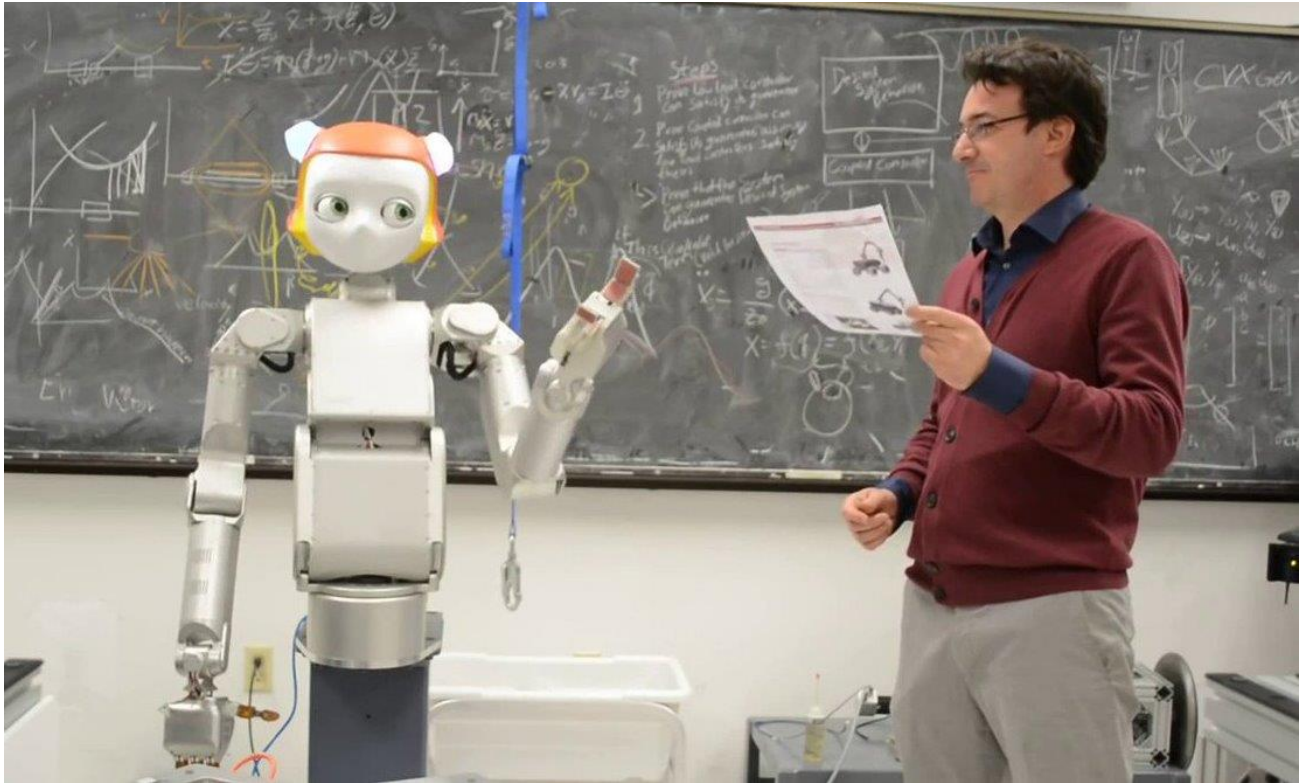# IQAA

GLOBAL HIGHER EDUCATION

Bulletin №23

Astana 2024

Dear Colleagues!

We are pleased to present the twenty-third issue of our newsletter, in which you can find foreign articles and news in the field of higher education

IQAA

CONTENT

AI IS HELPING UNIVERSITIES TO IMPLEMENT THE SDGS – STUDY

Wagdy Sawahel 06 April 2024

ANNOTATION:

This article focuses on a research review published in the International Journal of Sustainable Development and World Ecology that examines the use of artificial intelligence (AI) in higher education institutions to achieve the UN Sustainable Development Goals (SDGs). The authors, representing 11 academics from different countries, conducted a survey among sustainability practitioners to assess the current level of AI use and identify the challenges they face. The results showed that AI is widely used in universities for a variety of purposes, including literature review, data collection and analysis, and manuscript writing. However, respondents also highlighted challenges in accessing software and AI training. Future developments in this area include the need to consider contextual realities when implementing AI in different countries and to support publicly available *data and computational capacity. In addition, universities can play a key role in educating students about AI technologies and their application for sustainable development, as well as developing innovative AI-based solutions and social impact initiatives.*

INTRODUCTION

AI offers a powerful toolset to accelerate the implementation of the United Nations Sustainable Development Goals (SDGs) and address complex sustainability challenges at higher education institutions by offering innovative solutions and enhancing the efficiency of processes aimed at achieving these goals.

This is the main message that emerged from a study on using artificial intelligence to implement the SDGs at higher education institutions, published in the International Journal of Sustainable Development and World Ecology on 21 March 2024.

Authored by 11 researchers from universities in Africa, Asia, Europe, South America and

Australia, the study explored "the extent to which AI currently supports the worldwide implementation of the SDGs at HEIs [higher education institutions]" and pointed to "opportunities for cross-cutting engagement for the use of AI in education and beyond".

Using multi-methods approach the study investigated connections between artificial intelligence and the implementation of the UN SDGs at higher education institutions using a bibliometric analysis of AI publications. It included an assessment of a set of case studies that illustrated how AI is being deployed among a sample of universities in support of efforts to implement the SDGs, as well as a survey aimed at identifying current and future trends.

The study had some limitations, mainly in terms of the bibliometric analysis (limited by selection of databases and search strings), limited selection of case studies (21 cases) and a limited sample of respondents to the survey (101 persons from 38 states/countries).

BIBLIOMETRIC ANALYSIS OF AI PUBLICATIONS

The bibliometric search was conducted on 27 September 2022, and returned 448 articles which indicated that the applications of AI at higher education institutions are not occurring "haphazardly", but have "a definite focus" on thematic areas.

This focus includes machine learning in the context of land use and planning (SDGs 11 and 15), big data analytics for climate change applications (SDG 13), blockchain technology, the internet of things (IoT), machine learning and big data analytics in terms of supply chain management, operational efficiency, and the circular economy (SDGs 8 and 12), various applications of AI in the context of the socio-economic dimension (SDGs, 1, 2, 3 and 4), and the contribution by applications of AI to improve transparency, reduce criminality, facilitate resource sharing etcetera, in the context of SDG 17.

ANALYSIS OF CASE STUDIES

The analysis of 21 case studies located at universities in Malaysia, Spain, Nigeria, Brazil, the United Kingdom, Sri Lanka, South Africa, Fiji, the United States and Algeria showed that higher education institutions are implementing AI solutions in support of the SDGs in different areas.

While some cases are connected with campus operations and greening and show how activities and research on campuses support the achievement of the SDGs, other cases relate to the use of AI to measure the alignment of research and outreach or engagement with the SDGs, to better understand how the institutions are contributing to communities and society at large.

The study also included some cases that focus on the use of AI as an educational tool, and for university management – all focused on promoting the SDGs.

"AI is also becoming an important factor in facilitation of teaching and learning, with a case from the Global South illustrating how machine learning is used to maintain the quality of mobile learning platforms," the study noted.

The case studies also showed that AI interventions at some higher education institutions are well planned, designed and implemented but their inappropriate application may exacerbate inequalities and the associated marginalisation of some social groups.

The case studies also showed that AI poses several challenges and risks in educational contexts, especially concerning matters such as authenticity and ethics in assessment.

"Issues such as these will need to be explored further to ensure the optimal application of AI in HEIs, so that it can be used in an informed

and responsible way to improve educational quality and equity," the study stressed.

"As the application of AI tools [is] becoming increasingly prevalent in HEIs, considerations regarding ethics, data privacy, resistance to change, and industry alignment, to mention a few, are coming to the forefront and will need to be dealt with going forward," the study said.

THE SURVEY OUTCOMES

The survey identified the fact that use of AI is quite widely spread, and is likely to increase in coming years, due to a greater demand.

has already significantly penetrated research practices in HEIs, to the extent that more than half of the researchers indicating they are using it, do so with considerable frequency, and with machine learning identified as the technique most often used," the study said.

The survey indicated that challenges experienced by the respondents are multiple and diverse, but "lack of access to software and materials" and "lack of IT training for myself and my colleagues" are mentioned the most.

FUTURE DEVELOPMENTS

The study found that use of AI in support of the SDGs at higher education institutions depended on universally available and reliable data and computational capacity.

"Since not all countries are equally capacitated in terms of their ability and infrastructure to use AI to implement the SDGs, care needs to be taken to ensure AI implementation proceeds according to such contextual realities," the study said, noting that such implementation "requires a high level of ethics and responsibility towards current and future generations".

