

AI-driven transformation: advancing information literacy at the British University in Egypt library

Research – Full text

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Abstract

This study investigates the differing rates of awareness around artificial intelligence (AI) as it relates to undergraduate students at the British University in Egypt (BUE) and examines issues that inhibit the teaching of artificial intelligence, such as lack of consensus on AI tools and their ethical application in an academic environment. The purpose is to incorporate AI literacy into the information literacy program offered at the BUE library with a view to preparing scholars for responsible utilization of these technologies in line with AI guidelines. An action research approach was adopted allowing for continuous development through planning, performing, assessing, and reaction based on what happened.

Findings revealed that there were conspicuous gaps in students' understanding of AI specifically in terms of ethical considerations and practical applications, while there were inconsistencies in the AI usage regulations within different faculties. This means that there is the necessity for uniform guidelines that can help to provide explicit frameworks on ethics. The research also proposes an AI literacy program which was designed and tested during the research and it will be rolled out during the academic year 2024/2025, enabling learners to grasp fundamental aspects as well as uses of AI.

Besides, the study recommends adoption of AI-powered research tools with a view to improving quality of research work.

Keywords

AI literacy, information literacy, academic integrity, ethical use of AI, higher education, academic research, AI tools

Introduction

Information literacy is one of the most valuable abilities in the modern world. The British University in Egypt (BUE) Library has consistently taken the lead in ensuring that its community members are able to become information literate since inception. This paper seeks to examine how information literacy initiatives have evolved over time at The BUE Library with specific emphasis on the recent introduction of an artificial intelligence (AI) literacy program. To fully grasp what this integration entails, it is important to first know about BUE's Library information literacy program history.

The library started designing and implementing information literacy services in 2007 thanks to a British information skills manager who had garnered many years of experience working in college libraries across the UK. He played an important role in creating the library's first information literacy courses which aimed to prepare students and staff for academic search activities. Among other things, these programs taught students how to avoid plagiarism, referencing styles, making good use of search engines and other internet resources. Correspondingly, it consequently produced some guidebooks and instructions available online.

As the BUE broadened its academic disciplines and accepted more students, information literacy services had to adjust to suit the changing requirements of scholars. The library's team of information specialists responsible for imparting knowledge on how to correctly use information resources was split into different subject areas which facilitated effective communication and individualized support for various units. With this specialization, the library was able to provide more precise help and keep up with high standards of service delivery.

From 2012 to 2017, the library maintained its information literacy services that involved customized consultations and requests to cover many areas like research strategies, information evaluation and use of electronic resources. However, there was a challenge in spreading information awareness via the

library's information literacy program due to inadequate support from colleges and lack of student interest that resulted in poor turnout for information literacy sessions and workshops. As such, the library contemplated making the information literacy program an obligatory foundation course in the preparatory year. By 2018, a major milestone became evident when the library launched a wider reaching information literacy program fashioned by subject librarians. This program gained approvals from both Teaching and Learning Committee as well as university administration to be included as one of the mandatory components of research modules for students taking their preparatory year.

Since its formal integration of information literacy programs into the curriculum, the information literacy service has continued to expand its reach, serving the preparatory year students but also final year students, postgraduate students, and researchers. The library's commitment to equipping students and faculty with necessary information skills has played a significant role in their academic success.

Building upon its foundational initiatives, the BUE Library has modified its information literacy program to fit into the fast-changing information environment. In the past two years, subject librarians have identified this rising trend in students' academic practices regarding AI tools and the ethical issues it raises. Most students utilize AI tools to accomplish their coursework and conduct research, their understanding of the tools' capabilities, limitations, and ethical considerations has been inconsistent.

This research aims to develop the information literacy program at the BUE Library in response to challenges posed by the emergence of AI-enabled software tools. Specifically, this study will seek to identify and analyze issues surrounding these technologies. It will provide a comprehensive framework for modernizing current information literacy programs through providing an understanding of rapidly changing search technologies, especially those driven by AI. This framework would equip the BUE academic community with required skills that can enable them to effectively and ethically engage AI tools. Besides, we are going to look for ways to promote awareness as well as adoption of AI-based research tools among the BUE community.

Methodology

1. Research Problem

The study addresses the issue of diversity in the skills of BUE students and their awareness of academic considerations regarding the use of AI tools in academic

work. This discrepancy in AI knowledge hinders students' ability to effectively utilize AI technologies in their studies.

2. Research Objective

This research aims to improve the current information literacy program of the British University in Egypt Library by integrating AI literacy aspects. The program focuses on equipping students with the skills needed to use AI responsibly and effectively in their academic work, by providing a unified understanding of basic AI tools and ethical issues across all students.

3. Methodology

The action research methodology is effectively used in this study, which involves planning, acting, observing and reflecting in that order. In this way, patrons' experiences and practical examinations continuously improve the AI literacy program. The study will pass by four stages as shown below:

First stage: Planning and Initial Program Development

In the first cycle, a collaborative planning phase was initiated involving the subject librarians and academic staff to identify the specific needs of the academic community regarding AI literacy. Through consultations and a needs assessment questionnaire in an electronic format (Outlook Forms) targeting academic staff across all faculties, data was collected. The aim was to obtain an enactment in the past two years on how these tools are employed and their related challenges as well as what students think regarding AI literacy.

