COMMONWEALTH of LEARNING

Policy and Practice of Artificial Intelligence in Teaching and Learning at Post-secondary Educational Institutions in the Commonwealth

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The Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to promote the development and sharing of open learning and distance education knowledge, resources and technologies.

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List of Abbreviations

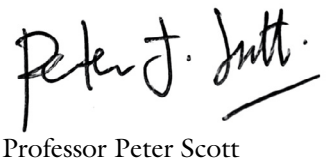
AI	Artificial intelligence
APA	American Psychological Association
AR	Augmented reality
ASU	Arizona State University
COL	Commonwealth of Learning
ECAR	EDUCAUSE Center for Analysis and Research
ICT	Information and communication technologies
IMF	International Monetary Fund
IP	Intellectual property
ITS	Intelligent tutoring system
LLM	Large language model
LMS	Learning management systems
NACOME	National Advisory Committee on Mathematical Education
NLP	Natural language processing
UNESCO	United Nations Educational, Scientific and Cultural Organization
VR	Virtual reality
WICHE	Western Interstate Commission for Higher Education

Foreword

Teaching machines, as they were originally called, were first introduced in the 1920s. However, discussions around the use of artificial intelligence (AI) in education started in the 1960s, when natural language processing (NLP) systems started to appear. Since then, we have seen a huge growth in this technology, including adaptive learning and intelligent systems such as IBM Watson and similarity detection software that uses NLP. In late 2022, the emergence of generative AI (GenAI) created huge disruptions in all walks of life, including education and training. Suddenly every learner with Internet access also had access to AI tools, a shift that had an impact on both instructors and the universities in which they worked. For example, AI has the potential to change the way in which assessment practices are conducted in universities, and many teachers had to rethink their entire approach to assessment. The initial reaction from many universities was to put restrictions on the use of AI for teaching and learning, while others started providing guidance on how best to use it and what not to use it for, especially in teaching and research. UNESCO published some guidelines on the ethical use of AI in teaching and learning to help governments address the issues associated with using it.

At the institutional level, however, there is scant information available about the current use of AI in teaching and learning. Its use is particularly pertinent in the developing countries of the Commonwealth because, unless we focus on expanding access to digital tools — including the Internet and AI tools for teaching and learning — to empower teachers and students, there is every possibility that these new tools will further exacerbate digital inequity. In order to understand the status of AI in policy and practice in teaching and learning, we at the Commonwealth of Learning conducted a survey among post-secondary institutions across the Commonwealth. This report contains the findings of that survey, and it is no exaggeration to say that some of them are alarming. For example, while many institutions are using AI in one form or other, about 65% have no policy or strategy to address issues related to using AI in teaching and learning. This report highlights the challenges identified by the institutions, including a lack of AI-related capacity among administrators, concerns about academic integrity and a lack of policies related to AI in teaching and learning.

This report is a step towards systematically addressing the issue of integrating AI into teaching and learning in the educational institutions of the Commonwealth. I urge leaders in these institutions to treat this issue as a priority and to develop policies and guidelines for students and teachers to help them use the available AI tools appropriately and with caution to enhance the quality of learning and teaching overall.



Professor Peter Scott
President and Chief Executive Officer
Commonwealth of Learning, Canada.

Executive Summary

The wide availability and rapidly developing functionality of generative artificial intelligence (AI) means this technology has been making waves in a variety of sectors around the world recently. In the context of higher education, generative AI is creating new opportunities for engaging with and creating knowledge. With its current ability to generate texts and images, it may be used by faculty, staff and learners to source ideas, build resources or even create complete works.

However, generative AI also presents significant challenges. AI tools produce new texts and multimedia by drawing on the existing corpus of available data and so may replicate social biases, inequalities and stereotypes and omit critical balancing information when generating these new works. In addition, generative AI models are built on publicly available texts and images and, as a result, there are concerns about copyright, intellectual property (IP) rights and data ownership. User prompts provided to AI tools may also be retained as part of each AI model, which raises privacy concerns for individuals and institutions.

65% of institutions in the Commonwealth do not have any policy or strategy for addressing AI in teaching and learning.

Since the first generative AI tools became widely available in 2022, educational institutions have seen increasing interest in AI tools among faculty, staff and learners. This interest has created the challenge of how to integrate or manage the use of AI in educational institutions. Concerns about academic integrity among learners appear paramount. Some institutions have banned or condemned the use of AI, some are exploring the use of AI detection tools and others are seeking to embrace AI as a new tool for knowledge production and creativity.

In light of the rapid evolution and advancement of AI in higher education, this report presents the state of policy and practice relating to AI in the context of teaching and learning in countries throughout the Commonwealth. It draws on data gathered from a survey conducted among staff and faculty from post-secondary educational institutions in the Commonwealth.

The survey findings indicate a clear need for policies to guide the acceptable and ethical use of AI among faculty, staff and learners. Furthermore, all stakeholders need training and development to navigate the use of AI in teaching and learning. Representatives from institutions throughout the Commonwealth expressed a desire for a more strategic and widely available framework for policies relating to AI in higher education that they could adopt or adapt as required. The survey results also suggest that Commonwealth countries may benefit from establishing a network to encourage ongoing discussion about AI best practices and policy and help members to collaborate on creating professional development resources that could be shared among institutions.

Introduction

The field of artificial intelligence (AI) has a rich and storied history. First proposed as a field of study in 1956 by the US computer scientist John McCarthy, the term was used to describe an imagined context in which human aspects of creativity, cognition, learning and problem-solving might be simulated by machines (Russell & Norvig, 2003). AI represents the simulation of human intelligence processes conducted by machines, and more specifically, computer systems. Over the years, machines have become more sophisticated. Predictive AI applications permeate many aspects of modern popular culture through recommendation services such as those offered by YouTube, Amazon, Spotify and Netflix; applications that understand human speech are used by voice assistants such as Google Assistant and Siri; and self-driving vehicles and AI that can play strategic games such as chess are becoming more widely available. In addition, generative AI applications have become widely available to and popular with the public. They go beyond predictive AI applications in that they can create new text, code, images and audio and video artefacts based on a user prompt.

Experiments on the application of AI in education have been ongoing for quite some time. The earliest example was probably ELIZA, an early natural language processing (NLP) program (Weizenbaum, 1966). Such systems soon became known as intelligent tutoring systems (ITSs) (Sleeman & Brown, 1982). Reviews of the research in this field reveal a trend towards applications for assessment, tutoring, learning analytics, developing course material and collaborative learning platforms and intelligent virtual reality; they also reveal concerns and discussions about the ethical considerations associated with these applications (Guan et al., 2020; Hinojo-Lucena et al., 2019; Kabudi et al., 2021; Luckin et al., 2016; Tlili et al., 2023; Yan et al., 2023).

Generally, there is an acceptance among post-secondary education institutions and researchers that AI has transformative applications in teaching and learning and could augment learners' educational experiences through personalised, adaptive and interactive approaches. Some notable applications of AI in teaching and learning include, but are not limited to, the following:

- ITSs that provide personalised instruction and feedback to learners (see, for example, AI Tutor Pro[1]).
- Adaptive learning systems that provide a customised learning experience based on individual learners' needs and level of competence.
- NLP and image-generation models that can create educational content and assessment tools.
- AI-powered language learning platforms that leverage speech recognition, NLP and machine translation to help learners acquire new language skills and translation capabilities.

1 See https://www.aitutorpro.ca/

- Intelligent agents and chatbots that can support learners by answering questions, providing explanations and offering guidance.
- AI-enabled analysis of learner interaction and engagement on learning management systems (LMSs) and platforms could identify learning patterns, predict learner performance and provide data-driven insights for instructional improvement.
- Immersive learning environments created using virtual reality (VR) and augmented reality (AR), coupled with AI may enhance understanding and knowledge retention.