"The survey among sustainability practitioners at HEIs delivered an overall higher than expected uptake of AI: of the 76% of respondents with expertise in research focused on the SDGs, 50% are currently using AI as part of their research on the SDGs or in related projects," the study notes.

The applications for which the respondents use AI include literature reviews, the formulation and design of research projects, the collection of data, the analysis of data, the presentation of findings and outcomes, and the writing and preparation of manuscripts, according to the study.

"The survey furthermore confirms that AI

According to Professor Atta-ur-Rahman, a UNESCO Science Prize laureate and former cooperation, the study correctly emphasises that the higher education sector can play an important role in leveraging AI to contribute to achieving the SDGs in fields such as environmental monitoring, precision agriculture, climate change mitigation, healthcare, education, and other areas relevant to sustainable development.

Atta-ur-Rahman, who is a former federal minister of science and technology of Pakistan, told University World News: "Such research in universities can lead to the development of innovative AI solutions tailored to address specific challenges.

"Higher education institutions can integrate AI-related courses and programmes into their curricula to educate students on AI technologies, their applications, and their potential impact on sustainable development. This ensures that future professionals are equipped with the knowledge and skills needed to leverage AI effectively."

He said universities could offer training programmes, workshops, and seminars to equip stakeholders with the skills and knowledge needed to develop, deploy, and utilise AI technologies for sustainable development. "This includes training sessions for policymakers, practitioners, entrepreneurs, and community leaders on AI ethics, governance and best practice.

"Higher education institutions can establish partnerships with government agencies, NGOs, industry partners, and other stakeholders to share knowledge, resources, and expertise in leveraging AI for sustainable development. These partnerships can facilitate the co-creation and implementation of AI solutions that address real-world sustainability challenges," he said.

Universities can also serve as technology transfer hubs and innovation incubators, facilitating the translation of AI research into practical applications and commercialisation, Atta-ur-Rahman noted.

"By supporting entrepreneurship and innovation, higher education institutions can accelerate the adoption of AI solutions that contribute to sustainable development," he explained.

However, he said higher education institutions must engage in policy advocacy and thought leadership to promote the responsible and ethical use of AI for sustainable development, which may involve conducting policy research, issuing policy recommendations, and participating in policy dialogues at local, national, and international levels.

"Universities can spearhead social impact initiatives that leverage AI to address pressing sustainability challenges in their local communities and beyond," Atta-ur-Rahman said. "This may include projects focused on environmental conservation, public health, education access, poverty alleviation, and disaster response, among others," he concluded.

MOST STUDENTS USE AI FOR STUDIES, DIGITAL DIVIDE EMERGES – SURVEY

Karen MacGregor 2 February 2024

ANNOTATION:

This article explores the impact of the use of artificial intelligence (AI) on the educational process in UK universities and the implications this may have on the digital divide. Results from a national student survey investigate the extent to which generative AI has penetrated academic practice and student attitudes towards its use. It is found that while the majority of students are using AI to enhance learning and support study, there is a lack of awareness of its capabilities and limitations. The analysis also highlights the existing digital divide in the use of AI, particularly along ethnic and socio-economic lines. Recommendations include developing a clear policy on the use of AI, training students to use it effectively, ensuring equal access to AI tools, and developing guidelines for identifying and addressing issues related to the use of AI in assessment. This article helps to understand the

dynamics of AI use in education and suggests practical steps to ensure its equitable and effective use in university teaching.

INTRODUCTION

Generative AI has become normalised in British universities, with most students using an AI tool to support studying and only 5% likely using AI to cheat, a first national survey of students and AI since the advent of ChatGPT has revealed. But urgent action is needed to stop a new digital divide emerging, and students want clear AI policies and support.

Among students surveyed, 53% have used generative AI to help with their studies. The most common use is as an 'AI private tutor', with 36% using AI to help explain concepts.

"For every student who uses generative AI every day, there is another who has never opened ChatGPT or Google Bard, which gives some students a huge advantage," said report author Josh Freeman, policy manager at the Higher Education Policy Institute (HEPI), in a release.

Male and Asian students are more likely to have used AI than others.

"The divide will only grow larger as generative AI tools become more powerful. Rather than merely adopting a punitive approach, institutions should educate students in the effective use of generative AI – and be prepared to provide AI tools where they can aid learning," the report stated. There is also a digital divide between institutions, with some embracing and others sidelining AI.

The survey report recommends that universities develop clear policies on AI use, teach students how to use it properly, and provide AI tools to students who cannot afford them. Education authorities should urgently explore how AI will affect assessment.

The study by HEPI, an independent higher education think tank, was published as a policy note on Thursday 1 February. "Provide or Punish? Students' views on generative AI in higher education" was produced by Freeman, HEPI and digital education company Kortext.

The survey polled 1,250 undergraduate students through UCAS, the Universities and Colleges Admissions Service, in November 2023, exploring student attitudes to a range of generative AI tools that have emerged since ChatGPT launched in November 2022.

Some of the findings echo those of a worldwide student survey published late last year, by the American non-profit Chegg.org, in which 40% of students reported using generative AI in their studies. Students called for training in AI tools.

In United Kingdom universities, excitement over generative AI's ability to enhance learning, support students and reduce workloads has been accompanied by concern over its potential use for cheating.

But, said Freeman, universities "have upheld standards of rigour, and they deserve credit. Students trust institutions to identify the use of AI tools and they feel staff understand how AI

works. As a result, rather than having AI chatbots write their essays, students are using AI in more limited ways: to help them study but not to do all the work".

SOME OTHER KEY FINDINGS

According to the policy note, 66% of students consider it acceptable to use generative AI for explaining concepts, 54% for suggesting research ideas and 53% for summarising articles. "Only 3% think it is acceptable to use AI text in assessments without editing."

AI is used to produce text for assessments by 13% of students, who usually edit the content. "Only 5% of students put AI-generated text into assessments without editing it personally – which we expect will be prohibited by most institutions," said the policy note.

Worryingly, few students see the 'hallucinations' of generative AI as a real problem, which may suggest they are not verifying information and may be using inaccurate information.

Regarding student views on how universities have responded to the whirlwind of generative AI, 63% think their institution has a clear policy on AI use, with only 12% thinking it is not clear. Most students (65%) also think their institution can spot work produced by AI.

According to the policy note, 30% of students surveyed agreed or strongly agreed that their university should provide AI tools – only 9% said they currently do. Just 22% of students were satisfied with the support they have received on AI. Almost three quarters of students (73%) expect to use AI after they finish their studies.

WHAT IS SURPRISING ABOUT THE FINDINGS

"The first really surprising finding was how many students are not using generative AI," author Josh Freeman told *University World News*.

"We tend to expect that students are up-to-

date with current trends, but many students surveyed have never opened ChatGPT, don't really know what it is, and can't understand how their institution could support them with it. By contrast, those students who are best able to help themselves are doing so – with possibly worrying consequences for a digital divide."

It was also surprising how many institutions are missing out on using AI to support learning, said Freeman. "There has been a knee-jerk reaction to stop students cheating with AI, which I think is understandable. Many institutions are worried the rigour of their assessments is at risk." While universities' efforts to prevent cheating have been mostly succeeding, this might not last as AI tools advance and students become better at using them.

Further, Freeman commented: "Clearly students want AI to be more involved in their studies, but they don't know how yet. So, there could be a major role for institutions in teaching AI literacy.

"One striking thing was that only 9% of institutions have changed their assessments significantly since generative AI tools have become available. These institutions might have a first-mover advantage if they can experiment with original ways of using AI."

THE DIGITAL DIVIDE

The survey uncovered digital divides based on both ethnicity and wealth. Among students from the most privileged backgrounds, 58% use generative AI for assessments against 51% of students from the least privileged backgrounds. Students with Asian ethnic backgrounds are much more likely to have used generative AI than white or black students.

While there is not much difference in the overall proportion of male and female students using AI, there is a gender divide in the way it is used, according to HEPI. Male students use AI text generators more, and are more likely to use AI for data analysis and coding, while female students more often use AI for editing, translating text and transcription of speech.

The 'digital divide' may apply to institutions' use of generative AI as well. "The UK higher education sector is often accused of moving slowly, but that is only partly true of its approach to generative AI," stated HEPI. "While many institutions have kept their historical approach, others have moved rapidly to integrate AI with their educational provision.

"Both approaches appear to carry risks. But given the potential benefits of embracing AI in improving the student experience and most students expecting to use AI in the future, it seems unlikely that any institution can avoid tackling it head-on for long."

STUDENT AND STAFF USES OF AI

The survey found that a popular application of AI, used by 37% of students, is for enhancing and editing writing, while 30% of students said they had used AI tools like ChatGPT to generate text and 25% have used AI for translation, for instance using Google Translate.