Based on these insights, an initial version of the AI literacy program was designed. The program aimed to cover essential aspects of AI tools, their academic applications, and the ethical considerations associated with their use. The content included interactive elements such as demonstrations and practical exercises tailored to the identified needs.

Second stage: Initial Implementation and Observation

Afterward, it was implemented during a trial time with few students to test its content and delivery. Observations were made during the session to determine how students interacted with it in order to notice any immediate problems regarding comprehension or participation.

The participants were given questionnaires before and after the session in order to assess their initial levels of AI literacy and how this had changed after attending the session. This helped in understanding how effective the program was as well as what areas needed more improvement.

Third stage: Reflection and Revision

Following the initial implementation, a reflection phase was conducted to evaluate the remarks and observations obtained during the trial run. During this period, the answers rendered by participants based on questionnaires were scrutinized closely and informal chats held to enable obtaining further insights on what was done well, as well as what could be made better.

Based on this reflection, several changes were made to the programme content and delivery techniques in order to improve clarity, engagement and general effectiveness of training. Among the modifications was rephrasing difficult AI concepts, including more interactive components, and matching session tempo with students' current learning requirements.

Final stage: Broader Implementation and Continuous Improvement

Beginning in the next academic year, wider implementation of an amended version of the artificial intelligence literacy policy will be done in a more inclusive manner involving a variety of students from various departments. The aim is to make sure that it keeps pace with what is required by the BUE's academic community through constant feedback and evaluations as the course progresses to reach out to an increasing number of learners. The program will also include orientation for librarians and university professors on how to continue providing it and adjust it accordingly as new developments arise in Artificial Intelligence.

Background

In recent years, interest in and utilization of generative artificial intelligence has surged. The advent of Generative Artificial Intelligence (GenAI) tools has significantly influenced academic research, transformed traditional approaches and created new opportunities for data analysis and interpretation. However, this development also raises critical questions and concerns regarding the suitability and ethics of their use.

Across the world, the initial concern in education was that ChatGPT and similar GenAI tools would be used by students to cheat on their assignments. Thus, undermining the value of learning assessment, certification and qualifications (*Generative AI in education, 2024*). While some educational institutions banned the use of ChatGPT, others cautiously welcomed the arrival of GenAI. Many schools and universities adopted a progressive approach believing that rather

than seek to prohibit their use, students and staff need to be supported in using GenAI tools effectively, ethically and transparently.

This approach acknowledges that GenAI is widely available, is likely only to become more sophisticated, and has both specific negative and unique positive potential for education. Globally, the primary concern in education was that ChatGPT and similar GenAI tools might lead students to cheat on their assignments, thereby devaluing learning assessments, certifications, and qualifications. (Unesco, Miao, F., & Holmes, W., 2023)

Libraries can provide access to a wide range of AI-based tools and services to assist scholars in effectively leveraging AI technology in their research or even offer AI-related programming and services. The traditional role of libraries as trusted partners in research communities provides libraries with an opportunity and responsibility to educate their users on AI-related topics. Libraries can educate users about AI and help them thrive in a society that uses AI. (Yaroshenko, T. O., 2023).

Many universities, for example, embraced a progressive strategy, arguing that rather than prohibiting their use, students and staff should be supported in utilizing GenAI tools effectively, ethically, and transparently. (Guillén-Yparrea, 2024) This perspective recognizes that GenAI is widely accessible, is expected to grow in sophistication, and presents both distinct challenges and unique opportunities for education. (UNESCO, 2023)

In academic pursuits, the incorporation of AI tools has the potential to revolutionize research assistance, literature search, resource analysis, and academic writing. For example, AI driven search engines can quickly search through literature databases to find pertinent sources saving researchers time that could be spent on other things. Additionally, AI algorithms can analyze intricate journal papers revealing patterns and insights that are often overlooked by human students. On the other hand, in academic writing AI-assisted tools can offer useful advice about grammar or style thus enabling students to produce excellent work. Beside that the use of artificial intelligence in education has the potential to fundamentally alter a wide range

of educational fields. In this regard, AI has reduced instructors' paperwork and workload, particularly in performing various instructing and teaching functions, allowing them to devote more time to their core function of educating as well as

other critical tasks.(*Sharma, R.C., 2019*). The following table explain the benefits of AI based tools:

Table (1) – Benefits of AI-based tools

Category	Description	Tools
Research Assistance :	Simplify the research process through providing ideas, recommending research methods, suggesting relevant topics and providing ideas. Additionally, help students automate simple tasks to save time and effort.	Chat GPT - Gemini - Microsoft Copilot - Perplexity - SciPub+
Literature Search:	By typing simple prompts or asking the tool a question related to the research topic instead of the traditional search techniques, AI technologies improve literature searches. In this way, they help students locate vital resources quickly without missing any important ones since they prioritize efficiency and relevance.	Scispace - Elicit - Connected Papers - Lit Maps - Consensus - Research Rabbit
Plagiarism Detection	Efficiently scan and compare student papers against a vast database of academic content, making it easier to identify instances of plagiarism and promote academic honesty.	Turnitin - Grammarly - PlagScan - Scribbr