The release of ChatGPT[2] (Generative Pre-trained Transformer) by OpenAI in November 2022 was a paradigm shift in terms of access to AI. It enabled anyone with a web browser and an Internet connection to access and query a large language model (LLM). The emergence of widely available generative AI such as ChatGPT has accelerated discussions about the potential and pitfalls of using AI in teaching and learning (Steele, 2023). Search queries for ChatGPT exploded in the first couple of weeks of December 2022 as people began to access the service and experiment with its capabilities. OpenAI reported that it had reached 1 million users within just five days of launching the tool, faster than any social media tool to date. OpenAI started with, and continues to offer, a free version of the tool, which requires only a user login. The free service uses a less optimised version of the LLM and does not guarantee availability during peak periods. A ChatGPT Plus account currently costs USD20 per month and promises better availability, the most up-to-date model and additional plugins and tools that are not available through the free service.

Generative AI does, however, have its challenges. Models produce text based on the existing corpus of available data, so generative AI may replicate social biases, inequalities and stereotypes and omit critical balancing information when responding to prompts (Kim, 2021). Furthermore, generative AI models are described as being built on publicly available texts, but there have been examples of texts that are only available behind paywalls or are only commercially available also being used by the models. This has resulted in several lawsuits about the AI companies' potential or alleged breach of copyright or IP rights (Gal, 2023; Roth, 2023). As with other freely available user-generated content services, inputs and prompts submitted by each user are retained to improve the quality of the model and the results it produces. This has raised privacy concerns, as user data then becomes a data input for the next AI model (Gal, 2023). Lastly, OpenAI has been criticised for contracting with companies that engage in unethical and exploitative labour practices and pay workers low wages to conduct content moderation tasks, which often exposes them to toxic content (Perrigo, 2023). Other technology companies have also launched LLM tools. Google developed Bard — now called Gemini — and Anthropic, backed by Amazon, launched Claude. As of early 2024,

2 See https://chat.openai.com/

OpenAI tools, including ChatGPT, are available in all Commonwealth countries;[3] Gemini is widely available through a web browser in more than 150 countries[4] and expanding rapidly; and Claude is available in 44 Commonwealth countries.[5] These large AI models require a stable Internet connection to work and typically offer both a free and a premium, paid version of their service. Considering the varied geographical availability and the cost of access to premium models, there is a significant risk that the existing digital divide in terms of access and availability around the world will continue to widen.

Technological Innovations in Higher Education

AI was largely invented and developed in higher education institutions, but more recently it has been popularised by — and created substantial profits for — large companies such as Anthropic, Google, OpenAI and Microsoft. Higher education institutions are responding to this paradigm shift, which has resulted in the wide availability of AI tools, by developing policy, altering learning designs and, in some cases, exploring tools that can detect or block the use of AI tools. It is not uncommon for educational institutions to resist new technologies when they first emerge (Wu et al., 2024). The academic world treated the printing press, calculator, Google search, spelling and grammar checking tools in word processors and Wikipedia — to give only a few examples —with suspicion and resistance when they were first introduced. Academics raised concerns about the impact that these technological innovations might have on teaching and learning. In the case of calculators, for example, the device managed mathematical processes that a learner previously processed manually. As calculators became commonplace in the early 1970s, there was significant debate about their use in the classroom. In the mid-1970s, the National Advisory Committee on Mathematical Education (NACOME) in the United States deemed calculators to be appropriate for all learners beyond Grade 8, and by the end of the decade it was recommending that all learners should use calculators for mathematics lessons and exercises (Watters, 2015). By that time, calculators were mainstream in

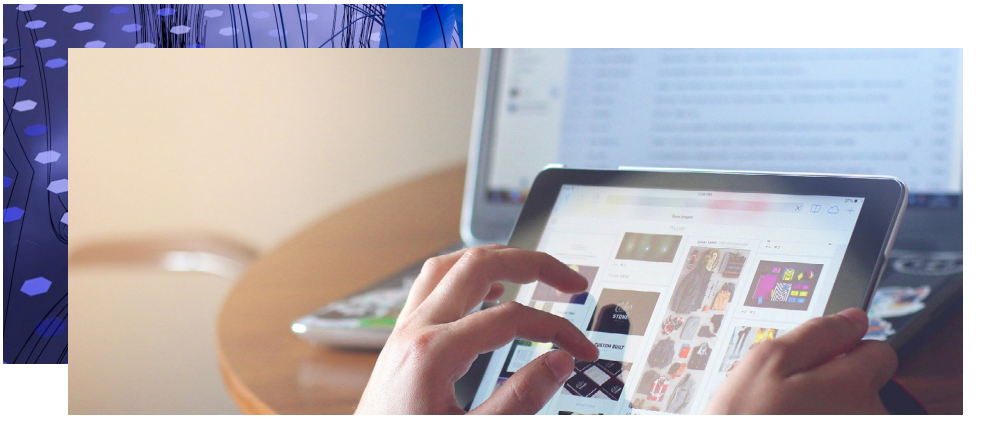
3 See https://www.col.org/member-countries/
4 See https://support.google.com/gemini/answer/14579026
5 See https://www.anthropic.com/claude-ai-locations

society and the workforce, so higher education teaching and learning policy had to adapt to embrace this new tool that professionals were increasingly using.

Similarly, computer-based editorial assistance has long been available in tools such as Microsoft Word, Excel and PowerPoint. This assistance initially took the form of spellcheck, which identified and offered corrections for misspelled words, followed by more advanced editorial tools that checked for grammar and style. At one time, the use of these tools was contentious among some university policymakers. However, they quickly became standard and acceptable tools for anyone who was writing or editing text. More recently, third-party tools such as Grammarly have emerged. These are enhanced spellcheck and editing tools that can be linked to office productivity software or any text field on a user's device and help a creator to identify spelling and grammar errors after they have finished writing their text.

Generative AI's strength is that it allows a user to create text and multimedia based on a query, thereby assisting not only with the review stage but also with the actual creation of text. ChatGPT can now produce text-based responses to queries that are compellingly accurate and customised by user input. Some researchers have noted that the current version of ChatGPT could likely pass the Turing test, which requires a human to determine whether they are interacting with a human or a computer (Biever, 2023). The latest offering from ChatGPT, a natural voice interface that allows the user to speak with the AI service in a conversational way, poses a further challenge to the Turing test, as the voice and demeanour of the voice assistant far outperform those of many of the other available voice assistants and provide a very convincing conversation partner.

The next iteration of AI tools will go even further by providing users with templates, starter text or generated multimedia so that they are not faced with a blank page, spreadsheet or slide when they embark on a new project or text. The fusion of AI tools with widely available office productivity software is currently underway. Microsoft recently launched a paid subscription that will give users access to its AI-powered Copilot Pro in popular content creation tools such as Word, Excel and PowerPoint. The tools that are currently available to assist with editing in office productivity software may soon become available by default to both learners and instructors. Google, too, is rapidly deploying AI tools in its productivity software,



which means that most learners will soon have ready access to AI that can help them with writing tasks and perhaps even make suggestions at the word or page level. Essentially, learners will no longer need to use a separate service like ChatGPT to access AI tools, as the tools will be built right into the software and platforms they already use. Many software vendors of creation tools are now using the language of AI in their marketing materials. With this level of integration into productivity software, some researchers have suggested that we are approaching a time in which a creator of digital media may not even be aware that AI is supporting their work (Chan, 2023b). This has significant implications for educational institutions, and, as human-machine creation and collaboration become ever more intertwined, it challenges the way in which educators have traditionally valued, understood and conceptualised learners' original work (Luo, 2024).

With AI rapidly becoming a widely available tool for knowledge production, there are calls to develop and offer curricula in AI literacy to help learners make best use of it. Such curricula would need to acknowledge and recognise not only AI's potential but also its inherent limitations and the ethical approaches that are required for its responsible use (Bozkurt et al., 2023; Ng et al., 2021). Developing such a curriculum will be a monumental challenge for educators, as the models and abilities of AI systems are rapidly and consistently being improved on and are updated centrally in the cloud for rapid deployment. The inner workings of AI systems are increasingly opaque for individuals outside of AI research, which has led some to refer to these systems as "black boxes" that both enable and necessitate new approaches to teaching and learning with AI (Bearman & Ajjawi, 2023).