In free-text answers, students described a range of other uses for AI such as creating an essay structure, having AI ask questions from a block of text to test student knowledge, generating AI images, or simply for "inspiration".

Interestingly, reported the policy brief: "Just over half (52%) agree that academic staff 'understand well' how AI is being used by students, with a minority (15%) disagreeing." Further, 65% of students are 'quite' or 'very' confident that lecturers can detect if AI is used, while 22% are 'not very' or 'not at all' confident.

There is evidence again of a digital divide, with wealthier students much less confident of their university's ability to spot AI use than other students. "This may suggest that more privileged students are better at using AI without detection," reported the policy brief.

Asked how adaptable institutions have been regarding assessment, 9% of students said

assessment had changed significantly while 24% said it had stayed the same, 23% believed it had changed a little and a substantial 23% were unable to say.

Students were divided equally on whether it was their university's responsibility to provide paid-for AI tools. About 30% agreed and 28% disagreed while 33% were neutral.

Regarding whether their university provided AI tools, 58% of students surveyed said no, only 9% said that it did and a third were unsure. "It is clear many more students want AI tools to be provided by institutions than currently are," reported the policy brief.

Further, the policy brief said: "While students are quite confident that staff understood their AI use for assessments, they are much less positive about how prepared staff are to help them work with generative AI." Only 18% of students agreed that staff are well-equipped.

STUDENTS ARTICULATE THEIR VIEWS

Students were also asked to explain answers. Regarding institutional support, there were some very positive and very negative responses. Among the positives: "It was talked about from day 2. I know what's ok to do and what's not." And: "My institution is very clear on how to use AI effectively and the problems with blindly following it."

Among the negative responses, many students highlighted that AI was seen only as a threat or means to cheat.

One said: "We are told to not use it and that's it." And another: "We are neither being informed, advised, instructed, or assisted to learn more about and deal with AI. All that is done is threatening us that if we use it, we face consequences."

Some students were very positive about the role of AI, including a dyslexic student who reported using AI to ensure that work was correct and understandable. There were many negative

comments, including that generative AI repeats itself, "generates bollocks", does not really apply as yet to the humanities, and that work should be completed by students.

CONCLUSIONS AND RECOMMENDATIONS

The survey made clear that most students have quickly taken up generative AI. Anti-cheating systems seem to have the desired effect so far: "The higher education sector can consider this an early success," HEPI concluded.

The 'digital divide' beginning to emerge has some groups of students adapting more quickly to and benefiting from AI more than others. Still, few students know basic facts about generative AI, such as how often it 'hallucinates'.

Students want more support with AI and more AI tools to be provided for them. "But many institutions may be understandably wary of encouraging the use of AI tools," said the policy note, and later: "There is work to do to constructively integrate AI with learning in a way that does not undermine educational provision."

The policy note recommends, first, that universities "develop clear policies on the acceptable use of generative AI in learning and assessment, and efforts should be made to communicate these to students from the beginning of their course".

Universities and departments should identify which generative AI tools "can support learning constructively and which may be detrimental", and these should be regularly reviewed. There is guidance issued by, for example, the Joint Council for Qualifications.

Second, universities should teach all students how to use beneficial AI tools appropriately and effectively, according to the policy note. "This might include instruction on the different kinds of AI that are available, how to write an effective 'prompt' (input), and how to evaluate the quality of content generated by AI," it states.
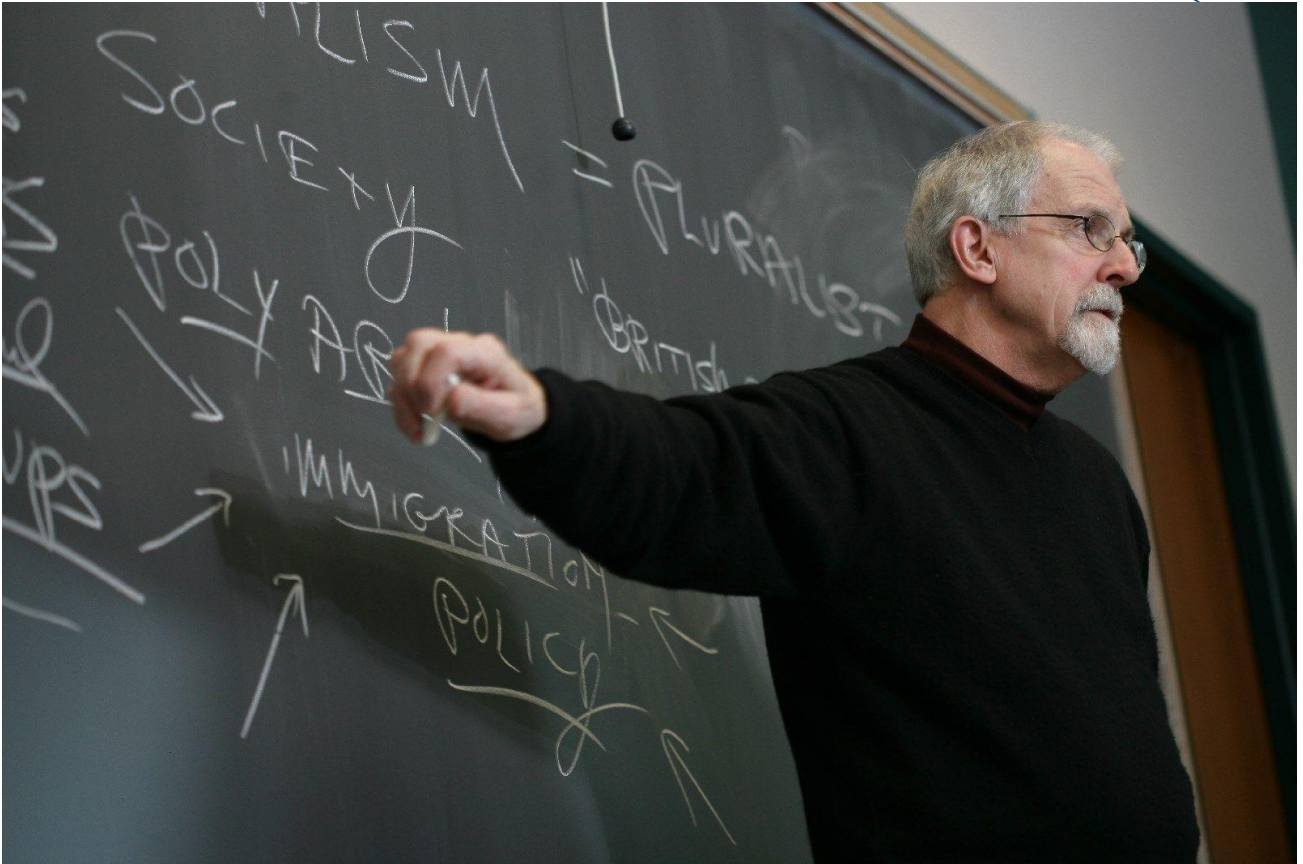
Third, efforts should be made to equalise access to generative AI tools that help learning. When students need access for paid-for AI tools such as GPT4, universities should consider funding subscriptions – "as many institutions already do for other digital tools".

Finally, national policymakers, such as the Department for Education in England, should urgently commission a review of how assessment will be affected by AI, and should publish routine guidance on how to identify and respond to AI challenges in assessment.

"The threats to robust assessment are likely to grow more pronounced over time as AI tools become more sophisticated and students more adept at using them," stated the policy note.

Source: Karen MacGregor, 2 February 2024, Most students use AI for studies, digital divide emerges – Survey
University World News [LINK]: https://www.universityworldnews.com/post.php?story=20240202105653757#:~:text=The%20digital%20divide&text=Among%20students%20from%20the%20most,than%20white%20or%20black%20students.

THE VALUE OF BEING HUMAN: HOW TEACHERS CAN WORK ALONGSIDE AI

Michael Milligan 3 October 2023.

ANNOTATION:

The article examines the impact of artificial intelligence (AI) on student learning. The author identifies potential problems arising from the use of AI in education, such as the loss of originality and critical thinking of students. The need for honesty and integrity in the learning process is discussed, as well as the importance of maintaining the role of teachers to form personal connections with students and create a stimulating learning environment. In conclusion, the author encourages collaboration between AI and teachers to develop effective teaching strategies that maximize the potential of AI while preserving the human aspect of education.

INTRODUCTION

The recently ended strike by the Writers Guild of America, which sought to raise the pay and improve conditions of TV and film writers in an industry virtually upended by the rise of streaming services, also secured tentative agreement on the regulation of artificial intelligence in scriptwriting, highlighting the very real and particular complexities presented by artificial intelligence in a steadily growing number of industries.

