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Case studies

An initial interpretation of the U.S. Department of Education's AI report: Implications and recommendations for academic libraries

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ABSTRACT

This article provides an analysis of the U.S. Department of Education's report on Artificial Intelligence (AI) and its implications for academic libraries. It delves into the report's key points, including the importance of AI literacy, the need for educator involvement in AI design and implementation, and the necessity of preparing for AIrelated issues. The author discusses how these points impact academic libraries and offers actionable recommendations for library leaders. It emphasizes the need for libraries to promote AI literacy, involve librarians in AI implementation, develop guidelines for AI use, prepare for AI issues, and collaborate with other stakeholders. The article concludes with a call to action for academic libraries to take a proactive approach to AI, ensuring its effective, ethical, and responsible use in library services and operations. This analysis serves as a roadmap for academic libraries navigating the evolving landscape of AI in education.

Introduction

With the continuous evolution and widespread adoption of Artificial Intelligence (AI) technologies, education is embracing the significant role of this transformative technology within its landscape. A recent report by the U.S. Department of Education, "Artificial Intelligence and the Future of Teaching and Learning," (Cardona et al., 2023) provides valuable insights into the role of AI in education and its implications for various stakeholders, including academic libraries. This article aims to delve into the report's key points, discuss its implications for academic libraries and librarians, and provide actionable recommendations for library leaders.

Understanding the report

The U.S. Department of Education's report is a comprehensive exploration of the intersection of AI and education, providing a nuanced understanding of the potential and challenges of AI in the educational landscape. The report emphasizes the importance of transparency and understanding in AI systems used in education. It suggests that AI should not be a "black box", but rather, its decision-making process should be clear to all stakeholders, including teachers and students. This transparency is crucial in building trust and ensuring that AI tools are used effectively and ethically. It also empowers users to make informed decisions and fosters a sense of ownership and control over AI technologies.

The report also underscores the importance of human involvement in the use of AI in education. It posits that AI is not intended to replace teachers or educational leaders, but rather to assist them. This human-centric approach to AI in education is a key theme throughout the report. It highlights the need for AI tools to be designed and implemented in a way that complements human skills and expertise, rather than replacing them. This approach recognizes the unique value of human judgment, creativity, and empathy, which cannot be replicated by AI.

Furthermore, the report provides several recommendations for the effective and ethical use of AI in education. These include the need to inform and involve educators, focus on research and development to address context and enhance trust and safety, and develop education-specific guidelines and guardrails. These recommendations provide a roadmap for educational institutions looking to integrate AI into their systems and processes. They emphasize the need for a strategic and thoughtful approach to AI in education, which takes into account the specific needs and contexts of different educational settings.

Implications and recommendations for academic libraries

AI literacy and its importance in education

The report underscores the importance of AI literacy for all

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educators, including librarians. AI literacy, as defined by the report, is a multifaceted concept that involves a comprehensive understanding of AI, its applications in education, its ethical implications, and the ability to engage in transparent and authentic dialogue about AI. This literacy is not only crucial for protecting educators and students from potential dangers associated with AI but is also valuable for supporting educators to harness the benefits of AI and apply it in innovative ways. For librarians, AI literacy could involve understanding how AI tools work, how they can be used to enhance library services, and how to navigate potential ethical issues related to AI.

The report also highlights that AI literacy can contribute to the design of AI technologies. Improving AI literacy is necessary if educators are to contribute to how these technologies are designed. This implies preparing educators with a baseline AI literacy and understanding.

Furthermore, the report suggests that efforts to improve AI literacy in education could be important and helpful to society more generally. For instance, educational technology can provide environments where students can experience having difficult discussions across perspectives, an issue which is endemic to present society.

Involvement in AI design and implementation

The report strongly advocates for the involvement of educators in every step of the process of designing, developing, testing, improving, adopting, and managing AI-enabled educational technology. This recommendation is rooted in the understanding that educators, as the primary users of these technologies in educational settings, bring invaluable insights and perspectives that can significantly enhance the effectiveness and relevance of AI tools.