AI in Education: Policy Developments

The availability and impact of ChatGPT has excited many educators and learners around the world and expanded aspirations to use AI in teaching and learning, but it has also led to concern about academic integrity and assessment design. AI tools are being released and upgraded with advanced features at a breathtaking pace, and the International Monetary Fund (IMF) has suggested that the increasing availability of AI tools may be an opportunity to improve the access and quality of fundamental services such as education (Cazzaniga et al., 2024). Similarly, UNESCO (United Nations Educational, Scientific and Cultural Organization) has reported on how AI could support teachers and potentially bridge the human capital divide in regions that lack qualified educators (Miao et al., 2021). There has also been some speculation about AI's potential to provide personalised learning experiences that could be designed and delivered through AI algorithms, content creation tools and intelligent agents (Cazzaniga et al., 2024). The speculative potential is vast. It looks entirely possible that AI tools could support both learners and teachers if they choose to harness the power of AI for personalisation, learning, skills building and developing competences.

In 2021, UNESCO released a publication that contained guidance on using AI for educational policymakers (Miao et al., 2021). More recently, it released a

publication containing guidance on using generative AI in education and research (Miao & Holmes, 2023). To date, there has been a focus on guiding governments and policymakers to integrate AI into teaching and learning (Schiff, 2022), but there is a paucity of information about policies and practices relating to AI at an institutional level (Chan, 2023a). The pace of change and innovation happening in the AI space is currently outpacing the adaptation of national and institutional regulatory frameworks, which is creating concerns about acceptable usage, data privacy and equity (Miao & Holmes, 2023). In 2023, the Western Interstate Commission for Higher Education (WICHE) Cooperative for Educational Technologies released a report on a survey about AI-related institutional practice in the USA. The report revealed that nearly 60% of the 506 survey respondents stated that the use of AI to support teaching and learning at their institution is on the radar or scattered but there is no systemic action to integrate AI into teaching and learning (Sebesta & Davis, 2023).

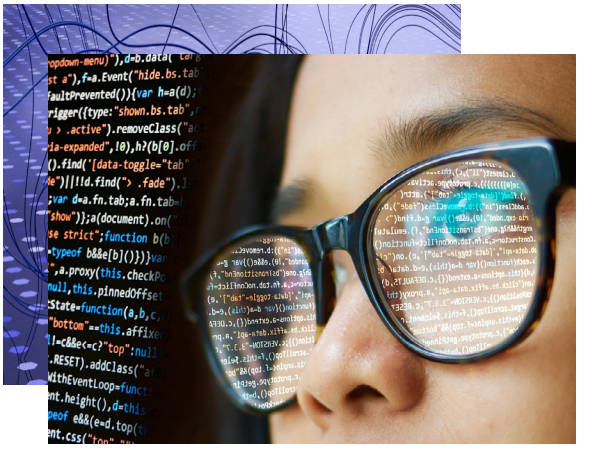
More recently, the EDUCAUSE Center for Analysis and Research (ECAR) surveyed academic leaders across the United States and found that many reported being in the process of developing policy at their institutions. The findings indicate that many respondents were concerned about academic integrity and that the policies were being developed to provide concrete guidance to learners with a goal of improving course experiences and outcomes (Robert, 2024). The report also identified a set of appropriate and inappropriate uses for AI in education from an analysis of the respondents' answers to the survey questions. Many of the appropriate uses were described in terms of providing support, assistance and analysis, and developing digital literacy; those identified as inappropriate involved outsourcing human judgement, thought and creativity to AI in high-stakes decision-making, inputting sensitive or personal data, and misrepresenting AI-generated works as one's individual creation.

Similarly, a recent report in Canada indicated that only 17% of institutions have any policy guidelines related to AI in teaching and learning (Veletsianos, 2023) Also in Canada, the Higher Education Strategy Associates group developed an extensive database of emerging institutional policies, statements, guidelines and recommendations developed around the world with reference to the use of generative AI in higher education.[6] Making such policy examples available can be useful for those institutions seeking to develop their own policy.

In Luo's (2024) study of AI policy, the author reviewed policy from 20 large high-profile universities around the world, with a specific focus on how the issue of generative AI was framed within the available policy. Many of the policies addressed academic misconduct as a priority and suggested that clear expectations and guidelines be made available to help learners successfully navigate the responsible use of AI. The author acknowledges that the "process of producing original work is becoming more convoluted given recent technological development," and argues that higher education policy "reframe originality from a collaborative perspective and situate it

6 See https://higheredstrategy.com/ai-observatory-home/ai-observatory-policies-and-guidelines/

along a continuous spectrum" in light of generative AI (Luo, 2024, p. 11).



Other initiatives to gather policy recommendations at the individual, group or organisational level have also emerged. Eaton (2024), for example, has created a Google spreadsheet in which anyone from around the world can share examples of the policies and syllabi statements that instructors are using to guide learners' use of generative AI tools. At the time of writing, this crowdsourced spreadsheet of policies had amassed more than 100 entries from around the world. Some of the policies are institutionally set, and others have been created by individual educators to address AI usage in a particular course in the absence of institutional direction. These initiatives signify the rapidly changing and uncertain landscape of AI policy in educational contexts and the subsequent responses from educators.

The AI landscape is changing rapidly, and so policy related to the use of AI in higher education is still very emergent. This essentially indeterminate state is not a new phenomenon. The same situation arose in the past when technological innovations were introduced to society. While some institutions are taking a wait-and-see approach, others are forging ahead and fully embracing AI. Arizona State University (ASU), for example, was the first higher education institution to partner with OpenAI and gain full access to ChatGPT. The university plans to use it for developing coursework, offering personalised tutoring services and creating new academic programmes in prompt engineering and for research (Field, 2024). Representatives from ASU stated that "universities hope to foster critical thinking, so we never considered closing ourselves off from the technology. We want to help determine the conditions in which this technology can be used in education" (David, 2024, para. 6). Whether other higher educational institutions choose to engage in partnerships with AI companies is a question for reflection and critical dialogue.

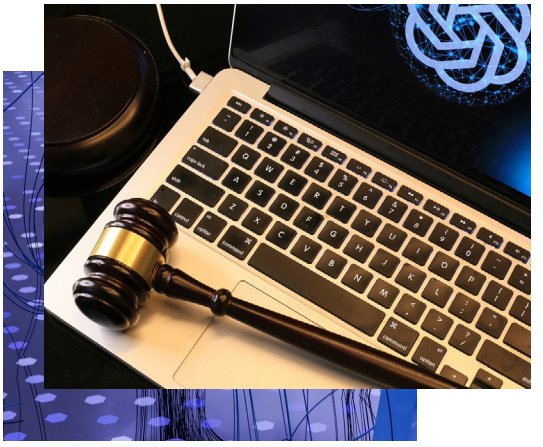
Individuals who are applying a more critical lens have expressed concerns about the rapid advancement of AI in society. Despite the rhetoric that growth and progress in the area of technology leads to the betterment of society, some argue that advances in AI have not benefited everyone and have contributed to more economic inequality and environmental degradation (Nardi et al., 2018; Sharma et al., 2023). For example, the development and use of AI have significant environmental implications because the tools are energy-intensive. As noted in Selwyn (2024), studies show that developing and training an AI model results in a significant discharge of carbon dioxide (Prasad, 2023). Even an individual's use of an LLM

such as ChatGPT has environmental implications because fresh water is used to cool computer servers as they process user queries (Li et al., 2023). In addition, reports of 20% increased water consumption in 2022 at Google compared to 2021 and a 34% increase at Microsoft during the same period (Li et al., 2023) have prompted environmental concerns about the rapid deployment of AI. Many researchers are beginning to argue that we must critically assess growth and innovation in relation to the ecological and social impacts and aim to find a balance of "computing within limits" (Nardi et al., 2018, p. 86).