While most people recognise the value of AI, it is also tempting to frame AI as a fundamental competitor to human endeavour, particularly when human livelihoods are at stake, as they were in the case of the Hollywood-based guild strike.

That's why I was pleased to read the reported comment by Professor of Information Technology at Babson College Tom Davenport who told the media that the deal reached by the

writers' guild and the film industry "pretty much ensures that if you're going to use AI, it's going to be humans working alongside AI. That, to me, has always been the best way to use any form of AI."

AI IN EDUCATION

Like the film industry and others, the world of education is also having to contend with the challenges that come with AI. While AI is not a new phenomenon by any means (think search engines, Google Maps or IBM Watson), the relatively recent release of ChatGPT captured the public imagination and brought the issue of AI into the spotlight.

Being able to throw out a question and have ChatGPT come back and provide a coherent summary on a complex topic – albeit drawn from known knowledge – is an impressive and, let's be honest, useful function. But for educator's keen on nurturing research and writing skills, not to mention qualities such as critical thinking and independent learning, it poses some real challenges.

As we approach World Teachers' Day on 5 October, which celebrates the important work of teachers, we have a chance to reflect on the impact of AI in the education space and some of the opportunities it presents to improve teaching and learning.

Like any tool properly used, AI can make our lives easier and more efficient. In education it is a tool that both students and teachers can use to help improve the quality of the student's educational experience.

One example of this potential lies in the area of advancing individualised learning, listed by the United States National Academy of Engineering as one of its 14 grand challenges. Individualised or personalised learning recognises that different individuals learn in different ways.

From my own experience as a student and from the programmes we accredit as ABET, we know that students who are accepted, for example into an engineering or computing programme at post-secondary level, have roughly the same starting point. In other words, they have similar levels of intelligence, but they go on to obtain vastly different grades. Some scrape through while others excel. So, the question as an educator becomes how to connect with different students more directly to maximise their learning potential.

Can we use AI to develop teaching methods that optimise learning and maximise student potential? Or at least help us to get to that point faster? The answer, as far as I am concerned, is a resonant yes. AI can help. At the very least, it can help us to identify those students who could benefit from a different approach, possibly long before the individual tutor or teacher is able to make that call.

ARE STUDENTS ACTUALLY LEARNING?

When it comes to education, the burning question is always: are our students learning? If you throw AI into the mix, the question becomes a little more fraught. If students are relying too heavily on AI, there is the chance that they may not be acquiring the skills they need to research, synthesise information and construct a reasonable argument. This is what most people think is at risk with large language models such as ChatGPT.

As I suggested earlier, ChatGPT and other large language models are simply an extension of the kind of technology-based resources that have been available to students for the past 10 or so years via internet search engines. The (newer) AI part is simply the fitting of all the pieces together in a coherent way. And it is here that faculty and institutions have their work cut out for them: if they are demanding original work, students must be required to document and reference and be forthright about where they are getting their information and how it's being assembled.

A critical aspect of this process involves

honesty and integrity, but having some sort of software to identify AI-generated material will undoubtedly be helpful – and necessary. Without seeking to frame the issue as a battle between faculty and students, I think there has to be an understanding that there are times students can use AI, but sometimes original work is required. Enforcing that distinction is important.

THE VALUE OF TEACHERS

Despite the doomsayers who predict an AI takeover in workplaces around the world (and notwithstanding the scriptwriters' fears), I believe it is highly unlikely that teachers will become redundant as a result of AI.

Teaching is an amazing profession. The impact that teachers have on the lives of their students can be profound and last forever. Whether at high school or college, most of us can recall those teachers who were outstanding and had an important impact on one's life and career.

For me this can be reduced to the irreplaceable value of human connection in education. While AI can help to fill in some of the gaps, perhaps with some foundational data gathering, it cannot meet the enduring human need for personal connection, the reward that comes from the sharing of knowledge and the satisfaction and stimulation that comes from grappling in a collective with some of the philosophical and ultimately human challenges that life presents.

AI is now a part of our evolution in technology – there can be no hiding our heads in the sand and pretending it's not there – and teachers need to be encouraged to find ways to bring AI into the classroom and have students use it in a way that is beneficial to them in the long term. AI can be a brilliant tool for teachers and students, provided they find a way, as Davenport said, to work alongside it.

About the author: *Michael KJ Milligan is chief executive officer of ABET.*

Source: Michael Milligan, 3 October 2023, The value of being human: how teachers can work alongside AI
University World News [LINK]: *https://www.universityworldnews.com/post.php?story=20231002151702515*

THE RISE OF MICRO-CREDENTIALS: THE END OF UNIVERSITIES?

Hakan Ergin and John Brennan 9 April 2024

ANNOTATION:

The article discusses the growing impact of microqualifications on higher education and the labor market. The article explores the factors contributing to the popularity of microqualifications, such as skills shortages, accessibility and flexibility of training, and the constant need for career-long learning. The authors also look at possible threats to universities from the increasing interest in microqualifications. The authors emphasize the importance of universities adapting to this changing educational landscape and integrating microqualifications into the existing educational programs. Overall, the article highlights the role of microqualifications in modern education and calls for further research on their impact on educational systems and the labor market.

INTRODUCTION

Micro-credentials have recently been high on the agendas of various higher education stakeholders across the world. An increasing number of universities now offer them in addition to their regular macro degrees. Policy-making bodies have begun to update their national university admission systems to recognise micro-credentials.

Supranational organisations, such as the OECD and the European Commission, have begun to explore further use of micro-credentials in member countries' higher education systems.

Employers, on the other hand, have started to use micro-credentials in their hiring procedures. In a recent study, 5,000 university students, recent graduates and employers across 11 countries were surveyed by Coursera, a leading micro-credential provider, in collaboration with Repdata and Dynata, two market research companies.

It was revealed that 72% of employers tend to employ a candidate who holds a micro-credential. Similarly, 90% of students and recent graduates agree that micro-credentials enable them to stand out to potential employers.

Several global companies have indeed already

started to hire candidates who have micro-credentials rather than a university degree. In an interview he gave to Auto Bild, Elon Musk noted that "there's no need even to have a college degree at all" to work for Tesla, a leading electric car manufacturer.

Similarly, Joanna Daley, the vice-president of talent at IBM, stated that "about 15% of her company's US hires don't have a four-year degree" in an interview with CNBC. She adds in the same interview that "instead of looking exclusively at candidates who went to college, IBM now looks at candidates who have hands-on experience", which can be recognised through micro-credentials.

The increasing value ascribed to micro-credentials in both higher education and the job market forces us to explore the nature of micro-credentials and their potential impacts on the higher education ecosystem.

WHAT ARE MICRO-CREDENTIALS?

As they still are evolving, there is yet no definition of micro-credentials that is agreed by everyone. To address this need, UNESCO organised a global expert panel to reach a consensus on a definition, which resulted in a report titled Towards a Common Definition of Micro-credentials in 2022.

The report proposed a definition of a micro-credential as "a record of focused learning achievement verifying what the learner knows, understands or can do". It also "includes an assessment based on clearly defined standards", "is awarded by a trusted provider", "may also contribute to or complement other micro-credentials or macro-credentials through recognition of prior learning" and "meets the standards required by relevant quality assurance".

Micro-credentials are short courses but not all short courses are micro-credentials. Accordingly, pre-determined standards are

employed to assess micro-credential learners' achievements and the awarding body also has to meet several standards to qualify as a trusted provider. Unlike many short courses, micro-credentials are stackable, which means that they can lead to a degree. While many short courses lack external quality assurance, micro-credentials go through a quality assurance process.

WHY ARE MICRO-CREDENTIALS BECOMING POPULAR?

A recent survey conducted by Robert Half International Inc, a leading international human resources consulting company founded in 1948, has revealed that an overwhelming majority of executives (95%) have reported that they encounter challenges in finding skilled employees who meet their specific requirements.

Micro-credentials close this skills gap by upskilling employees and job market candidates. For example, a healthcare professional can get a six-week micro-credential titled Patient Journey and System Design offered by Future Learn in collaboration with Deakin University and several hospitals to gain operational management skills.

This micro-credential allows him or her to implement theories of capacity planning, investigate causes of delay in emergency situations and obtain resources for enhancing patient satisfaction. Ultimately, this enhances his or her competitiveness in the job market. For those in employment, it results in upskilling in alignment with the expectations of the employer. She or he also has the option to stack this credential with others, thereby paving the way to achieve a graduate degree from Deakin University.

Micro-credentials present several advantages over traditional macro degrees. They offer a shorter time commitment, are more cost-effective, are more closely aligned with the

labour market, can be tailored to meet the learner's specific needs and can even be used to earn an academic degree. Due to these benefits, micro-credentials have become increasingly popular for individuals looking to reskill or upskill.

