

Ethical considerations and pedagogical challenges of integrating AI in Higher Education in the UK

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This study investigates the ethical and pedagogical challenges of AI integration at the five most reputed universities in the UK, from the direct and immersive view of students in higher education. Those challenges and ethical challenges are presumed in the study to present in the decision-making process, biased algorithms, and human displacements. Using interpretivism and qualitative interviews, this research found three interesting domains of findings that can be useful for those universities to improve their future models of AI integration. Within the limited scope of this research, AI integration was stated by the respondents to possibly create biases between the native and non-native learners; secondly, AI internet was not considered very useful for students and educators in making pedagogical decisions; finally, AI integration would be creating more ethical challenges of human displacement in higher education, the educational field requires more extensive communication among the learners, educators, and the learning communities. Those findings and indications would trigger future research from those perspectives and suggest strategies for UK educators to enhance their models of AI integration in higher education. Using interpretivism and qualitative interviews, this research found three interesting domains of finding that can be useful for those universities to improve their future models for AI integration. Within the limited scope of this research, AI integration was stated by the respondents to create biases between the native and non-native learners; secondly, AI intervention was not considered very useful for students and educators in making pedagogical decisions; finally, AI integration would be creating more ethical challenges of human displacements in higher education, the field demands more extensive communication among the learners, educators, and the learning communities. Those findings and indications would trigger future research into those perspectives and suggest strategies for UK educators to enhance their models of AI integration.

KEYWORDS: Artificial intelligence, Ethics, Teaching and learning, Pedagogy.

1. INTRODUCTION

Due to the lasting impacts of Brexit, higher education institutions in the UK have to develop ways to balance their financial performance, with increasing tuition fees being an important choice. This means that students in higher education in the UK have to invest approximately £10,000 per year. Besides, Generation Z is those dominating the higher education level, who have demanded more innovative techniques and tools to enhance their learning experience (Bearman et al., 2023). Only when those requirements are achieved, global students retain the attractive brand of UK higher education (Zawacki-Richter et al., 2019). AI integration has been considered an ultimate choice for UK universities to fulfill the above three objectives. The digital learning environment across universities in the UK has been enhanced significantly over these years. E-learning strategies were also reported to have positive impacts on increasing diversity and inclusivity on their campuses. The UK higher education system has many advantages over higher education in the US, Canada, and Australia based on its centralized management model, and the Office for Students (OfS). This has facilitated the challenges of the UK in integrating AI into this e-learning environment, with many advantages and benefits reported (Al-Zahrani & Alasmari, 2024).

1.1. Background

However, the integration of AI into e-learning environments in the UK was also researched and analyzed by scholars to have a rapid adoption rate (Bearman et al., 2023). This means that there are still many drawbacks and concerns that the Office for Students (OfS) and the leaders of these universities should critically consider. Among those, ethical concerns and pedagogical challenges for this integration are the most important issues (Akgun & Greenhow, 2022). From the technical side of AI adoption, biased algorithms in AI were also reported by many scholars to generate many assessment gaps among students, which might have significant impacts on their performance assessments (Al-Zahrani & Alasmari, 2024). Additionally, as reported by Akinwalere & Ivanov (2022), higher education has distinctive characteristics over other levels, with more sensitivity, empathy, cross-cultural understanding, knowledge, and experience sharing in the extensive courses of communication between

students and educators. AI integration would mean a great displacement of human labor, including teachers, professors, and staff (Zawacki-Richter et al., 2019). While the UK economy has been negatively impacted by the great resignation of laborers post-COVID-19, AI technology's displacement of human labors may pose more ethical challenges for universities to maintain their sustainable developments.

1.2. Research Problem

This UK-based research is conducted at a higher education level across 5 universities in the UK, with qualitative interviews used as the main tool for empirical data. The result of this research gives answers to the ethical and pedagogical concerns of AI integration across high education in the UK: biased algorithms and potential biases, the significant impacts of AI in the decision-making process, and the long-term vision of human displacement from this integration. The current relevance and significance of each of those elements will be critically assessed in this research.

