force. (2025). *2025-03-05 Draft: ACRL AI Competencies for Library Workers*.
<https://www.ala.org/acrl/aboutacrl/directoryofleadership/taskforces/tfs/acr-tfaiclw>
- Akakpo, M. G. (2024). Skilled for the Future: Information Literacy for AI Use by University Students in Africa and the Role of Librarians. *Internet Reference Services Quarterly*, 28(1), 19–26.
<https://doi.org/10.1080/10875301.2023.2280566>
- Andersdotter, K. (2023). Artificial intelligence literacy in libraries: Experiences and critical impressions from a learning circle. *Journal of Information Literacy*, 17(2). <https://doi.org/10.11645/17.2.14>

- Carnegie Council for Ethics in International Affairs. (2025). *Artificial Intelligence & Equality Initiative (AIEI)*. <https://www.carnegiecouncil.org/initiatives-issues/artificial-intelligence-and-equality>
- Columbia College. (2025). *LibGuides: APA Citation Guide (7th edition): AI-Generated Content*. <https://columbiacollege-ca.libguides.com/c.php?g=713274&p=5355771>
- Commission for University Education. (2014). *Commission for University Education Universities Standards and Guidelines [Guidelines]*. Commission for University Education. https://www.cue.or.ke/index.php?option=com_p_hocadownload&view=category&id=16:standards-and-guidelines&Itemid=495
- Committee on Publication Ethics. (2023, February 13). *Authorship and AI tools*. COPE: Committee on Publication Ethics. <https://publicationethics.org/guidance/cope-position/authorship-and-ai-tools>
- Corrall, S., & Jolly, L. (2019). Innovations in Learning and Teaching in Academic Libraries: Alignment, Collaboration, and the Social Turn. *New Review of Academic Librarianship*, 25(2–4), 113–128. <https://doi.org/10.1080/13614533.2019.1697099>
- Cox, A. (2024). Algorithmic Literacy, AI Literacy and Responsible Generative AI Literacy. *Journal of Web Librarianship*, 18(3), 93–110. <https://doi.org/10.1080/19322909.2024.2395341>
- Enis, M. (2024, January 8). *Next Gen AI: Libraries Work with ChatGPT and Other Emerging AI Tools*. <https://www.libraryjournal.com/story/next-gen-ai-libraries-work-with-chatgpt-and-other-emerging-tools>
- Hervieux, S., & Amanda, W. (2024). *Building an AI Literacy Framework: Perspectives from Instruction Librarians and Current Information Literacy Tools*. Taylor & Francis Group. https://www.choice360.org/wp-content/uploads/2024/08/TaylorFrancis_whitepaper_08.28.24_final.pdf
- Kim, B. (2024). Shift in AI Adoption at Libraries. *Computers in Libraries*, 44(8). <https://www.infoday.com/cilmag/oct24/Kim--Shift-in-AI-Adoption-at-Libraries.shtml>
- Knoth, N., Tolzin, A., Janson, A., & Leimeister, J. M. (2024). AI literacy and its implications for prompt engineering strategies. *Computers and Education: Artificial Intelligence*, 6, 100225. <https://doi.org/10.1016/j.caeai.2024.100225>
- Lestari, R., Windarwati, H. D., Hidayah, R., Lestari, R., Windarwati, H. D., & Hidayah, R. (2024). AI-Driven Decision-Making Applications in Higher Education. In T. V. T. Nguyen & Nhut T. M. (Eds.), *Using Traditional Design Methods to Enhance AI-Driven Decision Making (ai-driven-decision-making-applications-in-higher-education)*. IGI Global Scientific Publishing. <https://doi.org/10.4018/979-8-3693-0639-0.ch011>
- Lo, L. S. (2024a). Evaluating AI Literacy in Academic Libraries: A Survey Study with a Focus on U.S. Employees. *College & Research Libraries*, 85(5), Article 5. <https://doi.org/10.5860/crl.85.5.635>
- Lo, L. S. (2024b). Evaluating AI Literacy in Academic Libraries: A Survey Study with a Focus on U.S. Employees. *College & Research Libraries*, 85(5), Article 5. <https://doi.org/10.5860/crl.85.5.635>
- Lo, L. S. (2024c). Transforming academic librarianship through AI reskilling: Insights from the GPT-4 exploration program. *The Journal of Academic Librarianship*, 50(3), 102883. <https://doi.org/10.1016/j.acalib.2024.102883>
- Lo, L. S. (2025). AI Literacy: A Guide for Academic Libraries. *College & Research Libraries News*, 86(3), Article 3. <https://doi.org/10.5860/crl.n.86.3.120>
- Lu, J. (2025). *Research Guides: Artificial Intelligence (AI): Home*. <https://guides.lib.purdue.edu/c.php?g=1371380&p=10135065>
- Lund, B. (2023, November 13). *The prompt engineering librarian*. Library Hi Tech News. <https://www.emerald.com/insight/content/doi/10.1108/LHTN-10-2023-0189/full/html>
- Lund, B. D., & Wang, T. (2023). Chatting about ChatGPT: How may AI and GPT impact academia and libraries? *Library Hi Tech News*, 40(3), 26–29. <https://doi.org/10.1108/LHTN-01-2023-0009>
- Masinde, J. M., Mugambi, F., & Wambiri, D. M. (2024). Conceptualisation and Practice of Information Literacy Pedagogy at Universities in Kenya. *Evidence Based Library and Information Practice*, 19(2), 63–73. <https://doi.org/10.18438/ebliip30370>
- MBA Skool Team. (2023). Technology Acceptance Model (TAM) - Definition & meaning. MBA Skool. <https://www.mbaskool.com/business-concepts/it-and-systems/7560-technology-acceptance-model-tam.html>