ARE MICRO-CREDENTIALS A THREAT TO UNIVERSITIES?

There is a growing trend among employers to hire individuals based on their skills and alternative credentials, which has led to an increased interest in obtaining micro-credentials by potential employees.

To capture a share of this market, various accredited providers such as adult education centres, online learning platforms, technology companies, professional associations and non-governmental organisations have begun offering these credentials. As a result, universities are no longer the sole providers of credit-bearing credentials, which raises the question of whether universities will be able to compete or will drop out of this race.

The interest in micro-credentials is rapidly growing, and universities are taking notice by offering them independently or in collaboration with other providers. Some universities have released guidelines on how micro-credentials will be recognised and integrated into degree programmes. Some are even combining them to lead to a degree.

Policy-makers are also exploring the possibility of international recognition of micro-credential certificates at a supranational level.

The European Union has launched the Micro-credentials linked to the Bologna Key Commitments Project (MICROBOL) to investigate how micro-credentials can be integrated into the European Higher Education Area (UHEA).

MICROBOL has created the Common Framework for Micro-credentials in the EHEA, which examines the quality assurance, assessment and description of micro-credentials using the principles of the Lisbon Recognition Convention and European Credit Transfer and Accumulation System.

These efforts by higher education stakeholders suggest that they are aware of the recent surge in interest in micro-credentials. At present, universities are the primary providers of micro-credentials that serve as a part of a higher education course or an addition to an existing degree for learners who have already completed their higher education.

However, if micro-credentials become more widely accepted and relied upon in skills-based hiring decisions compared to traditional degree-based hiring, there could be two consequences for universities.

Firstly, demand for higher education could decrease as skills are earned more flexibly and in a shorter time through micro-credentials. Secondly, learners might turn to non-university providers that can offer more practical and market-driven training.

While it is not possible to predict what the outcomes will be with any certainty, the efficiency of micro-credentials in equipping learners with skills in a shorter time suggests that their future is promising.

Об авторах: *Hakan Ergin is assistant professor of higher education studies at Boaziçi University in Türkiye. E-mail: hakan.ergin1@bogazici.edu.tr*

John Brennan is emeritus professor of higher education research at The Open University, United Kingdom, and visiting professor at the University of Bath. He was formerly honorary research fellow at the University of Oxford and visiting professor at the London School of Economics.

E-mail: john.brennan@open.ac.uk.

Source: Hakan Ergin and John Brennan, 9 April 2024, The rise of micro-credentials: the end of universities?

University World News [LINK]: https://www.universityworldnews.com/post.php?story=20240409123909775

"BIG FOUR" STUDY DESTINATIONS SEE FALL IN SUBJECT RANKINGS

Wachira Kigotho 11 April 2024

ANNOTATION:

This article analyzes the results of the latest edition of the QS World University Rankings by Subject 2024. The article provides an overview of changes in university rankings, focusing on the decline in overall performance in the Big Four countries and identifying the dominance of universities from these countries in the subject rankings. Particular attention is paid to the superiority of alternative universities in certain fields of science. The author identifies countries where universities demonstrate high quality of education despite their smaller numbers compared to other major education systems. The rise in the quality of education in regions such as China, France, Latin America and India is also examined. In addition, the article highlights the methodology of the QS World University Rankings by Subject 2024. The author describes in detail the main indicators used in evaluating

universities, such as academic reputation, employer reputation, research citations and international research network.

INTRODUCTION

While still heavily dominated by universities from the United States and the United Kingdom, there has been a notable decline in the performance of the traditional 'Big Four' study destinations – the United States, United Kingdom, Canada and Australia – as reflected in the recently released QS World University Rankings by Subject 2024.

"The United States experienced a decline of 23% in its overall performance while the United Kingdom and Canada have both had their performance diminish by 8%, and Australia's decreased by less than 5%," said Simona Bizzozero, the communications director of rankings publisher QS Quacquarelli Symonds.

Despite a decline in overall performance, the subject rankings, released on 10 April, were still heavily dominated by universities from the United States and the United Kingdom.

US universities led in 32 subjects with Harvard University and Massachusetts Institute of Technology being the world's strongest-performing institutions, each leading the rankings in 19 and 11 disciplines, respectively.

UK universities took the second position, leading in 16 subjects, with the University of Oxford leading in four. The University of Cambridge, University College London, Royal College of Art, and Royal College of Music led in two subjects each, while four other universities – the University of Sussex, Loughborough University, University of Sheffield and Royal Veterinary College – led in a subject each.

The ranking analysed more than 16,000 university programmes at 1,500 universities in 96 countries and territories across 55 academic disciplines.

It is divided into five broad disciplinary categories that are: arts and humanities, engineering and technology, life sciences, natural sciences, and social sciences and management.

In those five thematic categories, some six universities – Harvard, MIT, Oxford, Cambridge, Stanford University, and University of California at Berkeley – tended to swap the top five positions among themselves.

ALTERNATIVE INSTITUTIONS OF EXCELLENCE

But that scenario was quite different when it came to looking at datasets of specific subjects. Results highlighted learning destinations that were performing much better in some academic fields than the traditionally acclaimed top centres of excellence such as Harvard, MIT, Oxford, Cambridge and Stanford.

For instance, the top four universities in communication and media studies in order of merit were the University of Amsterdam, the London School of Economics and Political

Science, the University of Southern California, and Nanyang Technological University in Singapore.

The top four universities in dentistry were the University of Michigan – Ann Arbor (United States), the Academic Centre for Dentistry in Amsterdam, the University of Hong Kong, and Tokyo Medical and Dental University. The top four universities in veterinary science included the Royal Veterinary College of the University of London, University of California at Davis, Cornell University (United States) and Vetsuisse Faculty Bern-Zurich in Switzerland.

Similarly, top universities in sports-related studies were Loughborough University (UK), the University of Queensland (Australia), the University of British Columbia (Canada), the University of Sydney (Australia), and the University of Toronto (Canada).

Explaining some other interesting findings in the current rankings, Bizzozero noted that UK universities earned 1,569 places across 55 subjects, which was 42 more than in the previous edition.

"That performance represented a significant number of high-quality placements, with the UK boasting the world's highest concentration of subject listings in the top three globally," said Bizzozero.

QUALITY NOT QUANTITY

However, Switzerland's higher education system, according to the QS Quacquarelli Symonds educational researchers, has also been rising in terms of quality, as its universities clinched four first positions in the subject rankings. Three of those were earned by ETH Zurich – the Swiss Federal Institute of Technology – in earth and marine sciences, geology and geophysics, effectively making it continental Europe's strongest institution.

Switzerland's fourth first position was earned in

hospitality by the EHL Hospitality Business School in Lausanne, formerly Ecole Hoteliere de Lausanne.

Although Swiss universities had fewer listings in comparison to the larger higher education systems of some countries, according to Bizzozero, Switzerland has the highest proportion of the world's leading universities within its higher education sector, proof of the elite academic offerings, despite significantly fewer institutions.

Universities in Singapore also appeared to have concentrated on academic excellence as they showed a remarkable distribution of top 10, top 20 and top 50 placements in the rankings. The best-performing university in Singapore was the National University of Singapore which held second and fourth positions globally in history of art and structural engineering respectively.

"Some smaller higher education systems boasted a sheer concentration of academic excellence, with Switzerland, Singapore, the Netherlands and Hong Kong being key examples," said Bizzozero.

Whereas Australia slipped overall in the rankings, its two leading institutions – the University of Melbourne and the University of Sydney – had the world's most top-100 subject placements by getting 53 and 52 positions respectively, which was a no mean feat as only 55 subjects were assessed.

New evidence also emerged in the European Union rankings, which showed that although Germany with 60 universities had the highest number of universities in the region, it was surpassed in performance by the Netherlands and Italy. Datasets provided by QS Quacquarelli Symonds showed that the Netherlands led in two subject areas and Italy in one.

"Both countries also secured a higher number of universities within the top 10 and top 20 positions compared to Germany," said Bizzozero.

What is emerging is that academic excellence is not being confined to specific regions but is slowly becoming globally distributed, an indicator that in the future international students might shift their destination preferences to rising centres of academic excellence.

ENHANCED QUALITY IN CHINA

On the performance of universities in China, Bizzozero noted that although universities secured top 10 positions in only eight subjects, they were already established among the global academic elite. Over the past two decades, China's universities have experienced remarkable growth in research output, at some points surpassing that of the United States in sheer productivity.

That surge reflects not just an increase in quantity but also a concerted effort towards enhancing quality. However, the challenge is to navigate the shift from prioritising rapid growth to focusing on achieving sustained high-quality outputs. As Bizzozero pointed out, it is likely that the success of such a transition will finally determine China's ability to challenge the top traditional universities on the global stage.

