Impact of Artificial Intelligence on Library and Information Science Students Learning Styles

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Abstract:

Artificial intelligence has become an integral part of education. In the present era of student-centric education, it has become essential to provide education as they are able to cope up. Personalizes learning, immersive learning experience with virtual reality and augmented reality, motivating and engaging students in learning process, saving the time of teachers from doing repetitive task is possible because of AI. The aim of the present study is to find out impact of AI on students of Library and Information Science education and basically of three learning styles Visual, Auditory and Reading. The finding revealed strong correlation among the three learning styles. And students are benefitted with the use of AI tools in developing their learning styles.

Keywords: Artificial Intelligence, AI Tools ,Learning Styles, Library and Information Science.

Introduction

Information and Communication Technology had brought tremendous change in education sector. The emerging technologies are being adapted in education to make teaching learner-centric. Artificial Intelligence (AI) is not an exception to this. Integration of AI in education has revolutionized the education system. Adaption of ICT since late 1990s was the first step towards revolution. AI in education is the recent trend. A shift is seen in the educational setting in the form of classroom instructions, students engagement and learning outcome, leading to more personalized learning, administrative efficacy and increase in learning outcome.

According to CIRCLS Glossary of Artificial Intelligence Terms for Educators, Artificial Intelligence is defined as “a branch of computer science. AI systems use hardware, algorithms, and data to create “intelligence” to do things like make decisions, discover patterns, and perform some sort of action.”

Generative AI (GenAI) “is a type of machine learning that generates content, currently such as text, images, music, videos, and can create 3D models from 2D input.”

Literature Review

Recent literature highlights the transformative role of Artificial Intelligence (AI) in education across diverse contexts. Alkhawaja et al. (2025) report that selected AI tools enhance educational quality and foster self-directed learning, problem-solving, critical thinking, and digital literacy. Similarly, Almasri (2024), through a PRISMA-based

review, finds that AI in science education improves learning environments, assessment practices, and academic performance prediction.

Empirical studies also emphasize user perceptions and practical adoption. Bhaskar and Rana (2024) identify motivating factors for teachers' use of ChatGPT, including time efficiency, research facilitation, and instructional support, while acknowledging challenges. Kehinde-Awoyele et al. (2024) demonstrate a significant relationship between AI-based instructional strategies, student engagement, and learning outcomes. Likewise, Vieriu and Petrea (2025) observe improved academic performance alongside concerns about overreliance and data privacy.

Within Library and Information Science (LIS), Chegoni (2024) and Rao (2024) stress integrating AI applications into LIS curricula to equip professionals with competencies in machine learning, information retrieval, and digital services. Broader perspectives by Mariyono and Akif Hd (2025) outline AI's impact on personalized learning, ethics, and policy, while U.S. Department of Education (2023) highlights AI's future potential in teaching and learning.

However, emerging concerns are noted. Klimova and Pikhart (2025) caution against digital fatigue, technostress, and reduced interpersonal interaction. Similarly, Ward et al. (2024) recognize gains in study habits and GPA but warn about integration challenges.

Overall, the literature indicates that AI significantly enhances learning experiences and institutional efficiency, yet ethical, pedagogical, and well-being concerns must be carefully addressed for sustainable implementation.

Role of AI in Higher Education

In the present student-centric era, AI is playing major role in rapidly transforming the way students are learning and the way teachers are teaching. The literature review do have revealed that AI-powered tools enable personalized learning experiences, content generated is adaptive according to students need, students can learn according to their own pace. Students engagement increases due to intelligent tutoring systems, automated assessments and grading and virtual assistance. AI plays major role in identifying learning styles of students at early stage, leading to intervention and support to enhance the students learning style.

Another significant role of AI in education is in enhancing accessibility by enabling learning support on a 24×7 basis. AI-driven platforms offer real-time translation, speech-to-text functionalities, and adaptive learning materials, thereby facilitating inclusive education and supporting students with diverse abilities and disabilities.

Objectives of the study

i. To identify the awareness of AI among Library and Information Science students (with respect to AI tools related to learning, reading, literature search and research)

ii. To find out the impact of AI tools of learning styles of LIS students on three styles (Visual, Auditory and Reading)

Scope of the study

The study is limited to Master of Library and Information Science students of Department of Library and Information Science, University of Mumbai. The sample size is 22 library and information science students pursuing their Master of Library and Information Science Course.