1.3. Aims and Objectives

The specific objectives of this research are:

- *To investigate the relevance and possibility of biased algorithms in AI integration in higher education in the UK.*
- *To investigate the significance of AI in the decision-making process of UK universities at higher education levels.*
- *To identify and critically evaluate human displacements and potential challenges for HRM of universities in the UK in higher education.*

1.4. Research Questions

- *What are the relevance and possibility of biased algorithms in AI integration in higher education in the UK?*
- *What are the advantages of AI in the decision-making process of UK universities at higher education levels?*
- *What are the rationales of human displacements and potential challenges for HRM of universities in the UK in higher education?*

1.5. Significance of the research

The first value created from this research is that the benefits and challenges when adopting AI into higher education of UK universities can be revealed to the most practical level so that the management and learners of UK universities can revise and improve their structures of tuition fees. With the advantages of AI technologies, universities can reduce labor pressure, and training costs, lower operating costs, more efficient decision-making processes and staffing practices, etc. Secondly, the research also contributes to the deployment of AI into higher education, and with better decision-making processes, inclusivity, and diversity, UK universities can enhance their reputation at this educational level. Finally, AI adoption can also help UK universities deal with the labor shortage, an emerging trend in the world that all universities have faced.

2. LITERATURE REVIEW

2.1. AI integration and potentiality of biased algorithms in higher education

Akgun & Greenhow (2022) reported in this study that AI adoption can bring universities and students in higher education a lot of benefits. The generative AI application and platforms can provide learners and teachers with enhanced user experience, behavioral psychology empowerment, connectedness, and a larger scope of diversity and inclusion for levels in this level from all around the world. However, the dark side of AI adoption should be first perceived from the design (Bearman et al., 2023). Akinwalere & Ivanov (2022) stated that a series of AI algorithms, the core AI adoption at universities, can be subjects of basis from the designing phase. The inputs of data and documentation for AI's machine learning can be biased due to the lack of cultural understanding of the staff and designers of universities (Bates et al., 2020). This is a critical issue, since learners in higher education at those universities are from many different cultures (Chan, 2023; Chatterjee & Bhattacharjee, 2020).

Al-Zahrani & Alasmari (2024) reported in their study that at UK universities, AI applications should be servicing the majority of learners, who are UK or European citizens. Due to cultural and geographical differences, non-native learners may be subjects of bias in AI applications and activities. In other studies of Bearman et al. (2023) and Zeb et al. (2024), these authors reported that in the long run, with machine learning, AI applications, and activities can also be designed and oriented to serve the needs of the majority of learners. This raises the concern of equality and inclusivity for all learners in higher education at those universities.

2.2. AI adoption and its relevance in the decision making process in higher education context

AI and Machine learning were reported by many authors as very useful for constructing a valuable framework for decision-making (Chan & Hu, 2023). However, not in all cases that AI technologies useful for decision-makers,

especially when facing more complex and opaque models (Colchester et al., 2017). These authors explained that machine learning of AI needs time to adapt, integrate, and evolve according to the series of data collected in specific settings, which may take months or years. Secondly, as education is a field that extensively requires human values and ethics, AI techs still remain fallible (Bond et al., 2024). It was the challenge of knowledge imbalance for AI to make the decisions that can balance and ensure benefits and values for both learners and teachers in this professional setting (Chan, 2023). This means that not all AI-assisted decision-making tasks are reliable, and leaders at UK universities still need a more human-centered approach to exploit the values of AI machine learning in their decision-making process (Zawacki-Richter et al., 2019). It was also reported that biased AI systems can have negative impacts on the decision-making process, especially in contexts with different backgrounds of learners in terms of gender, ethnicity, and religion. Thus, to avoid discrimination, AI's adoption into higher education at UK universities still needs a higher rationale of human management and intervention (Crompton & Burke, 2023).

2.3. The ethics of human displacements in UK higher education due to AI adoption

Although the UK education system has faced the issue of labor shortage in professional fields such as higher education, the long-term consequences of human displacements due to AI adoption still need critical consideration (Pisica et al., 2023; Cox, 2021). According to the study of Kuleto et al. (2021), the algorithmic perceptions of AI-based HRM practices at this educational level would not be effective enough to assess skillfulness, emotional intelligence, experience, innovation, creativity, and flexibility, etc. those characteristics are very important to define the competencies and skill of the educators at this level (Schunk et al., 2008). Thus, job security of educator would be unfairly threatened due to the inefficiencies of the AI system in evaluating their spiritual and inarguable contribution to the courses (Kose & Koc, 2015; Nunn et al., 2016).

Secondly, the learning process in higher education is also different, which cannot be rigidly and scientifically designed and controlled by AI instead of the tutors/teachers. As reported by Nguyen et al. (2023), communication between learners and educators in higher education is very important, so that the learners can retrieve experiences, hints, observations, best practices, failures, and even personal references for the learning process. Compared with these assets for educators, machine learning of AI cannot be as achievable (Johnston et al., 2024).