Having 101 universities, China was the third most represented country in the rankings under review after the US (213) and the UK (108). Tsinghua University was its best-performing institution, and was in fifth and sixth positions in history of art and structural engineering respectively.

Progress was also noted in France, where universities formed the most internationally collaborative research hub, with 23 entries among the top 10 for the international research network indicator.

In Latin America, Brazil was the most represented country as well as holding the most top 100 positions in the sub-region. The best-performing university in Brazil and the sub-region was the University of Sao Paulo whose

best ranking position was 13th globally in dentistry.

Mexican universities attained four top 20 subject rankings, the highest number for any country in the subregion. Three of those positions were obtained by the National Autonomous University of Mexico, or Universidad Nacional Autonoma de Mexico, in anthropology, modern languages and history of art. The fourth was in marketing and was earned by Monterrey Institute of Technology and Higher Education (Tecnologico de Monterrey).

India's ranked entries and overall performance soared by 19% and 17%, respectively, while Saudi Arabia's King Fahd University of Petroleum and Minerals provided the Arab region with the highest-ranked disciplines: petroleum engineering (5th) and mineral and mining engineering (8th).

METHODOLOGY

The QS World University Rankings by Subject 2024 were anchored in a methodology based on five indicators: academic reputation, employer reputation, research citations per paper, h-index and international research network.

In academic reputation, the rankings' researchers obtained expert opinions from 144,000 university faculty members. The indicator shows which universities other academics consider to be excellent for research in a given area.

For employer reputation, the rankings considered the opinions of 98,000 hiring managers, human resources experts and talent managers. According to the methodology briefing, employers are asked to identify institutions they consider excellent for the recruitment of graduates, and they are also asked to identify the disciplines from which they prefer to recruit graduates.

The research publications metric, which is primarily sourced from the Elsevier-Scopus database, is set for each subject to avoid potential anomalies stemming from small numbers of highly cited papers.

"Both the minimum publications threshold and the weighting applied to the citations indicator are adapted to reflect prevalent publication and citation patterns in a given discipline," states the methodology briefing.

Subsequently, the researchers used the h-index to measure both the productivity and impact of an academic or department at a university. This indicator is based on a set of the academics' most cited papers and the number of citations they have received in other publications.

The international research network (IRN Index metric) is intended to establish an institution's ability to establish sustainable research partnerships with other higher education institutions.

SUPPORT FOR UNIVERSITIES IS CRITICAL

QS Senior Vice-President Ben Sowter said in a press release: "With rising global inflation, geo-political instability and general elections in 50+ countries, supporting higher education and international student mobility has never been more critical as it drives innovation and societal advancement.

"QS' largest ever-university comparative analysis highlights the importance of diversity, research partnerships, investment, and cross-border academic and industry collaborations."

As Sowter notes, the current rankings are an eye-opener of the challenges that lie ahead in global higher education, as they bring together a complex interplay of economic, geopolitics and environmental factors. Nevertheless, there is an understanding that most of those challenges will require a broad approach that recognises the role of universities in fostering innovation and societal progress.

Source: Wachira Kigotho, 11 April 2024, "Big Four" study destinations see fall in subject rankings
University World News [LINK]: https://www.universityworldnews.com/post.php?story=20240411175627123#:~:text=%E2%80%9CThe%20United%20States%20experienced%20a,rankings%20publisher%20QS%20Quacquarelli%20Symonds.

UNIVERSITY LEADERS EXPLORE HOW TECHNOLOGY CAN IMPROVE EDUCATION

Liz Newmark 10 April 2024

ANNOTATION:

The article discusses the role of technology, in particular artificial intelligence (AI), in modern higher education on the example of British universities. Using data from the HEPI student survey, the authors analyze the level of AI use by students and their perceptions of the effectiveness and reliability of the technological support provided to them. The article raises the issue of the potential risks of AI-based cheating and the need to better educate students in the effective use of technology. The importance of public debate and awareness of the pros and cons of AI is also highlighted. In conclusion emphasizes the need for a balance between traditional teaching methods and technological innovation, as well as an active role for management teams in developing and implementing digital strategies in universities.

INTRODUCTION

Technology is fundamental for higher education providers, but for many in the sector it remains "something of a black box", warns a collection of essays by university leaders, published by the Oxford, United Kingdom-based Higher Education Policy Institute (HEPI).

"We would like the digital university experience to be … responsive, intuitive, connecting and personalised," writes Professor Karen O'Brien, vice-chancellor and warden at northern England's Durham University, "even though procurement processes, uneven technological development and regulatory controls mean that a 'seamless' straight-to-smartphone student experience is still some way off".

In her chapter on governance and leadership at modern universities, O'Brien emphasised that no educational organisation would ever consider the learning 'experience' as something that just happens to students. Digital strategies should be implemented in ways that "empower and equip our students with the knowledge and skills they

will need to succeed in the era of artificial intelligence", she made clear.

Bringing together leading voices from across the university sector to explain how technology can improve higher education, the anthology, released on 28 March 2024, details the current digital landscape of a modern university and highlights the advantages technology can bring to students from the admissions process to graduation.

WHAT MARY CURNOCK COOK SAYS

Mary Curnock Cook, former chief executive of the Cheltenham-based Universities and Colleges Admissions Service (UCAS), edited the collection. She told University World News that, "without the foundations of modern technology infrastructure (data, cloud, wifi, etcetera) it is hard for universities to take advantage of technology to enhance teaching and learning, streamline student support and services, and optimise back-office functions".

Therefore, universities should change their working practices, the report concludes, as they rely too much on large in-house information technology teams. "Running systems on outdated legacy IT and carrying technical debt sucks up huge IT resources which could be better deployed to enhance the student experience and drive efficiencies," she said.

Curnock Cook, who chairs the Wiltshire, southern England-based Dyson Institute of Engineering and Technology and the qualifications sub-committee of London publishers Pearson Education Ltd (where she is a non-executive director), said it was best to be realistic when introducing technology into universities.

University leaders know technology is "now essential infrastructure to run a successful university – both for students and for staff", she said. "But painful experience of trying to achieve 'digital transformation' and perhaps a lack of technology experience on executive

teams and governing bodies have led to caution and even fear of embracing the potential of technology in higher education.

"Sometimes modernising technology is better served by managing a patient step-by-step rebuilding of IT architecture rather than an unrealistic stab at 'digital transformation' which so often results in cost overruns or total programme failure," she told University World News.

If this is done successfully, cost savings will follow, Curnock Cook added: "There are undoubtedly large efficiency dividends available from new technologies and co-pilots [a teaching team member sitting in the physical lecture room, connected to a remote classroom, who can manage online discussion boards for example] across many aspects of university operations, marketing, student support and administration.

"And since the pandemic, universities have been working with students to understand the optimal balance between in-person and online learning resources to support academic attainment."

In one example, the report highlighted how the Barcelona, Spain-based Universitat Oberta de Catalunya – Open University of Catalonia – reduced its operating costs by €300,000 (US$325,000) a year simply by moving to the cloud.

FUTURE-PROOFING HIGHER EDUCATION

Universities themselves should spend much more on virtual courses, Nick Mount, professor of learning innovation and academic director of the University of Nottingham Online, writes in his chapter on future-proofing higher education.

He said most UK higher education institutions' investment in online education "is a fraction of what has been invested in physical campuses", and as online learners "are arguably the most significant growth opportunity for UK higher

education from 2030", competition to attract them will be intense and significant investment in this area is essential.

Technology also enables more people to benefit from higher education, particularly in the UK, where tuition fees are often around £10,000 a year (USD12,700) – and at least GBP18,000 for international students – the anthology contributions stress. They note that Britain's high cost of living and inflation (still 4.8% in February 2024) has hit students hard.

Indeed, technology has an "amazing possibility" to "deliver many of the qualities of an elite education for a mass population", Professor Ian Dunn, provost at Coventry University, writes in his chapter on 21st century learning.

And not only in the UK, as "really high quality, pedagogically sound online education offers huge opportunities for low cost, highly accessible education in emerging economies" too, Curnock Cook stressed to University World News.

Universities should not take a 'yes or no' approach to technology either but see it as supporting traditional teaching, said anthology writers. Gavin McLachlan, vice-principal, chief information officer and librarian at the University of Edinburgh in Scotland, said any leading university requires "a robust technological foundation to support its academic mission".

"Increasingly, students are looking for options across on-campus courses, online and remote courses and various mixes of hybrid and fusion education," he writes in his chapter on "Building blocks for excellence in modern universities".

For example, personal tutoring support using AI can advance students' academic experience "at higher intensity and lower cost than can be provided by humans", Curnock Cook noted.

