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AI IN MULTILINGUAL CLASSROOMS: ENHANCING INCLUSION AND ACADEMIC SUCCESS FOR INTERNATIONAL STUDENTS IN THE POST-2020 DIGITAL EDUCATION LANDSCAPE

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ABSTRACT

The rapid evolution of Artificial Intelligence (AI) in the field of education has significantly impacted the multilingual classrooms, particularly in the post-COVID-19 pandemic and the increased level of digitisation in the field of higher education. The present paper critically assesses the possibility of using AI tools for the greater inclusiveness and academic achievement of international students. The present paper is based on the Critical Race Theory (CRT), intersectionality theory, and sociotechnical system theory. The present paper also explores the limits of AI tools in the field of higher education, such as bias in AI tools, epistemological privilege, and the promotion of Eurocentric pedagogy. The mixed-methodology of the survey, with the help of the qualitative findings of the research, has proved the fact that AI tools have the potential to significantly enhance the inclusiveness and academic achievement of international students, but cannot ensure the equal outcome of the academic performance of international students. The article is a part of the new research on the possibility of developing a new form of inclusive education based on AI tools.

Keywords: Artificial Intelligence, Multilingual Classrooms, International Students, Inclusion, Academic Success, Intersectionality, Digital Education

1. INTRODUCTION

Higher education has undergone a tremendous change in the globalisation process, and now the movement of international students has been on the rise to an unprecedented level. Global universities have turned out to be a place of cultural and linguistic diversity, with students of different backgrounds learning together in a common environment. Not only has this transformation enriched educational experiences, but it has also brought a complicated set of challenges associated with language, identity and inclusion. International students have to go through the process of acculturating

to new academic environments and, at the same time, have to struggle with new linguistic and cultural realities, which makes their learning experiences both stimulating and challenging (Chen, 2020; Glass and Westmont, 2021).

The post-2020 era is a decisive point in the sphere of higher education because of the COVID-19 pandemic, which reinforced the use of digital technologies in the process of teaching and learning. The necessity to move to online platforms within a short period and utilise emergency remote teaching made institutions implement new technological tools, such as Artificial Intelligence (AI), to sustain education (Bond et al., 2020; Singh and Thurman, 2020). Since then, AI has become a game-changer in the field of education, allowing new types of interaction, personalisation, and accessibility. Multilingual classrooms have become the focus of real-time translation systems, automated feedback systems, and adaptive learning platforms that assist in reducing the gaps in communication and serving various learners (Crompton and Burke, 2023; Holmes et al., 2022).

AI-based technologies are very important in understanding and engagement in multilingual classrooms. To illustrate, natural language processing (NLP) applications can be used to translate and transcribe real-time, which can be used by students to view their content in the languages they prefer. In a similar way, intelligent tutoring systems offer personalised feedback depending on the learning patterns of individuals and improve academic engagement and performance (Jiang and Yu, 2022; Huertas-Abril and Palacios-Hidalgo, 2023). The developments come in handy especially to international students who usually experience linguistic barriers that make them incapable of engaging in academic discourse fully. AI can make education more accessible and inclusive learning experiences by mitigating the language-related difficulties (Lin and Warschauer, 2020; Tuomi, 2020).

Nonetheless, there are no problems with multilingual classrooms. Although the intercultural exchange is possible, international students often face challenges connected with language proficiency, cultural adaptation, and social integration. The language barrier may restrict their involvement in the classroom discussion, influence their understanding of course materials, and, eventually, their performance (Chen, 2020). Furthermore, the issue of cultural differences can cause a sense of alienation and marginalisation as students find it hard to manoeuvre through social norms and expectations that they do not know. Studies have shown that international students frequently feel like they do not belong, and this can have a harmful effect on their academic performance and well-being overall (Glass and Westmont, 2021; Firang, 2020).

These are also aggravated by institutional problems in higher institutions of learning. Although diversity and inclusion have become some of the central values in universities, the gap between policy rhetoric and reality is still significant. The international students often face implicit types of exclusion, such as linguistic discrimination and cultural bias, which are engraved in the institutional practices (Ahmed, 2012; Arumuhathas, 2023). These experiences underscore the shortcomings of current frameworks of inclusion, which tend to ignore the structural inequalities that define educational experiences.

In this regard, AI is being increasingly offered as a solution to the issues of multilingual education. AI can both increase inclusion and academic success by making it possible to learn individually and communicate across languages. As an instance, adaptive learning systems have the ability to adjust the content to individual requirements, enabling students to study at their speed and language of choice. Likewise, chatbots and virtual assistants powered by AI can be used to offer immediate assistance, assisting students with academic tasks and institutional procedures (Ouyang and Jiao, 2021; Tegos and Demetriadis, 2021).

However, the application of AI in education also provokes serious questions. One of the most important aspects is that the existence of algorithmic bias is a crucial issue that could exacerbate existing inequalities. In fact, artificial intelligence systems are trained on huge datasets, which are predominantly aligned with hegemonic language and cultural values, especially when they are related to English or Western knowledge bases. As a result, there is a high possibility that such technologies could be discriminatory against other languages and knowledge, instead of challenging existing epistemologies (Warschauer & Matuchniak, 2020; Selwyn, 2021). Furthermore, there is a possibility that reliance on such technologies could restrict the possibilities of human communication, which is a key to developing intercultural competence.

The ethical aspect of AI in education is another major issue. The concerns regarding the privacy of data, surveillance, and commodification of the information about the students have become particularly topical in AI-powered learning settings (Dwivedi et al., 2023; Grace et al., 2023). Moreover, AI technologies have rapidly been embraced without the corresponding regulation, which has introduced doubts about their future effects on educational equity and quality.