- Miao, Fengchun, & Shiohira, K. (2024). *AI competency framework for students*. UNESCO. <https://doi.org/10.54675/JKJB9835>
- Miltenoff, P. (2024). Academic Librarians in Times of AI and AI Literacy: Tasks, Responsibilities, and Leadership. *The International Information & Library Review*, 56(3), 296–305. <https://doi.org/10.1080/10572317.2024.2381182>
- Ministry of Information, Communications and the Digital & Economy (MICDE),. (2025, March). *Kenya AI Strategy 2025-2030 | Ministry of ICT and the Digital Economy*. Government of Kenya. <https://ict.go.ke/node/641>
- Nakitare, J., & Otiike, F. (2023). Plagiarism conundrum in Kenyan universities: An impediment to quality research. *Digital Library Perspectives*, 39(2). <https://doi.org/10.1108/DLP-08-2022-0058>
- Ndungu, M. W. (2024). Integrating basic artificial intelligence literacy with media and information literacy in higher education. *Journal of Information Literacy*, 18(2), Article 2. <https://doi.org/10.11645/18.2.641>
- Ng, D. T. K., Leung, J. K. L., Chu, K. W. S., & Qiao, M. S. (2021a). AI Literacy: Definition, Teaching, Evaluation and Ethical Issues. *Proceedings of the Association for Information Science and Technology*, 58(1), 504–509. <https://doi.org/10.1002/pr2.487>
- Ng, D. T. K., Leung, J. K. L., Chu, S. K. W., & Qiao, M. S. (2021c). Conceptualising AI literacy: An exploratory review. *Computers and Education: Artificial Intelligence*, 2, 100041. <https://doi.org/10.1016/j.caeai.2021.100041>
- Pan, S. L., Nishant, R., Tuunanen, T., & Nah, F. F.-H. (2023). Literature review in the generative AI era—How to make a compelling contribution. *The Journal of Strategic Information Systems*, 32(3), 101788. <https://doi.org/10.1016/j.jsis.2023.101788>
- Pinto, M., García-Marco, J., Caballero, D., Manso, R., Uribe, A., & Gómez, C. (2024). Assessing information, media and data literacy in academic libraries: Approaches and challenges in the research literature on the topic. *The Journal of Academic Librarianship*, 50(5), 102920. <https://doi.org/10.1016/j.acalib.2024.102920>
- Rawas, S. (2024). AI: The future of humanity. *Discover Artificial Intelligence*, 4(1), 25. <https://doi.org/10.1007/s44163-024-00118-3>
- Ridley, M., & Pawlick-Potts, D. (2021). Algorithmic Literacy and the Role for Libraries. *Information Technology and Libraries*, 40(2). <https://doi.org/10.6017/ital.v40i2.12963>
- Sibal, P., & Neupane, B. (2021). *Artificial intelligence needs assessment survey in Africa—UNESCO Digital Library*. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000375322>
- Tai, M. C.-T. (2020). The impact of artificial intelligence on human society and bioethics. *Tzu Chi Medical Journal*, 32(4), 339. https://doi.org/10.4103/tcmj.tcmj_71_20



Open Access. This work is distributed under the terms of the Creative Commons Attribution Noncommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, duplication, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, a link is provided to the Creative Commons license and any changes made are indicated. The images or other third-party material in this article are included in the work's Creative Commons license, unless indicated otherwise in the credit line; if such material is not included in the work's Creative Commons license and the respective action is not permitted by statutory regulation, users will need to obtain permission from the license holder to duplicate, adapt or reproduce the material.