AI in Teaching and Learning

Recent advances in functionality and availability have opened up many potential use cases of AI for teaching and learning. For example, some have suggested that the wider availability of AI might help to close gaps in education by offering learners help outside the classroom. While learners have long been able to use search engines to find answers to questions related to their studies, they may now obtain more focused answers if they ask questions of an AI model. In addition, learners can now ask for answers in various formats, lengths of text, positionality or voice, and they can even request specific representations of knowledge — for example, timelines or reading lists. The results of such queries can be used to ignite ideas, provide resources or replace a learner's own work. Learners have shared with researchers how they use AI for outlining ideas, helping them to think through or understand a topic, restructuring or proofreading their writing, and even completing academic work on their behalf (Anderman & Xie, 2023; Svrluga & Natanson, 2023; Terry, 2023).

The latter use has triggered a groundswell of concern about academic integrity (Cotton et al., 2023; Foltynek et al., 2023; Kumar et al., 2023; Luo, 2024). Traditional plagiarism detectors such as Turnitin[7] search a corpus of text for matches in a learner's writing and have proven to be an unequal match for AI-generated material. Although new AI detection tools are becoming available, there is scepticism about whether they can identify AI 100% of the time (Kumar et al., 2023). While Turnitin has reported that potentially millions of papers processed through its service contain traces of AI-generated text, this claim should be treated with some degree of scepticism, as Advance Publications, its parent company, is currently rolling out a new AI detection service (Hoover, 2024).



A recent analysis of the social media site Reddit revealed a significant number of posts from learners claiming they were

7 See https://www.turnitin.com/

being falsely accused of using AI in their coursework and seeking advice on how to deal with the accusation (Wu et al., 2024). The authors of the report suggest that learners could, for example, keep copies of a document's editing history and copies of drafts to provide a record of their engagement with a piece of writing. There are many anecdotal references to professors asking learners to show their document version history, or the evidence of edits in a document, as a way to prove their authorship of a piece of writing. Word and Google Docs can both show the editing dates and times and the number of words contributed to a document, and this information can be used to indicate authentic author contributions.

One approach to avoiding academic misconduct is to clearly cite the use of AI when it has been employed. To this end, the American Psychological Association (APA) now offers guidance on how to cite tools like ChatGPT by capturing the date of the query and a link to the LLM (McAdoo, 2023). In addition, some generative AI tools now allow users to link to a particular user query and its output.[8] These links are unique and could be cited directly, allowing a reader or assessor to explore the query that generated the resulting text as needed. As such, it is becoming apparent that learners could use generative AI in an ethical way and cite its use appropriately. If such a practice becomes normalised in teaching and learning, education institutions will need a policy to guide learners on how to do this.

With regard to using AI for assessment tasks, opinions vary across disciplines. While some faculty report that AI may have a role to play in supporting assessment, others believe that using AI for assessment is problematic (Robert, 2024). The disparity in opinions suggests that AI has limitations with regard to epistemological variability and that while it may play a role in assessing knowledge that is highly objective, it may struggle with knowledge that is interpretive, empirical and inductive.

It is clear that educators around the world must acknowledge the existence of AI when engaging with their learners and have a conversation about its acceptable use. AI is now part of our collective toolset for creative and knowledge-building activities. Educators must consider it holistically throughout the learning design process by defining course goals and outcomes that aim for higher-order knowledge and skills that cannot yet be replicated by AI (Luo, 2024); creating teaching and learning activities that are socially constructed, meaningful and contextually driven; and drawing on each individual learner's unique skills and abilities. While many have warned of the challenges AI poses to learner assessment, there is an opportunity to rethink and reimagine assessment practices and approaches that leverage human inputs and insight. Cao and Dede (2023) suggest educators address and confront AI in a rational way by "developing the metacognitive skill of discerning when, where, and how to use AI" in an ethical and sensible way (p. 8). This skill lies at the heart of AI literacy. Educators must develop a critical understanding of the benefits and challenges of AI in the context of knowledge production and use that understanding to develop a set of best practices that learners can draw on (Bozkurt et al., 2023).

8 See https://help.openai.com/en/articles/7925741-chatgpt-shared-links-faq

The Study Context

To address the rapid evolution of AI and its advancement into higher education, the Commonwealth of Learning (COL) conducted a study to help it understand the state of AI-related policy and practices in the context of teaching and learning throughout the Commonwealth. COL works with over 150 educational institutions in Commonwealth countries to promote distance and online learning to increase access to quality education and training for the 2.5 billion people who live in those countries. Many more institutions in Commonwealth countries also face the challenges associated with integrating technology into teaching and learning. The emergence of new tools, combined with limited financial capacities to respond to the demands of the evolving digital environment, exacerbates the challenges. Even educational institutions in the developed countries of the Commonwealth are in different stages of adopting generative AI. For example, a roundtable of learning and teaching leaders in July 2023 reported that "staff development, clear policy and guidelines, assessment changes, and student support" required improvement (Liu et al., 2023, p. 5).

COL's approach is to build institutional capacity, enable policy development and help with the adoption of cost-effective technologies to offer more courses and programmes that are affordable and flexible for people who need them. Technology plays a key role in the success of interventions in educational institutions in which COL is involved. COL must also remain up-to-date and agile about new technological developments in teaching and learning to provide timely and relevant guidance to its partner institutions. This report will also help institutional leaders to reflect on and consider adopting right steps to judiciously adopt AI in teaching and learning.

Objectives

It is important to understand the landscape of AI in teaching and learning in the Commonwealth before any intervention or plan can be made to support educational institutions. This report uses the findings from our survey of educational institutions in the Commonwealth to look at the following in the context of teaching and learning:

- existence of policies related to AI
- areas of application of AI
- main challenges and benefits of AI
- expectations about the future of AI

Methodology

A questionnaire-based survey was used to collect data. The survey questionnaire was developed in consultation with COL and has five sections:

- information about the institution the respondent is affiliated with
- current practices relating to the use of AI in teaching and learning
- state of AI policy
- staff development in the use of AI in teaching and learning
- benefits and challenges of using AI in teaching and learning

The survey comprised 27 questions with categorical-type responses to help with descriptive analysis and reporting and was made available during February and March of 2024. It was sent to 193 institutions in COL's internal contact database and to COL's country focal points and national-level quality assurance agencies with a request that they circulate the survey among local post-secondary institutions. The survey was also shared on social media to elicit more responses from post-secondary institutions in the Commonwealth. A senior staff member was expected to complete it. Key stakeholders could be consulted, if required, to ensure the accuracy and integrity of the information provided.

This study had some limitations, which must be acknowledged. First, the exact size of the population is not known, and so it was not possible to establish a representative sample size. Second, only a small number of responses were received, and they contained self-reported information. Third, the survey captures data at a single point in time, which limits our ability to establish relationships between variables or changes over time. Despite these limitations, however, we believe the data we collected present a valuable overview of current AI policy and how institutions in the Commonwealth feel about and are engaging with AI. The responses from senior staff members from the post-secondary educational institutions also provided insight into the use of AI in teaching and learning. Our objective at this stage was to get an overview of how educational institutions are engaging with AI, and the data we collected were sufficient for this purpose.

Findings and Discussion

Representatives from 100 institutions responded to the survey, with 93 of them providing complete responses. Table 1 shows that a large majority of the respondents (78%) were from the African region, 13% from Asia, 7% from the Pacific, and 1% each from the Caribbean and European regions. The complete list of countries that participated in the survey can be found in Appendix 1. The highest number of responses came from Kenya, which is probably also indicative of COL's work there.

Table 1. Survey responses, by region

Region	% responses
Africa	78%
Asia	13%
Caribbean and Americas	1%
Europe	1%
Pacific	7%

Most of the survey respondents (60%) held senior management positions; 28% had teaching roles, and 12% were in administrative positions. Almost all respondents (92%) represented government and public sector institutions; 5% came from not-for-profit private institutions, and 3% came from private for-profit institutions. The majority of the institutions that the respondents represented were universities (43%), followed by teacher training colleges/institutions (35%), colleges (10%) and vocational and technical training institutions (8%). The remainder (5%) represented a variety of institutions, including regulatory institutions. Table 2 shows respondents' institutional affiliations, their level of teaching and their role within the institution.