But currently, technological developments are "running ahead of universities' ability to adopt and assimilate new technology into their operational and pedagogical models," she warned. "So, it will likely be some time before universities can address technology enhancements as an efficiency measure."

But they should still prepare and start to embrace new technology, she told University World News, as: "Delegating some of the load of education administration and academic support to technology offers the opportunity for academics to focus on the interactions with students that challenge and develop critical thinking, innovation and knowledge creation – the things that AI cannot do effectively."

At Durham University, for example, vice-chancellor O'Brien said a 24/7 AI assistant 'Holly' has been key in helping students through the enquiry and application process: "She has answered thousands of questions and freed staff to add value in other places."

THE HEPI STUDENT SURVEY

Josh Freeman, HEPI policy manager, assured University World News that while the use of generative AI "has become normalised in higher education, we find that universities have so far prevented an epidemic of AI-based cheating".

Indeed, HEPI's February 2024 paper on students' attitudes to AI revealed that 53% of UK students use AI to help them with assessments, especially via AI 'private tutors', helping to explain concepts. However, only 5% put AI-generated text into assessments without editing it, said Freeman, "so cheating in the sense everyone worries about does not seem to be widespread yet".

The survey, reported in University World News, was based on a poll of 1,250 students throughout the UK. It also raised concern over a 'digital divide'. Well-off students are more likely to use AI for assessments (58%) than the least privileged (51%), said Freeman. In general, "there are plenty of students who are experts and plenty more who have never logged on to

ChatGPT".

Meanwhile, only 22% of students are satisfied with the technology support they have received at UK universities, saying they should provide more AI tools. "Universities change slowly, particularly with regards to technology, and it seems they have not rapidly integrated generative AI into their teaching (yet)."

On the positive side, 63% of students think their institution has a clear policy on AI use and a similar proportion (65%) think their institution could spot work written with AI, "so as a whole they have done a good job in setting clear expectations around AI use".

This could change, Freeman warned, with students rapidly learning how to use a technology that is becoming much more powerful, especially as ChatGPT 5 is due to launch this summer, with improved linguistic processing and reasoning tools.

The HEPI student survey also highlighted AI's downsides. More than a third of AI users do not know how often it produces made up facts, statistics or citations (hallucinations).

To counter the risks of what Professor Kathleen Armour, vice-provost (education and student experience) at University College London, in her AI chapter calls "the most transformative innovation any of us will see in our lifetimes", Freeman said institutions must teach students how to use AI effectively and check whether its content is of high quality.

Armour emphasised that "healthy public debate" on AI will depend on everyone being knowledgeable about its advantages and disadvantages.

At Durham, Karen O'Brien agrees that balance is needed when looking at technology in education: "Universities are (rightly) places of multiple voices and priorities," she said. But with technology underpinning key university processes such as enrolment, assessment and graduation, the "voice of IT and digital" must be heard clearly and consistently.

"Whether or not the chief information officer is a member or a regular attendee at the executive is less important than… collective ownership of this agenda by the whole team," she argues in her chapter. "We all need to know what data and technology underpin key processes such as enrolment, assessment and graduation."

Management teams must be more mature in dealing with IT and accountable for digital strategies, O'Brien continued: "Those of us in management roles see core enterprise systems and digital technologies as the fabric of a higher education institution as much as classrooms, books and labs.

"Ideally, boards should include at least one trustee with IT governance expertise, just as they typically include individuals with backgrounds in accountancy and financial management," she concluded, as: "We are all part of the 'IT crowd' now."

Source: Liz Newmark, 10 April 2024, University leaders explore how technology can improve education
University World News [LINK]: https://www.universityworldnews.com/post.php?story=20240410113514171

GENERATIVE AI ACTION HINTS AT CORE FUTURE ROLES IN UNIVERSITIES

Karen MacGregor 28 January 2024

ANNOTATION:

The article presents an analysis of the impact and use of artificial intelligence (AI) in higher education in the light of current challenges and trends. It highlights various aspects of AI applications, ranging from educational methodologies and student support to ethical and legal issues. The importance of balancing automation and human intervention in learning processes is discussed, as well as the need to guarantee the ethical use of AI and the protection of students' interests. The article emphasizes the role of regulation and the creation of ethical standards for the use of AI in education. In addition, the article raises important questions about the potential consequences of the use of AI, including its disruptive potential and philosophical aspects of education. The discussion also includes current legislative initiatives aimed at regulating the use of AI in

higher education. Overall, the article encourages discussion and the development of a comprehensive approach to the use and regulation of AI in education, taking into account its potential risks and benefits.

INTRODUCTION

With the arrival of generative AI such as ChatGPT, science fiction took a big step towards fact. Last year, universities explored the implications of AI. This year kicked off with innovative Arizona State University in America partnering with ChatGPT's creator to advance learning, research and services – hinting at core roles for AI in universities in future.

Arizona State University (ASU) announced on 17 January 2024 that it was the first university to forge a partnership with OpenAI, the company that developed ChatGPT. The ChatGPT Enterprise platform will be integrated into the institution with a focus on "enhancing student success, forging new avenues for innovative research and streamlining organisational practices", it said.

The university will develop personalised AI

tutors and study-help avatars for students, who overwhelmingly embrace the technology, ASU Chief Information Officer Lev Gonick told University World News.

Regarding welfare, many students have said they prefer the anonymity of dealing with a bot to queuing up in support offices – especially when their problems have to do with health or well-being. Humans step in to help when needed.
Last year was the explosive debut of ChatGPT, which OpenAI said had been adopted by teams in 80% of Fortune 500 companies within nine months. It has been vigorously exercising minds at universities across the world.

This year, higher education will further explore the potential of the technology and the focus is likely to be on implementation, leveraging the power of generative AI to improve life and learning for students, and to boost research.

"The challenge will be to address the 800-pound elephant in the room," said Gonick, which is the quality of information – such as 'hallucinations', when ChatGPT generates incorrect information as fact – and concerns around privacy and data protection.

The university is looking forward to the higher security and privacy of ChatGPT Enterprise and will raise the quality of information used; already, ASU and other institutions have developed multiple in-house AI language models.

SCIENCE FICTION TO SCIENCE FACT

This is all a long way from the initial responses of some universities around the world to the advent of ChatGPT in November 2022, which was to banish it from campus. Today, the importance of AI is recognised by universities everywhere, though not all are engaging with it.

University World News is moderating a panel at the 2024 ABET Symposium, which is titled "Science Fiction to Science Fact: The impact of AI on higher education" and will be held in

Tampa, Florida, in the United States on 4-5 April. ABET is a global non-profit quality assurance agency in the science, technology, engineering and mathematics fields, and one of the partners of University World News.

To inform this and other discussions, it is useful to look at current aspects of AI in higher education – such as personalised tutoring and ethical issues around AI in learning – drawing on experts from the European University Association, City University of New York and ASU.

Arizona State University, based in Phoenix, has four campuses and more than 73,000 undergraduate and graduate students from across the US and some 120 countries. Importantly, for nine years in a row it has been ranked America's 'most innovative' university by the US News & World Report.

AI is identified as a high priority all the time among the more than 800 universities and rectors' conferences in 48 countries represented by the European University Association (EUA), said Dr Thomas Jorgensen, its director for policy coordination and foresight.

"It comes up because everybody knows that something is happening, but nobody knows exactly what is happening. This is not an area where you sit in Brussels and the direction of travel is absolutely clear," said Jorgensen.

The EUA is setting up an AI working group, which will begin in March. "We need to facilitate a discussion about what the real issues are. What do we know, what do we need to know? It's been a year of experimentation, really. We can begin to share the outcomes of that experimentation, maybe share a bit about the methods of that experimentation," said Jorgensen.

The EUA has considerable convening power in European higher education. It contributes to policy-making in the European Union and is key in raising issues that are affecting universities. The association identified new digital

technologies as a potent new development back in 2018, and in its 2021 Pathways to the Future report, where it focuses on labour markets.

SOME AI IN HIGHER EDUCATION IMPERATIVES

Matthew K Gold is an associate professor of English and digital humanities at the Graduate Center at City University of New York. He writes about digital pedagogy, new ways to teach online with technology, and the impacts of technology on the academy.

Gold pointed out that groundwork for generative AI has been laid in higher education over the past decade: "There's been an increasing openness, especially among faculty who don't have technical skills, to begin thinking through how to productively incorporate technology into their work. Certainly at an earlier stage, there was a lot of fear and distrust of technology."

Within the education technology space, there is a schism between for-profit corporations that create proprietary platforms – "which often speak to education at scale", for instance learning management systems – and academics in a space around open education that focuses on student expression (which encourages students to produce and publish) and student learning.