Resource Analysis:	Extracting essential parts of information from books and scientific papers. This makes it easier to go through large amounts of information contained in information resources thus getting faster access to needed data and related information.	Scispace - Elicit - Mendeley - Adobe Acrobat Reader
Data Analysis:	Analyze large datasets quickly and accurately, enabling the discovery of patterns and trends that might be challenging to identify manually.	Statista - Julius AI - Google Cloud
Academic Writing:	Provide assistance in grammar correction, style enhancement, and formatting, helping scholars to produce polished, high-quality manuscripts that meet academic standards.	Grammarly - QuillBot - Linguix - Chat GPT - Gemini

At the moment, it seems that AI has invaded the world of academic research. It has provided researchers with new tools to advance knowledge. However, AI is not without its challenges in this domain. The first one is algorithmic bias caused by the non-representative nature of training data leading to skewed research results and falsified conclusions. Academics should be careful about what data they use and avoid biases associated with machine-generated insights resulting from AI usage. Furthermore, ethical issues especially on privacy and consent

need not be brushed aside when using human subjects under AI research programs.

The rise of AI tools used in higher education has raised questions over the authenticity of research because its application might result in loss of critical abilities among researchers. Some output from GenAI tools may be statistically significant but untrue correlations, inaccuracies or even sources that have been fabricated which makes it important for scholars to revamp any output from such tools. Furthermore, such tools are known to generate material that is under copyright law or have mistakes especially in non-English languages which presents legal issues about intellectual property and other ethical matters. It is dangerous to rely on AI-based tools too much since they might dull human judgment when it comes to guiding studies and analyzing results. (*Chaushi, B. A., 2024*)

The emergence of AI has made it difficult to maintain academic integrity as some researchers have turned to it as a means of committing acts of plagiarism and falsifying their works. In view of this, there is a need for clear institutional policies and educational programs that encourage responsible use of artificial intelligence. Researchers must keep their independence and analytical thinking abilities so that they don't end up being replaced by machine intellect. At the same time, as current lawsuits and legislation such as the General Data Protection Regulation emphasize, questions of ownership rights and privacy must be addressed if artificial intelligence is to be used in an ethically acceptable way in the world of higher education.

GenAI models are built from large amounts of data (e.g. text, sounds, code and images) often scraped from the internet and usually without any owner's permission. Many image GenAI systems and some code GenAI systems have consequently been accused of violating intellectual property rights. At the time of writing, there are several ongoing international legal cases that relate to this issue. Furthermore, some have pointed out that GPTs may contravene laws such as the European Union's (2016) General Data Protection Regulation or GDPR, especially people's right to be forgotten, as it is currently impossible to remove someone's data (or the results of that data) from a GPT model once it has been trained. (*Ruth, M. 2024*)

It can be difficult for the academic staff to distinguish between a student's own writing and the responses generated by a chatbot application. They may find it

difficult to adequately assess the student's understanding of the material when the student is using a chatbot application to provide answers to their queries. This is because the responses generated by the chatbot application may not accurately reflect the student's true level of understanding. (*Debby R. E. Cotton, 2024*)

Faculty may overcome this problem, they can prevent plagiarism by educating students about it and explain what plagiarism is, why it's unacceptable, and the consequences. This can involve including information about plagiarism in course materials, discussing it in class, and outlining the repercussions. Faculty can also require students to submit a written statement confirming the originality of their work and disavowing the use of AI language models. This approach can deter the use of AI tools and hold students accountable for their work

Universities also can utilize plagiarism detection tools, there are numerous tools available that can assist in spotting cases of plagiarism in student assignments. These tools scan written content for matches with existing sources, helping to uncover instances of plagiarism that a human reader might miss. Moreover, it's vital to monitor student assignments closely, particularly when chatbots can produce realistic and coherent text, this may include carefully reviewing their work, requiring students to present their projects in class. In addition, verify sources and citations, since chatbots cannot perform original research or generate new ideas, any work produced by them is unlikely to include accurate citations or references. Reviewing the sources and citations in the work can help determine if it was likely created by a chatbot.

Furthermore, academics should check for factual accuracy, while AI language models can produce coherent text, they may not always be factually correct. Reviewing the essay for factual errors or inconsistencies would be vital to indicate that it was generated by a machine. (Hopp, C., & Speil, A., 2021)

Discussions

The research progressed through four main phases, of incorporating AI literacy into the current information literacy program until the wider execution and continued improvement of that program. The first phase of this research concentrated on planning and developing the BUE Library information literacy program by embedding AI literacy components. This was a crucial step towards satisfying the academic community's needs for AI literacy.