Table 2. Type of institution, level of teaching, and respondents' role at the institution

Type of institution	Percentage
Government/Public sector	92
Private (for-profit)	3
Private (not-for-profit)	5
Level of teaching	
College	10
Teacher training college/institution	35
University	43
Vocational and technical training institution	7
Other	5
Respondents' roles	
Administrative staff	12
Senior management level	60
Teaching staff	28
Use of AI (*n*=93)	
Yes	67
No	33

The AI Adopters

When asked about their institution's current level of use of AI to support teaching and learning, 67% of respondents reported that it was used to some degree, whether informally or with some systemic support (see Table 2). Systemic AI use was recorded for respondents who reported that they were in the planning stage of deploying AI, entire departments or faculties were adopting and using it, or AI had been institutionally adopted and implemented. The use of AI was described as informal when respondents reported that learners are using AI, both faculty and learners are using AI across campus, or some but not all learners and faculty are using AI but only sometimes and not in a systematic way. Figure 1 illustrates the responses from those who reported some level of AI use.

67% of institutions in the Commonwealth are using AI to support teaching and learning to some extent.

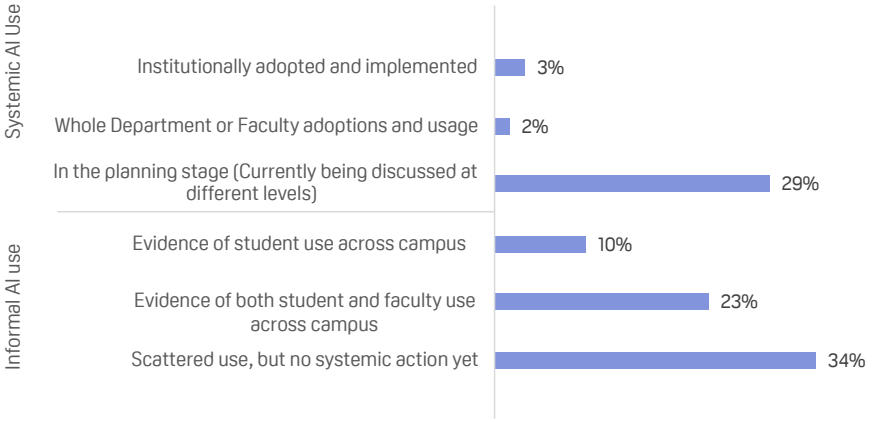


Figure 1. How AI is used in teaching and learning (n=62).

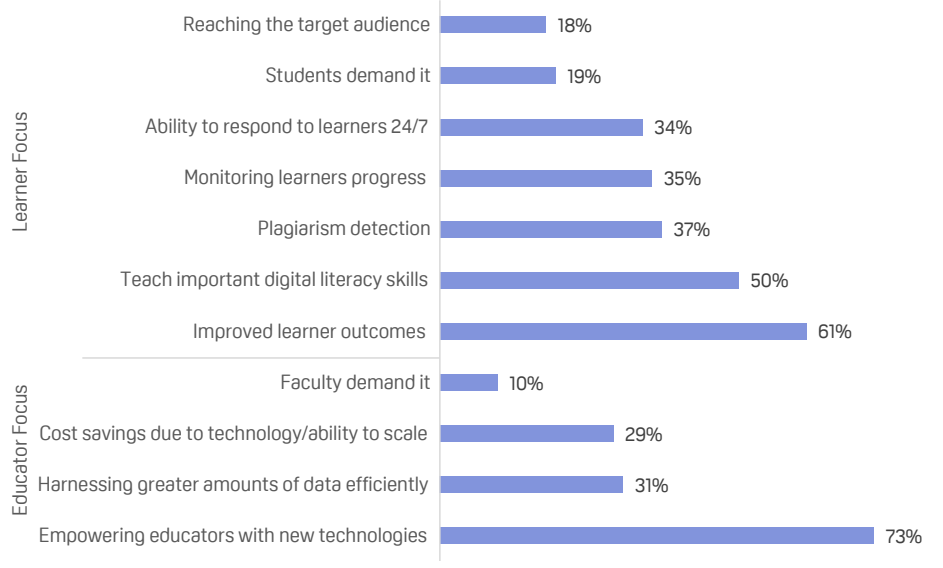
Of the respondents who reported some level of AI use, 44% started to think about how they might use AI to support teaching and learning within the last year, 35% started to think about it one to two years ago and 5% within the past three to five years. Only 10% reported that they began considering it more than five years ago. The remaining 6% were unsure when their institution first started to consider how AI could be used to support teaching and learning.

The respondents reported several reasons for thinking about adopting AI. Their reasons were categorised as:

- reaching the target audience
- students demand it
- ability to respond to learners 24/7

- monitoring learners progress
- plagiarism detection
- teach important digital literacy skills
- improved learner outcomes
- faculty demand
- cost savings due to technology/ability to scale
- harnessing greater amounts of data efficiently
- empowering educators with new technologies

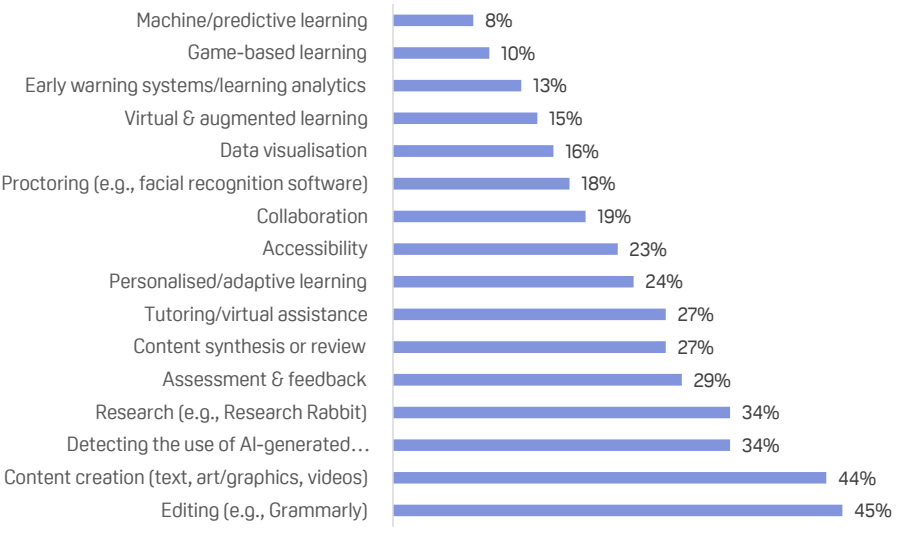
Figure 2 summarises the number of responses for each of these reasons, organised by learner or educator focus.



Note: Multiple responses were permitted

Figure 2. Reasons for adopting or considering the adoption of AI (n=62).

The specific ways in which AI is being used by those who reported some level of use of AI were diverse and wide-ranging. AI text editing tools, such as Grammarly, were the most widely reported, following by content creation tools such as ChatGPT. Remarkably, the third most commonly used AI tools were AI detection tools. Figure 3 presents a summary of which AI applications were most commonly used among the respondents.



Note: Multiple responses were permitted

Figure 3. Specific uses of AI (n=62).

The areas of study in which AI was being used for teaching and learning also varied. The survey responses indicated that AI is being used for teaching and learning in computer science, engineering and the social sciences more than in other areas. Figure 4 shows the use of AI by discipline.