Librarians' involvement in the design and implementation of AI tools is crucial for a multitude of reasons. Firstly, librarians possess a deep understanding of the needs and contexts of their users. This knowledge can significantly inform the design and implementation of AI tools. For example, librarians can provide insights into the types of information resources that users frequently access, the common challenges users face when searching for information, and the preferred ways users interact with the library. These insights can guide the development of AI tools to ensure they meet the specific needs of library users.

Secondly, librarians uphold ethical standards in the library, including privacy, fairness, and transparency. Their active involvement in the design and implementation of AI tools can help ensure these tools adhere to these ethical standards. For instance, librarians can advocate for the use of AI algorithms that are transparent, free from bias, and respect user privacy.

Thirdly, librarians can ensure that AI tools are integrated seamlessly with existing library services. This integration can enhance the user experience and ensure that AI tools complement, rather than disrupt, existing services. A practical example of this is the integration of an AI-powered chatbot with the library's online catalog and databases, providing users with a convenient and efficient way to find information.

Librarians' involvement in AI implementation can manifest in several ways. One of the key areas of involvement is in the selection of AI tools. Librarians, with their deep understanding of the library's needs, can contribute significantly to choosing the most suitable AI tools. Another crucial area is the integration of AI tools with existing library systems and services. Librarians can guide how these tools are incorporated into the library's current infrastructure.

Finally, after the implementation of AI tools, librarians play a pivotal role in their evaluation and improvement. They can gather user feedback, analyze usage data, and conduct usability tests to assess the effectiveness of these tools. For instance, if an AI-powered recommendation system is found to be providing irrelevant suggestions based on user feedback, librarians might collaborate with the system's developers to refine its algorithms and improve its performance. This continuous cycle of evaluation and improvement ensures that the AI tools remain effective and continue to meet the evolving needs of library users.

Awareness, preparation for AI issues, and developing guidelines for AI use

The report underscores the need for leaders at every level to be aware of the broader implications of AI, which extend beyond privacy and security concerns to include potential bias and unfairness. This awareness is particularly important for librarians, who are often at the forefront of implementing and managing AI-enabled technologies in the library.

To effectively confront these issues, librarians need to be well-prepared. This preparation could involve training sessions or discussions on topics such as data privacy, security, bias in AI algorithms, and accountability in AI decision-making. These training sessions could provide librarians with the knowledge and skills they need to navigate the ethical challenges posed by AI, as well as strategies for identifying and addressing these issues when they arise.

In addition to training and awareness, it is essential for libraries to develop practical guidelines for the use of AI. These guidelines should be customized to the specific needs and contexts of the library and its users. For instance, the guidelines could specify how AI tools should manage user data to ensure privacy and security. This could involve setting clear rules about data collection, storage, and sharing, and implementing robust security measures to protect against data breaches.

Addressing bias in AI algorithms is another critical aspect. Libraries could set up procedures to ensure AI transparency, such as advocating for AI tools to use interpretable models that can explain their decisions in understandable terms. Libraries could also consider using third-party auditing firms or open-source tools to regularly test AI tools for bias and make necessary adjustments when bias is identified.

The guidelines should also establish clear lines of accountability for AI outcomes. This could involve identifying specific roles and responsibilities, such as designating a staff member to oversee AI use and/or forming a committee to address any arising issues, like complaints about AI bias or privacy breaches.

Lastly, the guidelines should provide practical guidance on how to use AI tools effectively and ethically in the library setting. This could involve outlining best practices for integrating AI tools with existing library services. For example, an AI-powered chatbot could be integrated with the library's online catalog in a way that enhances, rather than replaces, the existing search function. The guidelines could also provide strategies for ensuring that AI tools meet user needs, such as conducting regular user surveys to gather feedback on the AI tools.

Collaboration with other stakeholders

The report emphasizes the importance of collaboration with other stakeholders in the university, such as faculty, students, and IT staff, to ensure that the library's AI initiatives align with the broader goals and initiatives of the university.

Collaboration is crucial as it ensures that the library's use of AI supports the university's overall mission and strategic goals. For example, if the university is prioritizing research in certain areas, the library could implement AI tools that support research in those areas. An AI-powered literature review tool could be implemented to assist researchers in quickly sifting through vast amounts of academic literature, thereby aligning the library's AI initiatives with the university's research goals.