To guarantee that program design was very close to the real needs and different problems faced by the community through their personal experience with AI tools as well as students' interactions with them over the last two academic years, a collaborative approach involving the subject librarians and academic staff played a very crucial role. The use of interviews and questionnaires with professors from different departments at the university helped identify needs and obtain a well-rounded picture of the present situation involving AI tools in education, plus gaps in this type of knowledge possessed by both staff and students. The questions posed during the questionnaire as well as interviews were classified into three major categories:

1- Awareness and Personal Experience with Artificial Intelligence Tools.

Professors from different faculties have a general awareness and understanding of AI tools. About 29% of them make use of chatbots such as *Chat GPT*, *Gemini* among others for academic purposes, while around 27% use them for academic writing. Additionally, 25% of them include these systems during the entire learning process (E.I Fig.1). It is significant to note that 67% of those surveyed agree that AI has greatly improved the quality of both scientific research as well as the educational process.

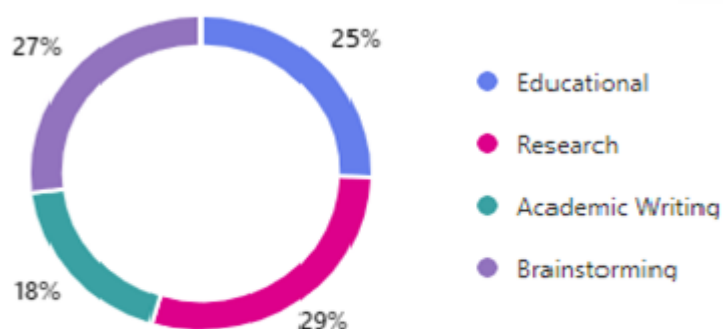


Fig. 1 The purpose of AI tools usage

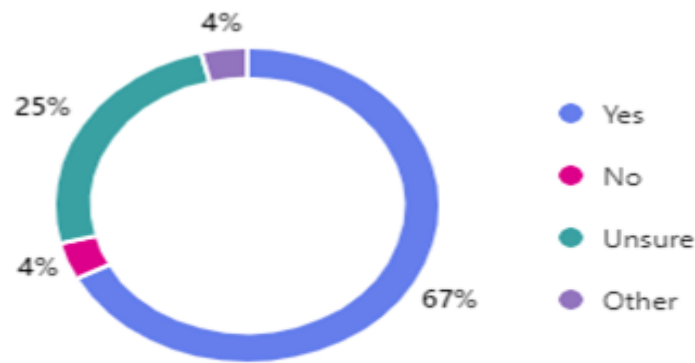


Fig. 2 AI tools improve the quality of research & education.

2- Guiding Principles and Concerns Regarding AI Tools in Education.

The research was aimed at determining the recommended procedures formulated by university on usage of artificial intelligence (AI) devices in academics so as to ascertain that program content does not conflict with the guidelines established by university. The results showed considerable variations in answers given by respondents regarding whether or not there exists official rules set forth by universities themselves or the Supreme Council of Faculties, 56% saying no principles existed while 44% affirmed that definite guidelines did exist.

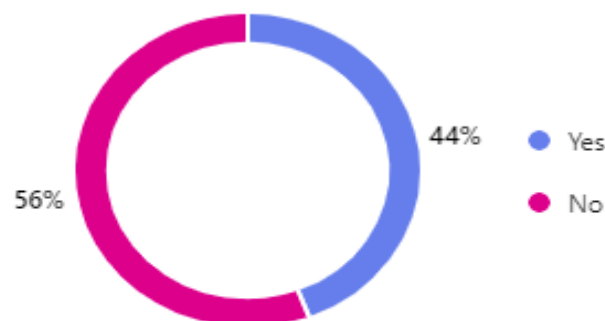


Fig. 3 Official guidelines regarding AI tools usage.

Based on what we got from our interviews, there seem to be no common or clear rules/guidelines on this issue; instead, the responsibility is delegated to facilities individually. For instance, the College of Business Administration has laid down specific guidelines with regard to the use of AI in scientific research. Furthermore, students' use of AI tools also varies across faculties where usage limits range from 20% up-to 60%. Importantly, when a student passes such limits as detected by *Turnitin's* plagiarism checker they will have to appear before a committee to prove that they employed an AI tool mostly for text rewriting rather than generating ideas or concepts without any authentic effort.

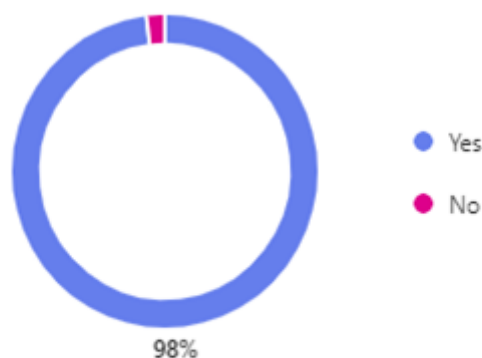


Fig. 4 Concerns about academic integrity.