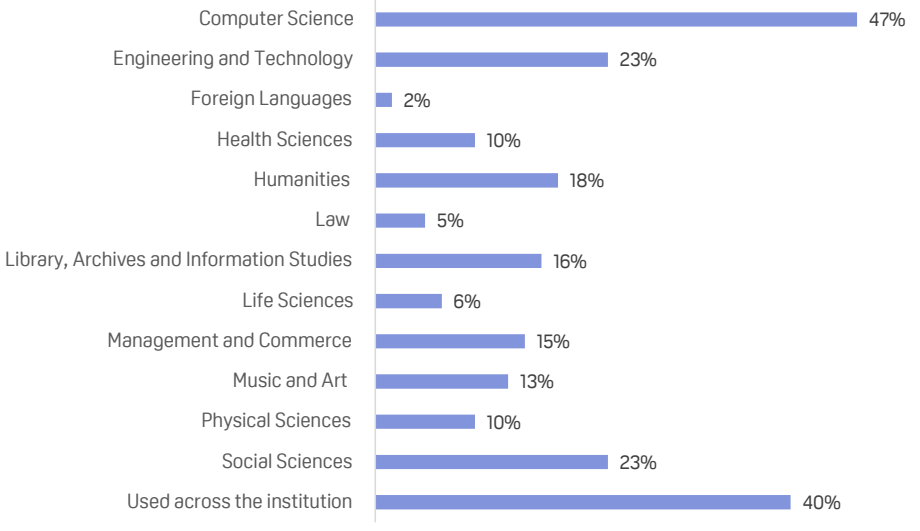


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Figure 4. Disciplines in which AI is being used (n=62).

Lastly, respondents who reported that AI was being used in their context also shared the types of incentives that their institutions were providing to encourage the use of AI in teaching and learning. Most (55%) reported that no incentives were currently being offered, while 21% reported that training was being deployed to help individuals use AI. Other supports such as stipends, public acknowledgement,

contribution to performance review and promotion and financial supports were reported by a minority of respondents. Figure 5 shows a summary of the responses to questions about incentives for using AI.

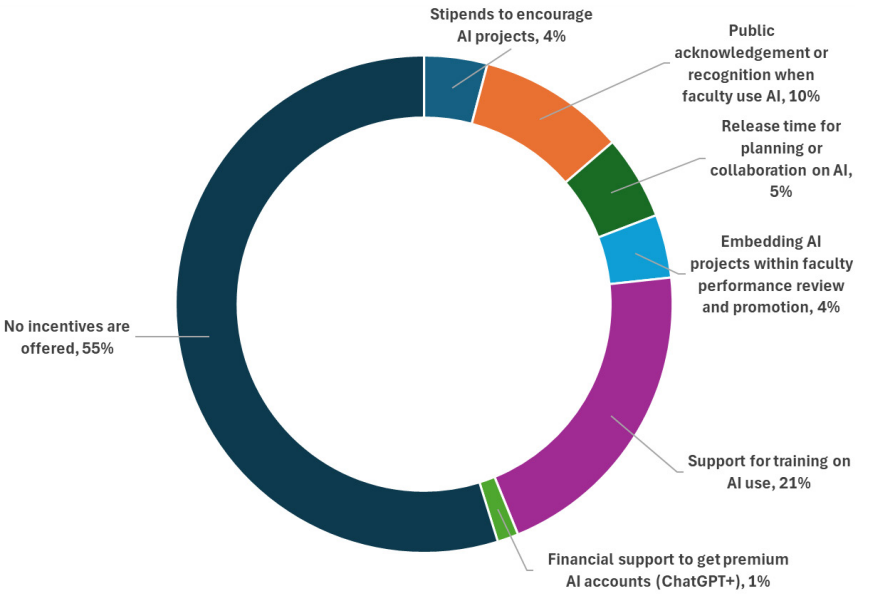


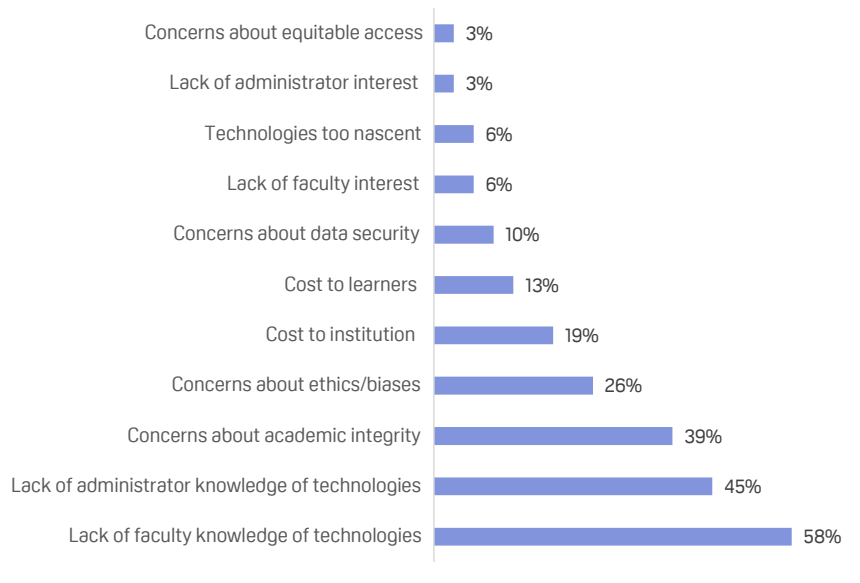
Figure 5. Incentives provided for using AI.

Reasons for Not Using AI

Thirty-three per cent of the survey respondents reported minimal use of AI in teaching and learning across their institution or did not know if it was being used in their institution. Among this 33%, 13% of respondents said they had no interest in using AI to support teaching and learning, 21% reported being uncertain about its application to teaching and learning, and 19% reported that they did not know if any AI was currently in use across their institution.

58% of respondents who reported that their institution is not using AI suggest faculty lack knowledge about how to use AI technology.

When asked why they believe their institution has opted not to use AI in teaching and learning, the respondents provided several reasons. The predominant reason was a lack of knowledge about how to apply AI in teaching and learning. However, respondents also referred to the ethical, moral and academic integrity issues that plague AI as another significant issue that affects its uptake. Costs were also mentioned as a barrier. Figure 6 shows the list of reasons for not using AI for teaching and learning and the percentage of respondents who cited each one.



Note: Multiple responses were permitted

Figure 6. Reasons for not adopting AI (n=31).

Respondents in the non-user category were also asked to think about the ways in which AI could be applied in teaching and learning and how they might use it in the future. The data presented in Figure 7 are drawn from the responses about the use of AI from respondents affiliated with institutions that are currently using it. Mostly, the non-user institutions are optimistic about the use of AI in content creation, research, collaboration and detecting AI-generated content. However, among those who use AI, the highest rate of use was in editing their work using AI applications (see Figure 3).

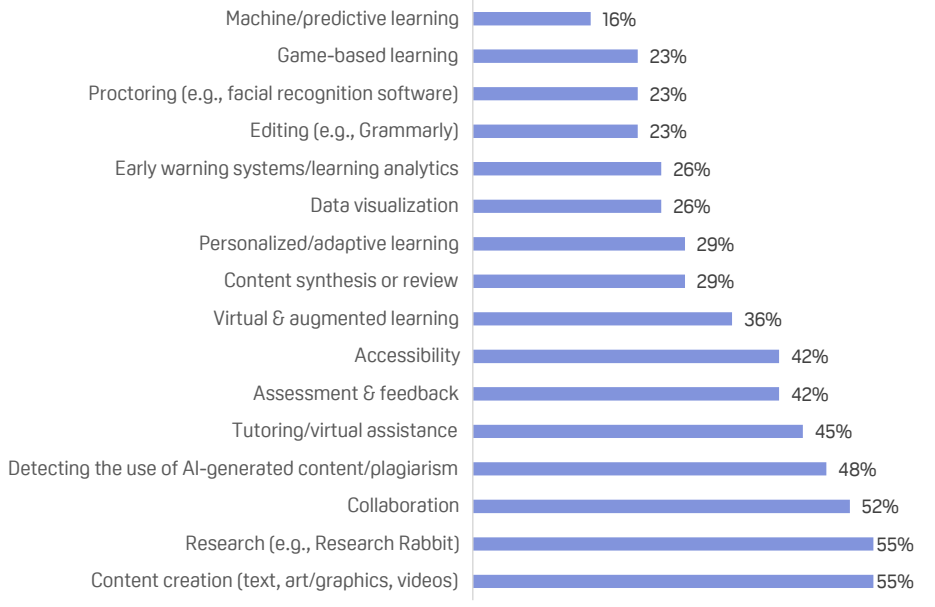
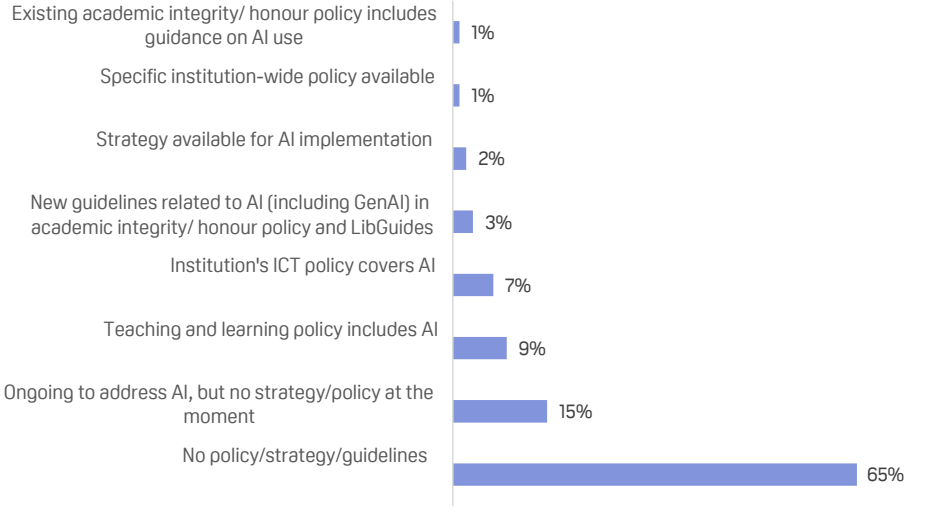