Collaboration also helps to ensure that the library's use of AI is aligned with other AI initiatives at the university. This can lead to synergies that enhance the effectiveness of AI across the university. For instance, the library could work with the IT department to ensure that AI tools used in the library are compatible with other AI tools used across the university. This could mean using the same AI platform for the library's AI-powered chatbot and the university's AI-powered student support system, ensuring a consistent user experience across the university.

Involving faculty and students in the decision-making process can

help to ensure that the library's use of AI meets the needs of the university community. By gaining insights into their needs and preferences, the library can inform the design and implementation of AI tools. For example, faculty might express a need for an AI tool that can help them track the latest research in their field, while students might express a need for an AI tool that can help them find relevant resources for their assignments.

Finally, collaboration can lead to shared learning and innovation. By working together, different stakeholders can share their expertise and insights, leading to innovative solutions that might not have been possible working in isolation. For example, a librarian, a computer science professor, and a group of students could collaborate on a project to develop a new AI tool for the library, combining their unique skills and perspectives to create a tool that is innovative, effective, and tailored to the needs of the university community.

Potential challenges and mitigation strategies

While the integration of AI into academic libraries offers numerous benefits, it's crucial to recognize and prepare for potential challenges that may arise during this process.

One of the primary challenges could be resistance to change from both library staff and users. This resistance often stems from a lack of understanding about AI and its benefits, fear of job displacement, or discomfort with new technology. To mitigate this, libraries can adopt a transparent communication strategy that clearly articulates the benefits of AI, how it will enhance library services, and how it will impact staff and users. In addition to communication, providing comprehensive training and support is essential to help individuals adapt to new technologies. This could involve hands-on training sessions, online tutorials, and continuous technical support. Libraries could also consider creating a feedback mechanism where staff and users can express their concerns and suggestions regarding the AI implementation. This will not only help in addressing their concerns but also in making them feel involved in the process.

The financial cost of implementing and maintaining AI tools could be a significant challenge for some libraries. However, there are several strategies that libraries can employ to address this issue. Libraries can explore various funding options, such as applying for technology grants specifically designed for libraries or educational institutions. Secondly, libraries can consider forming partnerships with tech companies or other institutions. These partnerships could provide libraries with access to AI tools at a reduced cost or even for free in exchange for data sharing or other forms of collaboration. Thirdly, libraries could consider shared service agreements with other libraries or institutions. In a shared service agreement, multiple libraries collectively purchase and maintain an AI tool, thereby sharing the cost. Lastly, libraries should also consider the long-term return on investment (ROI) of implementing AI. While the initial cost may be high, the increased efficiency and improved services could lead to cost savings over time.

Conclusion and call to action

As AI continues to evolve and become more integrated into our educational systems, it is crucial for academic libraries to stay informed and involved. By promoting AI literacy, involving librarians in AI implementation, developing guidelines for AI use, preparing for AI issues, and collaborating with other stakeholders, academic libraries can effectively navigate the AI landscape and harness its potential to enhance library services and operations.

The future of AI in education is still unfolding, and academic libraries have a unique opportunity to be at the forefront of this evolution. By taking a proactive approach to AI, libraries can not only enhance their own services but also contribute to the broader conversation about the role of AI in education. As we continue to explore the possibilities of AI, it is crucial that we do so with an eye towards transparency, ethics, and the human element of education.

Now is the time for academic libraries to step up and take action. I call on library leaders to embrace the opportunities presented by AI, to engage in meaningful collaboration with other stakeholders, and to lead the way in ensuring that AI is used effectively and ethically in our libraries. I also call on librarians to enhance their AI literacy, to get involved in the design and implementation of AI tools, and to be prepared to confront the challenges that AI presents. Together, we can ensure that our libraries remain at the cutting edge of technological innovation, serving our university communities in the best possible way.

CRediT authorship contribution statement

Leo Lo is the sole author of the article, and is responsible for:

- Conceptualization
- Methodology
- Writing- Original draft preparation
- Writing- Reviewing and Editing

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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