Research Methodology

The present study is a quantitative descriptive research. Survey method is used to collect data. A questionnaire was designed containing 5 major items, within which different sub-items were given. The two major items were, which AI tools you are aware of and how frequently you use it. Within this questions AI tools for Learning Support Tools, Academic Writing and Language Tools, Literature Search tools, Reference Management Tools, Reding and Comprehension Tools, Visual Learning & Presentation Tools, Auditory Learning Tools and finally Plagiarism Academic Integrity Tools were asked. The aim was to identify the awareness of these AI tools and it's usage frequency by the students. The second question was regarding, how they were aware of the tools, what was the purpose of using the AI Tools, the impact of using these tools on Visual, Auditory and Reading (VAK) learning styles. A Google Form was created and it was administered on Master of Library and information Science students of University Department of Library and Information Science. Thus, a purposive sampling method is used for the study.

The reliability analysis was conducted to examine the internal consistency of the selected AI tool usage variables, namely Scholarcy, Audio Note Tools, Turnitin, Ouriginal, and Plagcheck. The results show that the Cronbach's Alpha value is 0.927, which indicates an excellent level of reliability, as it is well above the acceptable threshold of 0.70. This confirms that the items used in the study are highly consistent and reliable for measuring the awareness and usage of AI tools among Library and Information Science students. Furthermore, the corrected item-total correlation values for all items are high, particularly for Turnitin (0.923), Ouriginal (0.947), and Plagcheck (0.939), which indicates a strong contribution of these items to the overall scale. Since the Cronbach's Alpha value remains high even if any individual item is deleted, it confirms that all the selected variables are appropriate and contribute effectively to the reliability of the instrument. Therefore, it can be concluded that the questionnaire used in this study is reliable and suitable for further statistical analysis and interpretation.

Data Analysis and Interpretations of the study

1. To identify the awareness of AI among Library and Information Science students (with respect to AI tools related to learning, reading, literature search and research)

Descriptive Statistics Which AI tools you are aware of and how frequently you use it?		
	N	Mean
ChatGPT	22	2.09
Google Gemini	22	2.23
Microsoft Copilot	22	2.91
Grammarly	22	2.50
Quill Bot	22	2.64
Google Scholar	22	2.91
Research Rabbit	22	2.18
Semantic Scholar	22	1.86
Mendeley	22	2.05
Zotero	22	2.14
Endnote	22	2.14
ChatGPT/ AI Summarizers	22	1.95
Valid N (listwise)	22	

Source: Primary Data

The descriptive statistics were analysed to identify the level of awareness and usage of various Artificial Intelligence tools among Library and Information Science students. The results show that tools such as Microsoft Copilot (Mean = 2.91) and Google Scholar (Mean = 2.91) have the highest mean scores, indicating comparatively higher awareness and usage among students. This is followed by QuillBot (Mean = 2.64) and Grammarly (Mean = 2.50), which suggests that students are moderately aware of and use these tools for academic writing and learning purposes. ChatGPT (Mean = 2.09), Google Gemini (Mean = 2.23), Zotero (Mean = 2.14), EndNote (Mean = 2.14), and Mendeley (Mean = 2.05) show moderate awareness among students. However, lower mean scores were observed for Research Rabbit (Mean = 2.18), AI Summarizers (Mean = 1.95), and Semantic Scholar (Mean = 1.86), indicating relatively lower awareness and usage of these specialised research tools. Overall, the findings suggest that LIS students are more aware of commonly used AI tools related to learning and literature search, while awareness of advanced and specialised academic AI tools is still limited.

2. To find out the impact of AI tools of learning styles of LIS students on three styles (Visual, Auditory and Reading)

Test-I

Correlations					
		AIUsageTotalScore	Visual_Total	Reading_Total	Auditory_Total
AIUsageTotalScore	Pearson Correlation	1	-0.382	-0.228	-0.200
	Sig. (2-tailed)		0.080	0.308	0.372
	N	22	22	22	22
Visual_Total	Pearson Correlation	-0.382	1	.660**	.771**
	Sig. (2-tailed)	0.080		0.001	0.000
	N	22	22	22	22
Reading_Total	Pearson Correlation	-0.228	.660**	1	.576**
	Sig. (2-tailed)	0.308	0.001		0.005
	N	22	22	22	22
Auditory_Total	Pearson Correlation	-0.200	.771**	.576**	1
	Sig. (2-tailed)	0.372	0.000	0.005	
	N	22	22	22	22
**. Correlation is significant at the 0.01 level (2-tailed).					

The correlation analysis was conducted to examine the relationship between AI usage and the three learning styles, namely Visual, Reading, and Auditory learning styles among Library and Information Science students. The results show that there is a negative but statistically insignificant relationship between AI usage and Visual learning style ($r = -0.382$, $p = 0.080$), Reading learning style ($r = -0.228$, $p = 0.308$), and Auditory learning style ($r = -0.200$, $p = 0.372$), as the p-values are greater than 0.05. This indicates that AI usage does not have a statistically significant direct relationship with individual learning styles in this study. However, a strong and positive significant relationship was found among the learning styles themselves. Visual learning style shows a strong positive correlation with Reading learning style ($r = 0.660$, $p = 0.001$) and Auditory learning style ($r = 0.771$, $p = 0.000$). Similarly, Reading learning style also shows a significant positive relationship with Auditory learning style ($r = 0.576$, $p = 0.005$). This means that students who benefit from one learning style are also likely to benefit from other learning styles. Overall, the findings suggest that

although AI usage did not show a statistically significant direct impact, AI tools support multiple learning styles together and enhance the overall learning experience of LIS students.