Figure 7. Areas in which non-adopters could use AI (n=31).

Current State of AI Policy

All the respondents were asked about the current state of policy in place to address AI in the context of teaching and learning. Most (65%) indicated that their institution currently has no policy, strategy or guidelines in place to advise on the use of AI in teaching and learning. Some (15%) indicated that a policy was being developed, and others reported that an existing policy addressed the use of AI as part of the institution's academic integrity, information and communication technologies (ICT), or teaching and learning policy. Figure 8 provides an overview of how respondents assessed the current state of their institutional AI policy.

65% of institutions in the Commonwealth indicated that they do not have any policy or strategy to address the use of AI in teaching and learning.



Note: Multiple responses were permitted

Figure 8. Current state of AI policy regarding teaching and learning (n=93).

Respondents were asked what policies that are currently in place at their institution would need updating as AI becomes more widely available. The ICT policy was the most frequently referenced, followed by the teaching policy, learning policy and academic integrity policy. Several respondents also noted that their institution's online learning, copyright and data privacy policies would need to be updated in light of AI. Fewer respondents mentioned accommodation/access and tenure promotion policies, but these were nonetheless identified as being affected by the spread of AI. Figure 9 shows the policies that will be affected by AI and the frequency of responses for each one.

Respondents were also asked if there was a particular department, unit or position responsible for overseeing AI adoption at their institution; 83% of respondents indicated there was not, which suggests that multiple stakeholders and units from across each institution are likely collaborating on this work.

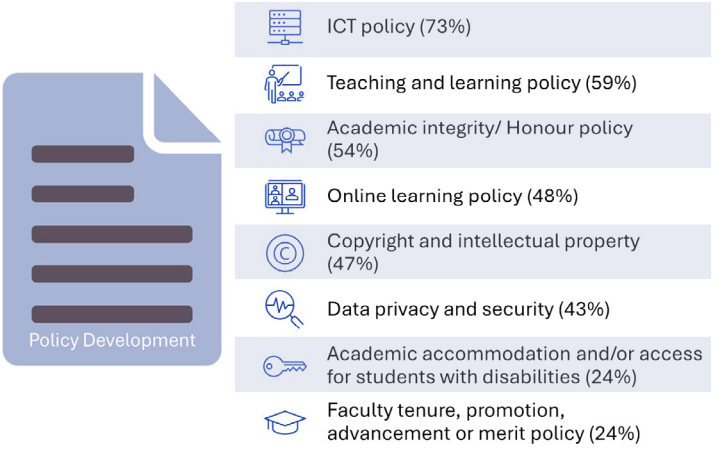


Figure 9. Existing institutional policies reported to be impacted by AI (n=93).

Staff and Professional Development for Using AI in Teaching and Learning

It is widely recognised that training and guidance for faculty, staff and learners is an area of need for the use of AI in higher education. Most (53%) respondents reported that there was no ongoing training or staff development activity in their institution, while 15% reported there were some programmes in place and 26% reported that staff development activities were in the planning phase (see Figure 10). This indicates that nearly 80% of educational institutions in the Commonwealth do not have any systematic AI-related capacity building activities happening at the moment.

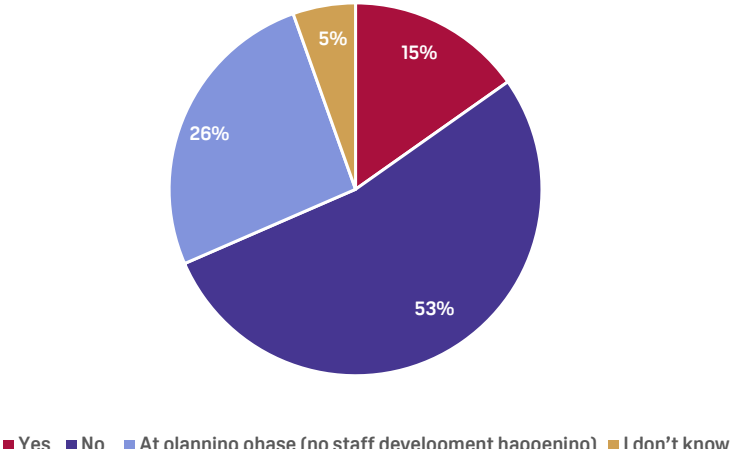


Figure 10. Current state of AI-related professional development activities (n=93).

The respondents were also asked about how their institutions approach knowledge development about AI and whether there were plans in place for any professional development activities. They reported that faculty and staff were most commonly being encouraged to seek out and use free online courses, MOOCs or webinars on the topic (42%) or to seek out training opportunities outside their affiliated institution (19%). The responses showed that planning for faculty and staff development in using AI for teaching and learning was more common than programming on the use of AI for research and scholarship. Similarly, for learners, professional development interventions on the use of AI for teaching and learning were reported to be more common than training on the use of AI for research and scholarship. (See Table 3.)

Nearly 80% of the respondents reported that no educators had access to systematic AI-related training opportunities.

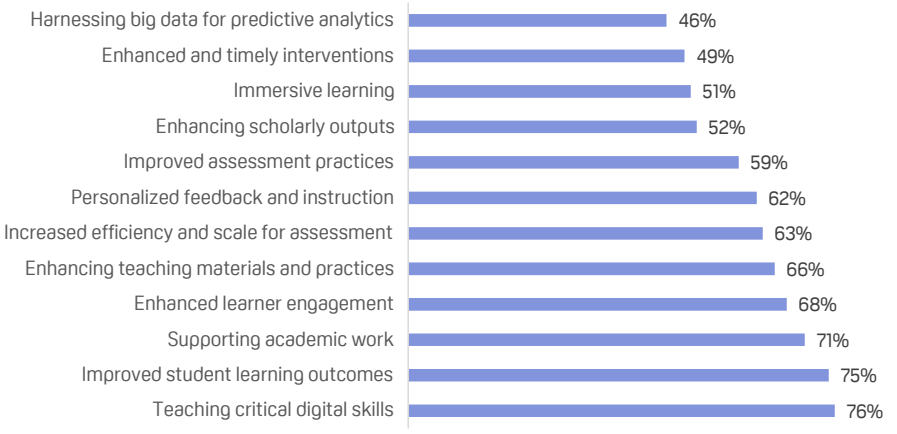
Table 3. Staff development activities (n = 93)