Professors were very much worried about integrating AI tools into the process of education as 98% showed doubts over students' usage of AI. These worries were broad-ranging; the most reported one was plagiarism (28%), then an enormous dependence on AI for assignments and projects (25%), cheating in exams as well as projects (23%) and alteration of work produced through AI use (22%). Moreover, interviews held with academics also bring out these problems since they have noted that at times students rely completely on these computerized mechanisms without evaluating or researching what these systems generate. Specifically, these educators express concern over students' inadequate knowledge and comprehension of the moral application of artificial intelligence devices which can disrupt the ethics of intellectual endeavors completely.

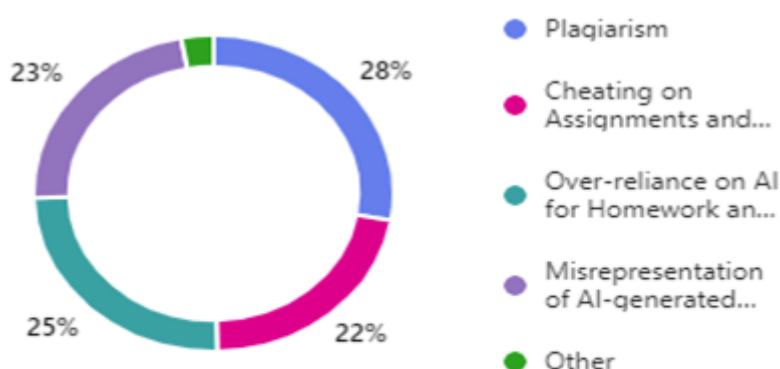


Fig. 5 Types of ethical concerns for academics.

Thus, it was considered essential to incorporate relevant ethical issues of Artificial Intelligence use within scientific research in the information that will be provided by the library. The investigation into the ethical issues surrounding student utilization of AI tools revealed that such matters as intellectual property rights and academic integrity (31% and 30%, respectively) were the most

important ones while fear of excessive reliance on technology occupied the third place among them (27%). Consequently, this emphasizes how vital it is to include these considerations when addressing AI literacy content by libraries in order to promote good practices that are consistent with ethical norms in academia. Additionally, an aspect related to better practices and ethical issues regarding AI tool integration within teaching activities is covered within this concern.

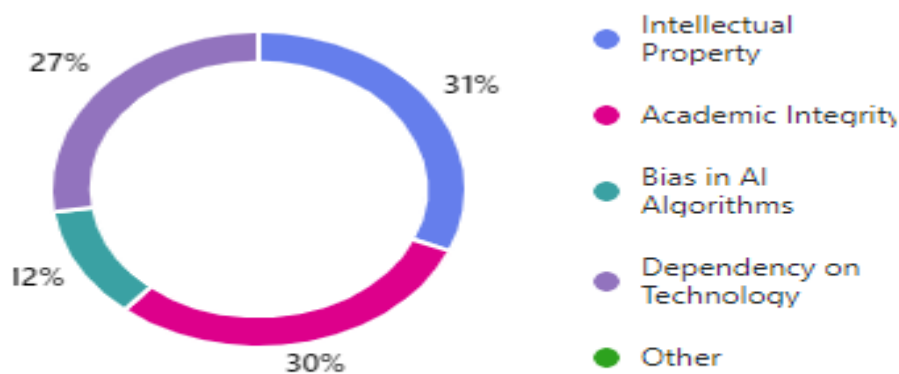


Fig.6 The ethical concerns

3- Role of the Library's Information Literacy Program in Promoting AI Awareness

In this part, we have examined how the library's information literacy program can help to create awareness among and educate the academic community about AI tools and their applications. To this end, some of the key topics that could be taken care of by the AI literacy program were determined. The poll revealed that both learning to use AI tools and applying Artificial Intelligence in research as well as writing hold equal share with 44% of respondents favoring each one. What followed next is ethical usage of AI at 42% problem-solving using Artificial Intelligence accounts for 35% while prompting made up some 30%. These findings were significant in influencing the curriculum for the AI literacy program.

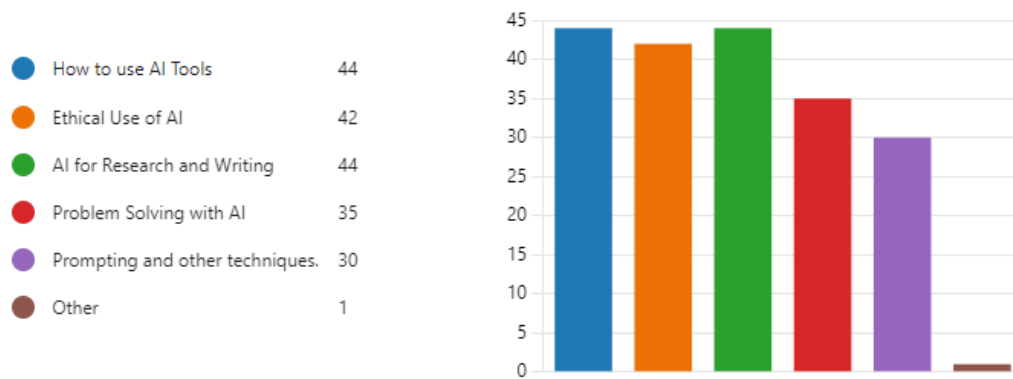


Fig. 7 Topics covered by AI literacy program

Additionally, the academic’s reactions on the most appropriate strategies for learner engagement and participation shaped the design of the program. The replies revealed an equal preference (29%) for delivering the program as library training workshops or online tutorials. This feedback helped determine what mode of delivery would maximize student involvement and effectiveness in teaching them about artificial intelligence tools.