Moreover, human interventions and communication among educators, learners, peers, and communities at the higher education level are very important for retrieving the practicality and applicability of the knowledge newly learned. This is also the ultimate outcome of the learning process in higher education at UK universities (Farrelly & Baker, 2023). However, when humans are displaced by machine learning, there may be serial disruption of relationships and social interactions in learning at this level (Slimi & Carballido, 2023).

3. METHODOLOGY

In this research, the research applies the Research Onion of Saunders et al. (2012) to select the essential elements of the research method.

3.1. Research design

This research aims to examine the ethical and pedagogical concerns and challenges of integrating AI into higher education in UK universities. This topic requires deeper understanding, good knowledge and experience in the field, and a specific level of technological skills (Donley & Grauerholz, 2013). Thus, the researcher decides to use the interpretivism philosophy to approach this topic.

With an inductive approach, a mono-method experiment, the researcher would use a qualitative, face-to-face interview to collect cross-sectional data from the participants. As compared with positivism and qualitative approaches, this research design should ensure that the researcher can collect the most descriptive, applicable, and interesting fields of data that match the research aims and objectives. Secondly, this research design can also ensure that the researcher has a sufficient level of control, validity, accuracy, and applicability of the research results in specific domains (higher education courses at UK universities). Finally, with the limited scope and scale of application of this research, using this research design and method is more suitable for collecting the primary base of site-based data, which is valuable, reflective, and manageable (Donley & Grauerholz, 2013).

3.2. Data collection

The primary empirical data collection in this research should be constructed by the transcripts and records generated from the interviews, which were expected to be 10 - 12 interview sessions. Each interview should last approximately 20 minutes, with a videotape and hand notes. The clusters of 10 – 12 video tapes and hand notes are then transcript, formatted, and arranged as the main body of data collection. All elements of data, including

the videotapes, handouts, and transcripts, will be then saved for later use in data analysis and publication of the research.

3.3. Sampling

The researcher uses non-random, purposive sampling techniques to choose suitable interviewees to participate. There are 10 students in higher education at The University of Manchester, The University of Bristol, The University of Warwick, the London School of Economics and Political Science (LSE), King's College London (KCL), the 5 most popular universities in the UK, invited into this research. They were preliminary filtered by pilot testing of their background, educational level, current learning programs, and their experience and engagement with AI using higher education. Participants were invited into this research according to the criteria: they are either currently learning or having completed their higher education at those universities, with at least 6 months of experiencing AI uses in higher education courses, referencing knowledge of those AI uses in the other two universities or more, and a good understanding of AI's functions and features in education. 15 students were invited with 12 of them participated and completed this research.

3.4. Data analysis

This research uses thematic coding to analyze the three clusters of data generated from the interviews. According to Saunders et al. (2012), thematic coding can help analyze qualitative data by segmenting, arranging, and grouping meaningful codes. Those codes are arranged into the sub-themes of each main theme (according to the research objectives). The meaningful indications and evaluations, arguments, and viewpoints are then generated when comparing the series of codes in each sub-theme with the patterns of the interviews (including body gestures, attitudes, feelings, expressions, etc.). The meaningful interactions, findings, and suggestions in those subthemes are then systematically analyzed and grouped into main themes to create the main findings in the research and answer the research questions (Crowther & Lancaster, 2012).

3.5. Ethical considerations

In this research, ethical considerations were considered important to ensure the quality, applicability, and values of the research results. For this acknowledgment, the researcher guaranteed informed consent, and publicized purposes, procedures, risks, and benefits of the research implementation. Firstly, all participants received a consent form in an email, with another separate file dictating the scope, significance, aims and objectives, expected results, process and outcomes, and potential applications of the research. Upon completing the consent form, the participants have expressed their willingness to complete the research to the end and agree with the aims, objectives, results, and further uses of the research. Moreover, the researchers also comply with the scientific conduct in research with respect, beneficence, and assurance of the integrity of the research results. Finally, the researcher also commits to ensuring the well-being, and mental and physical health of all participants during the research process.

3.6. Limitations of this research

This research has the first limitation of not integrating quantitative empirical data into the primary data collection. The validity and generalizability of this research will be limited when examining the potential drawbacks of AI integration into higher education nowadays. Only using qualitative interviews, this research may include social desirability bias, with the limited longitudinal scale of applicability (Donley & Grauerholz, 2013). Moreover, the research results were only aimed at investigating the current context and significance of AI integration into the higher educational level of UK universities, and findings may not be as effective as expected when applied to other academic levels. Finally, this research could not contextualize a solid model of AI integration for universities to exploit the benefits of AI to a desirable level.