"The COVID pandemic threw everything upside down, because suddenly everyone, no matter their comfort with technology, had to at least teach via Zoom or use email or learning management systems," Gold told University World News. "Many corporations within the ed tech space saw an opportunity to grow their operations, a lot of them very profitably."

"Now we're moving from the pandemic into a hybrid-ish environment where many classes are still in person, but many are also now online, or a mix of in person and online. We're coming back to where we were before the pandemic, but with a lot more people who have experience teaching with technology," Gold explained.

Last year, generative AI brought up issues around authenticity and plagiarism, originality and cheating. There are some other things to be concerned about, said Gold. For instance, incorporation of AI based tools into proprietary platforms that are providing a range of services to universities. For instance, rights and privacy issues around the handling of student papers. "As with anything, there are things to be wary of and there are benefits."

Indeed, there have been related and rich debates around AI and student assessment. For Jorgensen, an optimal approach for universities is to have multiple strategies – from policing student uses of AI, to using other AI to check for unacceptable uses of AI, to changing examination methods. Some have argued that AI could encourage universities towards more authentic forms of assessment and more focus on learning outcomes.

Of course, generative AI is not new to some disciplines, Jorgensen told University World News. It has been used in law for a long time, in a very practical way. "But when you begin to play around with AI, you need to learn how to communicate with it. It doesn't do what you want straight away." Many universities have responded with, for example, training courses in 'prompt engineering' – structuring text so that it can be understood by generative AI.

Universities also have to contend with AI developments outside the higher education sector but related to it, such as the labour market and the future of work. AI technologies driven by big data are triggering what UNESCO and others label the Fourth Industrial Revolution.

Universities have long needed to train students for jobs that do not yet exist, but an AI-driven transformation of the world of work looks set to happen quickly and extensively.

There are interesting discussions to be had, including about reskilling people for changing jobs, said Jorgensen, who does not envisage mass graduate unemployment because of

technology. "It might be that the workplace is going to change and we're going to do more. AI is going to be an efficiency tool," he said.

A FOCUS ON STUDENTS

For education systems, staff and students, the COVID pandemic highlighted important questions, such as the impacts on students of solitary digital learning versus face-to-face learning – for instance, mental health issues among students increased, in some cases dramatically.

At Arizona State University, the focus is on students and an important part of new work using AI is in the area of educational techniques, supporting students with a personalised AI tutor and student avatars to provide learning assistance, among other things.

Under the new partnership, faculty and staff have been invited to submit proposals for innovative uses of ChatGPT Enterprise. This process opens on 1 February 2024, but already emails have poured in offering ideas, said Gonick. The goal is to "leverage the university's knowledge core to develop AI-driven projects that look likely to revolutionise educational techniques, research and administrative efficiency", he said earlier this month.

Gold is sceptical of the potential of AI to support student learning, and to help identify students who are at risk and need a supportive intervention. "We need to know more about how the students themselves perceive AI systems that they interact with and the effects that has on both their wellbeing and their learning.

"For instance, how does the learning in an online class with lots of AI assistance compare to an in-person experience? I worry that universities will turn to AI-based advising systems in place of properly staffed and funded academic advice offices," Gold told University World News.

"I believe strongly in the value of synchronous education. Educational experiences that involve, say, a class meeting in person or over zoom, but synchronously exchanging with each other. What worries me are models of online education that are largely asynchronous, that promise scale to universities. It's also a little harder to know how well students are doing in asynchronous courses, both in the sense of learning and general wellbeing, even though such courses create more data for universities to analyse."

Gold stressed that the usefulness of technology has to do with how technology is implemented, and it must foreground student wellbeing. "For instance, in my classes, I have students do a lot of online writing and blogging and publishing.

"A positive aspect of that is it displaces the faculty member as the sole source of authority in the classroom and enables students to write for more public audiences. And it enables them to think of themselves differently, not just as learners, but also as people who have important knowledge, thoughts and experiences that they can share with the world," Gold said.

Far from making life easier, to work well in the classroom, often technology has to be labour intensive for both the student and academic, Gold continued. "Both have to be invested in the use and evaluation of technology, and should approach technology from a critical perspective, asking not just about using the technology but questioning what it is, how it works and what happens to student data that is created through it.

"For instance, what possibilities exist for students to opt out of such systems and protect their data? What transparency is there for students to know how their data is being handled by universities and third-party companies they partner with?"

ETHICS AND REGULATION

The ethics of AI in higher education was another major area of discussion last year. ASU

did not only start engaging with OpenAI because it has a 65% of the generative AI market among its peers, but because of shared values, Gonick told University World News.

Both partners value inclusion of all in the benefits of technology. "Many of OpenAI's people are graduates of excellent, exclusive private Ivy League universities," he said. But the company chose as its first university partner a big state institution that works to include, not exclude.

Europe has been quick in responding to ethical implications of AI in education. In October 2022 – a month before ChatGPT was launched – the European Union published "Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators".

The guidelines, the EU said, are "designed to help educators understand the potential that the applications of AI and data usage can have in education and to raise awareness of the possible risks so that they are able to engage positively, critically and ethically with AI systems and exploit their full potential".

Thomas Jorgensen is in favour of regulation around AI. "I would not like to see a completely unregulated, AI driven ed tech out there". It is not just a technical discussion, he said, but about policies that give a voice to people and groups in need of inclusion.

The European Union's recent AI Act moves along this track. It acknowledges an important role for AI in education, but is concerned about other issues such as equity and rights; for instance, that data sets used do not reproduce bias. These are major concerns, Jorgensen stressed: "You need to guarantee to your students, particularly minority students, that you're not being guided as a minority student, you're not being labelled because of your religious background, or as somebody who might have a problem and should take another course."

There are also security concerns, intersecting with the equity and sharing imperative that drives the open-source movement in higher education. For instance, in France there is 'general purpose' AI that is open source, and that anybody can access, and tamper with or misuse.

There are challenges such as this one on the horizon, Jorgensen said. The AI act contains "generous exceptions for research purposes. Things that are absolutely forbidden to do – such as emotion recognition or subliminal manipulation systems – can be used for research.

Research into areas such as biohazards or viruses requires good security systems so that they do not fall into the wrong hands. Technology can be abused, and dangerously so. "I expect people who research viruses to be in suits and clean rooms with locked gates so things don't get out. I expect the same for researchers in the nasty parts of AI," said Jorgensen.

HOW DISRUPTIVE MIGHT AI BE?

The uses and implications of AI will continue to evolve, as technology will continue to evolve.

More and more universities have technology-based services for students, such as user-friendly AI-enhanced student engagement platforms that provide services on demand and around the clock, liberating the time of support and administrative staff to assist students with problems.

It is likely that AI activity at Arizona State and other universities will take AI integration to a new level this year. In Europe, a normal sized university has 30,000 to 50,000 students, and many have administrative staff shortages, opening the door for AI to provide improvements. Many US publicly-funded universities face the same lack of financial or human support.

But there will be restrictions on uses of AI in Europe, as Jorgensen pointed out. "The European Union AI Act defines education as a high-risk area.

For instance, a chatbot providing guidance might lead to decisions that have a major impact on people's lives. That's a high risk. This doesn't mean you can't do it, but it requires clarity about what data sets the chatbot has been trained on, and human oversight."

Ed tech discourse suggests that fully automated student guides will be better than the support currently available. But that has yet to be proved, Jorgensen said. He used web advertising as an example: "Algorithms figure that if you want this, you probably want that. But we're still at the point that if I buy a washing machine, Facebook will think I immediately need to buy another one. I'm not sure of the efficiency of that," he said.

Jorgensen believes the real generative AI revolution will be in research. "If we don't do it, somebody will. The potential is so big that already the big tech companies are major players, letting their algorithms loose on material science and chemistry. IBM does it, Google does it," he said.

The disruptive potential of AI in teaching and learning needs more evidence on exactly what problems AI might solve, he added. Some of the concerns around AI in student learning raise philosophical questions about what learning is and what is taught, Jorgensen said.

"Are we teaching students to put words together in a certain sequence, with facts in it, in a certain style? This has been seen as not an automatic process, but are people programmed to reproduce information in a similar way to a smart machine? That's disruptive at a philosophical level for education."

Jorgensen suggested reading science fiction – classic robot novels by authors such as Isaac Asimov and his robot series – to explore questions around how the mind works, human behaviour and the brain's robotic replication.

Science fiction, he reasoned, might help us to understand today's AI science fact.

Promoting high quality in education!

May 2024

Editor: Dr. Sh.M. Kalanova, Professor, President of "Independent Quality Assurance Agency in Education" (IQAA).

Translator: Shayzada A.D., Chief Expert of the Department of Analysis and Quality of the "Independent Quality Assurance Agency in Education" (IQAA).