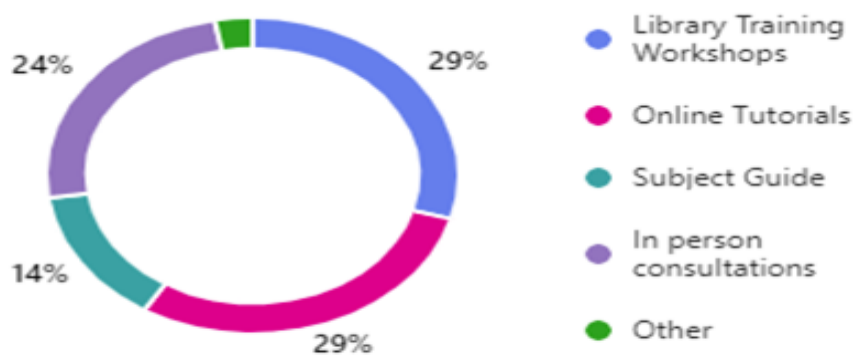
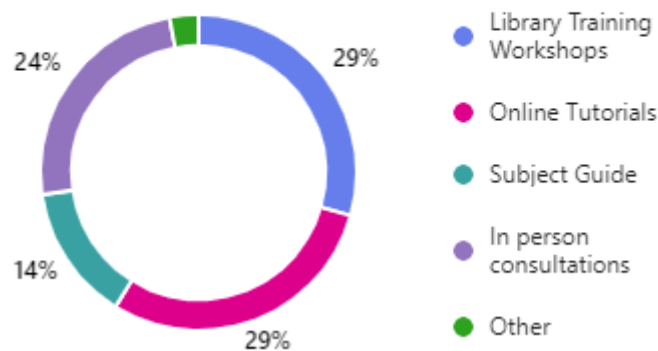


Fig. 8 The delivery method

The findings led to the construction of the initial version of the AI literacy program. The main things that the program discusses are fundamental aspects of AI tools, their applications in academia, the ethical considerations associated with their use and the basic knowledge about large language models (LLMs). These will be presented through an online library workshop meant for students who are interested in undergoing this training and are willing to volunteer.

What type of support or resources would help yo...



After studying such results, the initial version of the BUE Library AI literacy was designed as follows:

AI Literacy Session: Tailoring to the Needs of Students:

The AI literacy program was crafted to offer both theoretical understanding and practical utilization of AI tools, taking into account the academic requisites and worries of both faculty members and learners. The main objective was to improve information literacy and AI competencies among students, paying particular attention to incorporating AI into research and learning. It was organized into six parts, each concentrating on particular abilities and knowledge domains important for academic achievement in a world driven by artificial intelligence.

1. Developing Effective Search Strategies and Resource Evaluation Skills

- This part focuses on information literacy, a vital competency for students engaged in assignments and academic pursuits. In this segment, detailed instructions on how to carry out academic research were provided, beginning from the definition of the research topic to identification of relevant keywords, locating materials through internet and library collection.
- In an effort to improve resource evaluation, *CRAAP* (*Currency, Relevance, Authority, Accuracy, Purpose*) test is discussed in this section as it is a systematic method of evaluating source quality and reliability. This section was important for students wanting to get a brief explanation of important information literacy cornerstones.

2. Introducing Key AI Concepts

- Recognizing the varied levels of AI knowledge among participants, this part offered basic understanding concerning AI technologies. In simple and intelligible terms and definitions for *Artificial Intelligence (AI)*, *Machine Learning (ML)*, *Natural Language Processing (NLP)* and *Computer Vision* will be discussed. By using real life examples such as websites and software that utilize these technologies (e.g. *Google Translate* for NLP or facial recognition for Computer Vision), participants will be able to tie theory to practice.
- The purpose of this part was to provide basic literacy needed to understand artificial intelligence tools to students who do not have any prior knowledge regarding AI while preparing for higher-level conversations in later parts.

3. Understanding Large Language Models (LLMs)

- With the rise of AI-powered tools, It was critical for the session to elaborate on how Large Language Models (LLMs) work. LLMs were explained in brief to the participants regarding their architecture, the huge datasets that train them and their ability in producing human-like texts.
- By explaining how these models work, this will help demystify AI tools such as *ChatGPT* and similar applications, addressing the common curiosity of students about the underlying processes that make AI tools effective.