4. FINDINGS AND DISCUSSIONS

4.1. Theme 1: AI's integration and biased algorithms

The first interesting finding retrieved from the interviewees in this research is that most of them (eight interviewees) stated that adopting AI may facilitate their communication and learning process; however, this may be due to the lack of experience, the pedagogical pressure, or the shortage of skills of the educators, AI-based activities in their courses in higher education was still not culturally attractive to them.

“so many times I felt isolated and did not fit with those AI activities in the courses” (Interviewee 3).

The inputs of data for AI machine learning in those courses did not include their idea contribution, and the faculty still has ultimate control over the courses. In other words, AI adoption created more pressure for learners, especially those who are non-native.

“I felt more pressure and stricter observation from the faculty instead” (interviewee 6).

“AI-based activities should be designed to be more friendly to use, and useful in learning, not for creating more difficulties and challenges for us, the non-native” (interviewee 4).

Moreover, AI adoption was not prepared with technical support for all learners. This means that native learners at this level, such as those graduating from UK universities, would be more adaptive and familiar with AI activities, while non-native learners cannot afford those skills and routines in such a short period for change.

“While we were still not familiarized with those activities, our native peers performed much better” (interviewee 2).

“We felt just like be discriminated and separated in those activities” (interviewee 9).

“Not all of us could complete those activities well. But the tutor did not understand our challenges” (interviewee 1).

4.2. Theme 2: AI in the decision making process

The second challenge of AI adoption into higher education in these universities is that it has been reported by interviews to hinder the flow of knowledge and data in the decision-making process of the courses. Before AI adoption, learners were encouraged to give ideas, knowledge, reviews, and feedback about the upcoming changes. *“That was the time when we could understand and participate in the coming changes with interests”* (interviewee 10).

“AI and its machine learning mechanism should not be completely applied, since it has limited our roles in making decisions” (interviewee 5).

AI adoption was also reported by participants to centralize the power and authority in the courses of the faculty and the professors, and the voices of learners, especially the non-native, were ignored. This was reported with interesting examples in the study of Al-Mughairi & Bhaskar (2024).

“Now we cannot imagine what will come next since the rise of AI adoption” (interviewee 8).

“The faculty has all benefits, and AI helps them to completely control us” (interviewee 10).

Most participants stated that AI-Generative decisions should be re-structured to be more inclusive and diverse to all learners, with a balanced role between the two sides. Only with systematic balance among the roles and contributions of all participants that AI-based activities can be welcomed by diverse communities of learners (Mohd Rahim et al, 2022; Luckin & Cukurova, 2019).

4.3. Theme 3: AI and the displacement of labors in the UK academic contexts

All interviewees understood that AI adoption would mean human displacements in the long run. However, so far, they have not recognized the benefits that AI-generative activities could provide them, especially to guarantee their benefits and learning outcomes in higher education.

“AI can be useful for us, but in the next two or three years, not now” (interviewee 4).

“We cannot replace the supportive role of professors for AI this way” (interviewee 3).

“We still need more time for this change” (interviewee 5).

In this research, to focus more on the ethical and pedagogical challenges for learners in higher education from the adoption of AI, all participants were learners from different backgrounds. From the synthesized view of all participants, they expressed their stronger needs of the professors and tutors, who would be more supportive to them in special cases, rather than the AI-generative applications, since those would be serving learners unequally. *“At least the university can give us, the learners and educators, more time to create our models of adaption”* (interviewee 6).

“The professors can perform more tasks than any Ai-generative applications” (interviewee 10).

“AI tools should be supporting our professors, not replacing them” (interviewee 1).

Thus, in this stage of AI adoption across the five universities researched, the majority of participants stated that AI adoption would result in human displacement, which would have a negative impact on their learning outcomes. This result is based on the nature and characteristics of the learning environment in higher education, especially for the requirements of extensive communication among the learners, teachers, and the learning communities (King & Boyatt, 2015).

5. CONCLUSIONS AND RECOMMENDATIONS

To conclude, this research successfully examined the ethical and pedagogical challenges of adopting AI across higher educational levels in UK universities. The first challenge of AI for the learners is that these new techs may generate and enhance biased algorithms, which would differentiate the non-native learners from the native ones in the AI-generative activities of the courses. Secondly, findings indicated that AI adoption across UK universities has still not achieved an equal and balanced status, with lesser roles of professors and learners. Finally, this research also found that human displacements from AI adoption among universities in the UK were also not systematically and professionally managed well.

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