The analysis shows that the majority of respondents were MLISc Part I students (77.3%), while 22.7% were from Part II. It was found that almost all students (90.9%) were familiar with Artificial Intelligence tools used for learning, which indicates a high level of awareness among Library and Information Science students. Among the various AI tools, ChatGPT (90.9%), Google Gemini (81.8%), Grammarly (54.5%), Quill Bot (45.5%), and Google Scholar (54.5%) were widely known and used by students. However, awareness of specialised academic and research tools such as Research Rabbit (45.5% not aware), Semantic Scholar (59.1% not aware), Zotero (45.5% not aware), and EndNote (40.9% not aware) was comparatively lower. This indicates that while students are highly familiar with general learning and writing AI tools, their awareness of advanced research and reference management tools is still limited.

Further, the study found that students mainly came to know about AI tools through teachers (31.8%), conferences and seminars (18.2%), and friends and self-exploration. The main purpose of using AI tools was to clarify doubts (22.7%), understand difficult concepts (18.2%), translate difficult notes (18.2%), and save time in literature search (18.2%). This clearly shows that students are using AI tools as an academic support system to improve their understanding and efficiency in their studies.

The findings reveal that Artificial Intelligence tools have a positive impact on the visual, auditory, and reading learning styles of Library and Information Science students. In terms of visual learning, a majority of students agreed or strongly agreed that AI-generated diagrams, charts, and visual representations help them understand concepts better, improve their learning, increase their interest, and enhance their ability to organise information. This indicates that AI tools are highly effective in supporting visual learning among students.

Similarly, AI tools also showed a positive impact on auditory learning, as most students agreed that AI-based voice explanations, narration tools, and audio support help them understand concepts more clearly, improve concentration, and overcome language barriers. Furthermore, the strongest positive impact was observed in reading learning style. Most students agreed that AI-generated summaries help them understand books and articles more easily, simplify complex reading materials, assist in understanding difficult terminology, and help in note-making and critical understanding. Overall, the results clearly indicate that Artificial Intelligence tools play an important role in enhancing the learning experience of LIS students by supporting different learning styles and improving their academic understanding.

Findings of the Study

1. The study found that most of the LIS students are aware of Artificial Intelligence tools such as ChatGPT, Google Gemini, Grammarly, and Google Scholar. This

indicates that AI tools have become familiar and commonly used among students for academic purposes.

2. The findings show that awareness of specialised AI tools such as Semantic Scholar, Research Rabbit, Zotero, and EndNote is comparatively low among students. This suggests that students are less familiar with advanced tools used for research and reference management.

3. The study reveals that students mainly use AI tools to clarify doubts, understand difficult concepts, translate study material, and save time in literature search. This shows that AI tools are helping students improve their academic efficiency.

4. The results indicate that AI tools help students understand concepts through visuals, audio explanations, and simplified reading materials. Students reported that AI improves their understanding, interest, and ability to learn effectively.

5. The correlation analysis shows that Visual, Auditory, and Reading learning styles are positively related to each other. This means students who benefit from one learning style are also likely to benefit from other learning styles with the help of AI tools.

Suggestions of the Study

1. Educational institutions should organise workshops and training programmes to create awareness about specialised AI tools such as Semantic Scholar, Zotero, and Research Rabbit, which are useful for academic research.

2. Artificial Intelligence tools should be formally included in the Library and Information Science curriculum so that students can learn their proper academic use.

3. Students should be encouraged to use AI tools not only for assignments but also for research work such as literature review, reference management, and academic writing.

4. Libraries and institutions should provide access to useful AI tools and software so that students can use them effectively for learning and research purposes.

5. Students should be guided on the ethical use of AI tools to avoid overdependence and ensure academic integrity in their studies and research work.

Conclusion

AI tools are widely used in academic section. The study revealed that library and information science students are aware about these tools and they use it to clarify their doubts, understand difficult subjects, how ideas can be generated etc. It is seen that the AI tools help students to understand concepts through visuals, audio explanations and simplified reading materials which helps them to improve their understanding, interest and develop ability to learn effectively. The benefit of AI on three learning style viz Visual, Auditory and Reading is also positively correlated. The Department should

organise workshops and training programmes on different AI tools for creating more awareness as to how ethically it can be used in education and learning.

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