4. Academic Considerations: Ethics and Accuracy

- This section touches on important areas such as academic integrity, bias and fairness in AI outputs, intellectual property rights and the risk of *AI hallucinations* (when AI generates incorrect or fabricated information).
- Students will be prompted to critically evaluate the capabilities and limitations of AI tools to ensure carefulness while using such tools. This also draws attention to the need for user feedback to improve and develop A.I.

5. Demonstrating AI-Powered Tools for Research

- Emphasizing on how much AI powered research tools could benefit students, this section illustrates some practical examples of AI-based tools that include *Perplexity*, *SciSpace*, *Elicit* and *Connected Papers*. Each tool will be presented alongside an explanation of how it could be used to carry out

a specific research task ranging from literature discovery to summarizing academic papers, academic writing and other utilization domains.

Table (2) highlights AI tools that were discussed during the session

AI Tool	Benefit Category	Utilization Domains
Chat GPT & Gemini	Academic Writing - Research Assistance	Brainstorm Ideas, inquire about issues for clarification, structure essays, generate concepts and improve their language skills.
Scispace	Resource Analysis - Academic Writing - Literature Search	<ul style="list-style-type: none"> - Break down complex academic papers into simpler concepts. - Search for Academic Literature easily through asking the chatbots questions or providing simple prompts.
Elicit	Literature Search - Resource Analysis	<ul style="list-style-type: none"> - Finding relevant academic papers. - Search for academic resources using research questions. - Organizing their literature review.
Connected Maps	Literature Search - Research Assistance	<ul style="list-style-type: none"> - Deep resource discovery through recommending papers based on keywords, paper title, or DOI and viewing each paper's prior and derivative papers.

Perplexity	Research Assistance - Literature Search - Resource Analysis	<ul style="list-style-type: none"> - Collect carefully chosen answers to research questions. - Quickly find relevant background information on research topics, including their sources.
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6. Introduction to Prompt Engineering

- In this section, we focus on how to communicate with AI systems effectively using prompt engineering, as AI tools frequently demand interaction through prompts. This session includes *zero-shot prompting* (asking an AI to perform tasks without any prior examples) and *few-shot prompting* (offering a few examples with which the AI can be directed).
- Furthermore, *chaining prompts* – separating intricate assignments into uncomplicated sequential prompts with an aim of enhancing AI’s performance is among the advanced strategies that will be introduced to participants. This section addresses the need for practical skills in interacting with AI tools.

Implementation of the Session

By this point the initial version session design was complete and research progressed to the third stage:

The AI literacy session was implemented as an online workshop to accommodate a diverse group of students from various academic years. This format allowed for broader participation, ensuring that students from different levels of study could engage with the content regardless of their location or schedule.

Format and Length

- The session was facilitated through an online platform thus making it available to learners across various levels of study starting from first year students ending at final year ones. It is for this reason that it took the form

of internet based learning in order to encourage more people to attend and also cope with the different academic schedules.

- In order to sustain participants' attention as well as make provision for their queries or ideas sharing spontaneously, live Q&As were adopted as an interactive instrument.
- Screen-sharing tools were utilized to demonstrate AI-powered research tools, making it easier for participants to follow along with hands-on examples.
- The session was structured as a 120-minute workshop with both pre-session and post-session surveys to ensure that we gathered valuable information and opinions about the students' perceptions, as well as insights to guide the further development of the program.

Announcement and Volunteering Process

The session was advertised through the library's website, social media and newsletters. Comprehensive visibility was ensured when digital flyers were sent to departments and academic groups. An online form was used by students to register their attendance for the workshop and also volunteered to participate.

Session Survey Results and Program Refinement

It was essential to gauge the students' familiarity with AI tools, their usage habits, and their understanding of these technologies. The pre-session questionnaire provided clarity on this, which indicated that 54% of respondents were already employing chatbots while another 18% used image generation instruments. Students stated that they used AI for different purposes, among which included 38% on research, 23% on brainstorming, and lastly 15% on writing tasks. The results showed that most students mainly use AI for generative activities like content production but have little knowledge about AI-supported research tools implying low levels of AI literacy among them. Moreover, 86% of the respondents said never having taken part in any preceding workshops or orientation about academic application of AI tools; hence there is a need to structure educational sessions.

Given that students had a poor command over AI in scholarly context, 90% of them started out as either uncertain or lacking trust; consequently only 10% were confident about their abilities. This circumstance probably arose from absence of formal academic directives or guidebooks by their faculties. Consequently, the program encompassed an explicit portion whose focus was on educating students on efficient use of AI in the academic domain, specifically emphasizing

tools supported by artificial intelligence for research purposes. In the survey administered after the session, the answers revealed considerable progress since 60% of participants indicated that they were now capable of using artificial intelligence tools accurately within an academic environment.