Staff development	Percentage
Staff are encouraged to take free online courses/MOOCs/webinars	42%
Training for faculty on using AI for teaching and learning	28%
Staff are encouraged to undergo training outside the organisation	19%
Training for students on using AI appropriately for learning	18%
Training for faculty on using AI for research	16%
Training for students on using AI for research	10%

Note: Multiple responses were permitted

Benefits and Challenges of Using AI in Teaching and Learning

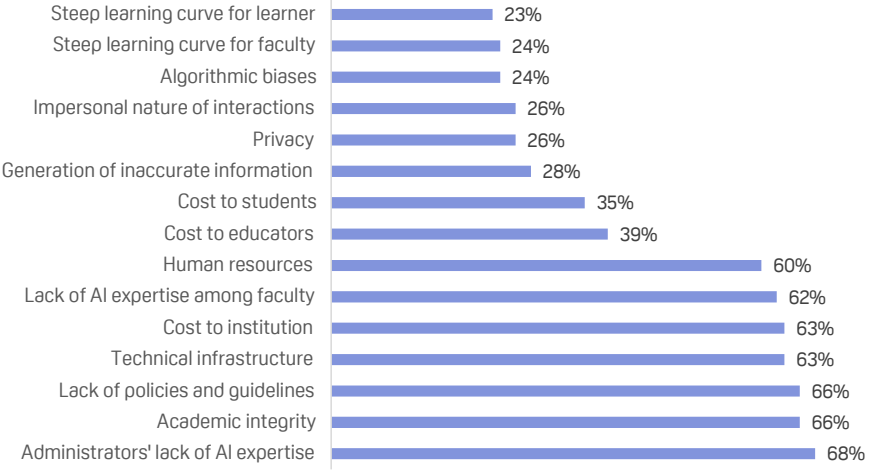
The final section of the survey asked participants to comment on the realised or imagined challenges and benefits associated with the widespread availability of AI. As illustrated in Figure 11, the most common benefits identified were related to developing digital literacy, improving student learning outcomes and supporting academic achievement. Enhancing learner engagement was also noted by many respondents, as was the potential for AI to affect pedagogical processes and learning resource development. Assessment processes were also frequently cited — for example, scaling up assessment by providing more personalised feedback and improving overall approaches to assessment.



Note: Multiple responses were permitted

Figure 11. Potential benefits of adopting AI (n=93).

The most frequently cited challenge associated with the widespread availability of AI was lack of knowledge and expertise on how to use AI within Commonwealth post-secondary institutions, specifically among administrators and, albeit slightly less so, among faculty (see Figure 12). The respondents also noted that there is a lack of available policy and guidelines to support the use of AI, and related to this, that issues around academic integrity are also considered to be challenging to address. The financial cost, human resource needs and training requirements for deploying AI in an intentional way were also frequently cited as challenges that will need to be overcome.



Note: Multiple responses were permitted

Figure 12. Potential challenges to adopting AI (n=93).

A free text field at the end of the survey allowed the respondents to provide additional comments if they wished. One of the most common responses was a desire for partnerships and collaboration among institutions to develop policy guidelines for AI. Some respondents also expressed a hope that at some point there will be more co-ordinated national policy guidelines that could be taken up by several institutions, thus preventing the need for each institution to develop its own policy independently.

Conclusions and Recommendations

Based on the findings from our survey, we see evidence that institutions throughout the Commonwealth are grappling with the use of AI in teaching and learning. While some have embraced the technology, others have taken a more measured approach, but the consistent message was that there is a lack of structured supports or policy in place. Based on our findings and those in the extant literature, there appears to be a need for bottom-up development of policy within institutions and training for learners and teachers on the appropriate and ethical use of AI in teaching and learning. Institutions throughout the Commonwealth need a more strategic and widely available framework for policy around AI in higher education that they can adopt or adapt as required.

Key challenges identified by the survey respondents include lack of AI capacity among administrators, safeguarding academic integrity and lack of policies related to using AI in teaching and learning.

It is important to note that AI technology is pervasive and will be widely taken up by individuals even if there are no institutional directives or policies in place. Individual users can and will make choices about which AI model they will use and whether to subscribe to a premium account for an AI service. Furthermore, most institutions are now adopting blended learning and integrating technology into teaching and learning through a virtual learning environment. This shift makes it even more important to have policies and guidelines in place to help support faculty, staff and learners as they navigate the appropriate use of AI tools in higher education settings. Aligning policy directives with principles of academic integrity, critical thinking and intentionality relates to the core mission of higher education and can be described as the ethical use and application of AI technology in knowledge work. Higher education institutions have a key role to play in assessing and employing AI in ethical and sensible ways. Recently, there have been calls to develop an international database of institutional regulations,

policies and guidelines pertaining to AI in education so that those who are further along in this process can share their experiences and lessons learned with others around the world (Veletsianos, 2023).

Only 21% of the institutions that are currently using AI have some form of professional development programme in place, so there is much work still to be done around training and capacity building. Both faculty and learners will need to be trained in how to make the best use of AI for teaching and learning, while staff and administrators will have to develop appropriate productivity and planning approaches to using AI. Furthermore, there is an opportunity to develop best practices for using AI — for example, in providing support, undertaking analyses, and developing digital literacy — while also identifying practices that may be less appropriate — for example, outsourcing important human judgement, thought and creativity to AI in high-stakes decision-making, inputting sensitive or personal data, overreliance on AI and the misrepresentation of materials developed by AI as one's own (Robert, 2024).

AI has significant implications for knowledge generation, and we must rethink the ways in which humans and AI can collaborate on this. Scholars have suggested that the availability of AI tools challenges the way we might think about originality. For example, "while originality is traditionally regarded as 'individualistic' and 'attributed to individual persons'" (Nakazawa et al., 2022, p. 705), Luo (2024) acknowledges that the emergence of generative AI has made knowledge production an increasingly collaborative process. This change has major implications for creative work and problem-solving. It also opens up an opportunity for higher education institutions to rethink assessment practices in light of AI and consider how to best combine human experience and a personalised learning experience with AI supports (Hodges & Kirschner, 2023). Educators desire for learners to do their best, and AI may be able to help learners do exactly that. However, institutions will need to provide guidance to help learners recognise the potential inherent limitations of AI and use AI responsibly and ethically (Bozkurt et al., 2023; Ng et al., 2021).

Those who work in higher education can play a significant role not only in helping us make sense of how AI can be used in teaching and learning but also in developing training programmes about using AI for knowledge development and management. There is currently a significant need for leadership in the ethical, responsible and appropriate uses of AI for teaching and learning. Discourse and policy that go beyond the academic integrity narrative and address impactful and appropriate uses of AI in society are essential if we are to help learners prepare for the future of work.

Recommendations

1. Institutions should aim to recognise and critically assess the potential for the use of AI in teaching and learning.
2. Educational institutions in the Commonwealth must develop policies for the appropriate use of AI. They may need support in terms of expertise and know-how in the use of AI technology as well as in policy development.
3. Staff training at educational institutions should be a top priority to ensure the ethical use of AI in teaching and learning. Such training must be institution-wide to help all stakeholders understand the basic principles of AI and ensure the appropriate use of AI.
4. Educational institutions must create training opportunities for learners to learn how to use AI effectively in their learning process.
5. Educational institutions in the Commonwealth should form a network where they can discuss the topic of AI in learning and teaching, collaborate on developing strategies and best practices and create continuous professional development opportunities.

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Appendix 1: Countries Represented in the Institutional Survey Responses

Country	Number of institutions
Australia	3
Bangladesh	1
Cameroon	2
Eswatini	1
Gambia, The	1
Ghana	3
India	7
Kenya	44
Lesotho	2
Malawi	4
Malaysia	2
Maldives	1
Malta	1
Mauritius	5
Mozambique	2
Namibia	1
New Zealand	1
Nigeria	3
Pakistan	2
Papua New Guinea	1
Samoa	1
Seychelles	1
South Africa	4
St Vincent and The Grenadines	1
Uganda	1
Vanuatu	1
Zambia	4

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