The students' understanding about the ethical considerations of using AI was largely absent because 57% did not have any idea while only 43% had some knowledge at the back of their minds. Seeing this gap, plagiarism and intellectual property issues were laid bare so that students could understand how and when to use AI in their academic works. Moreover, we revisited the issue of evaluating resources by viewing AI-generated content as an information source that deserves the same attention as other academic materials. This emphasis on ethics was fruitful as shown by a survey done after the session indicating that 80% of them agreed with an assertion that they now comprehensively appreciated ethical dilemmas and duties in utilizing AI for academic research and writing.

Before the session, 43% of the attendees knew little or nothing about prompt engineering and its various techniques. However, the post-session survey showed an amazing transformation as 100% of participants showed they had knowledge of what prompt engineering is and its applications. This great progress in awareness can be considered as evidence that the event had bridged the gap in knowledge at least for some time. Consequently, no changes were deemed necessary for this section of the session while several changes were made regarding the following two main points:

- The section on *Large Language models (LLMs)* was found to be complicated by the students. The introductory session put emphasis on technicalities that showed how LLMs are a subset of *Foundation models (FMs)* and broke it down into three key components, namely data, architecture, and training. Based on feedback however, we thought it would be better if we simplified it for them using a figurative language. We avoided technical jargons and used conceptual metaphors instead which made learning easy for students as we linked these components making sure they do not get lost in terminologies.
- From students' feedback, we went over again the matter of resource evaluation, stressing that all AI generated materials must be subjected to scrutiny just like any other academic material. This demand for more understanding underlined the necessity to maintain resource evaluation when discussing the credibility of AI tools. Therefore, we opted to include resource evaluation particularly while concerning accuracy of these tools.

Broader Implementation and Ongoing Improvement

Upon analyzing the experimental outcomes and diverse academic perspectives on AI tool utilization in academic research, the authors formulated a proposal to embed the AI literacy within the information literacy program as a prior objective of this research and to develop an initial implementation strategy for this objective. The program will be provided during the next academic year 2024/2025 for the BUE students and aims to provide them with the required knowledge of AI concepts, technologies and applications. It also seeks to encourage them to think critically and be ethically conscious about AI. Apart from this, it will assist in gaining practical abilities on how to use different AI tools broadly.

Library sessions will be delivered and focus on developing effective search strategies and resource evaluation skills, introducing key AI concepts, and understanding large language models (LLMs). Participants will explore academic considerations, particularly ethics and accuracy in research. Additionally, the librarian will demonstrate AI-powered tools for research and provide an introduction to prompt engineering.

Initially, we will conduct pilot workshops or seminars to boost AI proficiency among BUE academic staff as a means of collecting opinions which will be used to make improvements. Afterwards, we will incorporate the AI knowledge into already existing information literacy sessions, tutorials and research classes. After a special training session will also be conducted for BUE librarians to enhance their capabilities in these areas.

Delivery Methods would change depending on different library sessions, which would entail theoretical explanations of AI concepts, its tools and practices using practical exercises with AI tools as well as giving continuous consultations. Furthermore, establishing an online resource via a library's website may prove imperative in this regard.

Promoting the Program by announcement via the library website and the BUE library social media portals is essential to raise awareness about AI literacy offerings.

By utilizing continuous surveys and evaluations to gauge participants' comprehension and perspectives on artificial intelligence (AI) the learning

outcomes will be measured. Continuous iteration and improvement will be implemented based on feedback and advancements in AI technology. Lifelong learning will be encouraged, motivating students to pursue further education in AI through online courses, conferences, and research opportunities. Additionally, ethical considerations will be emphasized, highlighting the importance of responsible AI development and usage throughout the program.

Integrating AI literacy into an information literacy library program will empower users to navigate the evolving landscape of information and technology responsibly. By following this plan, Universities will make certain that their communities are in a position to comprehend and engage with AI productively.

Conclusion

This study aimed to develop a program for AI literacy as part of BUE Library's ongoing information literacy efforts specifically aimed at meeting the increasing need for awareness on the ethical implications and tools of AI within academia. Major gaps in students' comprehension about AI were noted especially with regard to its ethical use and practical applications therefore there was an inconsistency when it comes to guidelines on the use of AI. Thus different faculties have put varying levels of permissibility ranging from 20% to 60%. This difference emphasizes that it is necessary for clear ethical frameworks through formalized uniform policies which may be instigated by the Supreme Council of Universities and are meant to foster responsible AI utilization in research (college) and education (learning).

In addition to policy development, In this study, the AI literacy program stands out as an important step towards enabling future learners, scholars and teachers to adeptly manage this dynamic technological terrain. On the other hand, information literacy denotes a cluster of competences that enable people to determine when they require data, find what they want, assess it, and apply it properly. For this reason, students must acquire these abilities since artificial intelligence (AI) technology is quickly reshaping our methods of accessing and utilizing information. (ALA, 1989)

At last, this research highlights how critical it is for academics and librarians to work together more efficiently if artificial intelligence (AI) tools are to be used successfully in academia. The responsibility of publishers is also essential since they need to introduce AI tools in their databases where research operates smoothly and efficiently. In order to make these technologies accessible fairly,

libraries are encouraged to incorporate AI based research tools in their services, thus assisting the academic community in achieving its scholarly goals.

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