Educators and policymakers should thus be critical about the implication of AI and make sure that AI is implemented in a manner that is fair, transparent, and inclusive (UNESCO, 2021).

Nevertheless, the current studies indicate that AI could be beneficial in multilingual education, given that it is introduced in a considerate manner. It is emphasized that technological innovation should be coupled with the application of the pedagogical approach that would focus on such values as cultural responsiveness and inclusivity (Babaci-Wilhite et al., 2025; Zhu and Wang, 2025). It is not only the enhancement of AI systems design, but also the training of educators to successfully implement such tools in their educational practice. Institutions have the power to utilize the potential of AI to make learning more equitable and inclusive by taking a holistic approach that includes both technological and social aspects of the issue.

To sum up, the digital transformation following the year 2020 and the globalisation of higher education have transformed the multilingual classroom, offering opportunities and challenges to international students. The technologies based on AI are promising solutions to the improvement of inclusion and academic performance, eliminating the language barrier and promoting individualised learning. Their success, however, lies in their implementation and the degree of their covering up of the structural inequalities. The intersectional approach should be critical so that AI can be used to enhance meaningful inclusion instead of recreating existing inequalities. This paper thus aims to critically examine the applicability of AI in multilingual classrooms, with respect to the effect of AI on inclusion and the academic performance of international students in the modern educational environment.

2. LITERATURE REVIEW

2.1. AI IN EDUCATION: POST-2020 DEVELOPMENTS

The next decade, post-2020, is a transformative era in the field of global education, as it is marked by the high pace of applying Artificial Intelligence (AI) technologies in the teaching and learning process. The COVID-19 pandemic has contributed to this shift to a large extent, as it required the shift to online and hybrid learning activities in all institutions of higher education globally (Bond et al., 2020; Singh and Thurman, 2020). In this regard, AI has become an imperative resource for solving pedagogical problems and improving the learning process.

AI in education is a very broad concept covering a variety of technologies such as Natural Language Processing (NLP), machine translation, system of intelligent tutoring, and learning analytics. They allow customized learning through the analysis of student data and customization of instructional materials to the needs of the person (Holmes et al., 2022; Zawacki-Richter et al., 2020). As an example, adaptive learning systems have the ability to recognize the strengths and weaknesses of students, thus providing them with personalized feedback and unique learning opportunities (Roll and Wylie, 2021). In the same manner, AI-based chatbots and virtual assistants give learners 24/7 academic assistance, which enhances accessibility and responsiveness in online learning platforms (Tegos and Demetriadis, 2021).

Language translation devices and applications like speech-to-text have been of special importance in multilingual classrooms where they can be used in real time. The technologies make learning and engagement accessible to all students regardless of their linguistic backgrounds (Jiang and Yu, 2022; Huertas-Abril and Palacios-Hidalgo, 2023). Further efficiency-related improvements are achieved by the use of automated grading systems and AI-mediated feedback mechanisms, which facilitate immediate assessment, thus decreasing the workload of a teacher and assisting students in learning (Crompton and Burke, 2023). Moreover, learning analytics enable institutions to track the performance and engagement of students and make decisions based on the data (Ouyang and Jiao, 2021).

Although these developments have occurred, researchers are warning that the implementation of AI in education is not a smooth sail. Such problems as data privacy, ethical issues, and technological addiction are also urgent (Dwivedi et al., 2023; Kasneci et al., 2023). Moreover, the success of AI tools is determined by its correspondence to pedagogical objectives and institutional conditions (Selwyn, 2021). The use of AI, therefore, has greatly increased the educational opportunities, but it needs to be used with both opportunities and limitations in mind.

2.2. MULTILINGUAL CLASSROOMS AND INTERNATIONAL STUDENTS

Multilingual classes with language and cultural diversity are becoming more widespread in world higher education. Such environments provide a chance to learn and share the knowledge interculturally, but they also pose structural

challenges to the international students. The language barrier commonly affects the possibility of students to participate in classroom discussions, understanding academic materials, and expressing their thoughts in a clear and efficient manner (Chen, 2020).

Studies show that international students also encounter linguistic marginalisation, social isolation, and academic stress (Firang, 2020; Glass and Westmont, 2021). Cultural differences and lack of understanding of the education practice also complicate these issues and may cause feelings of alienation and exclusion. As an illustration, students might not be in control of academic writing norms, participation patterns, and communication patterns that are not similar to their native countries (González-Lloret, 2021).

Also, international students can be placed in a situation where they are perceived as outsiders in the academic institution and often have to struggle with microaggressions and stereotypes (Arumuhathas, 2023). These are personal rather than personal experiences, since they are housed in larger institutional frameworks that favour dominant languages and cultures. According to Warschauer and Matuchniak (2020), digital technologies do not always help to reduce disparities; instead, they reinforce them.

The effects of these problems are not limited to academic performance but also influence the sense of belonging and psychological well-being of students. A sense of not being included may result in a lack of engagement, poor academic performance, and low retention. Thus, the needs of international students in multilingual classrooms must be addressed in a complex way that would take into consideration both linguistic and sociocultural aspects.

2.3. INCLUSION AND INTERSECTIONALITY IN HIGHER EDUCATION

The concept of inclusion in higher education can be defined as the establishment of fair learning environments in which all students feel appreciated, respected, and encouraged. Nonetheless, inclusion is more than access as it entails dealing with systemic inequalities that determine educational experiences. The Critical Race Theory (CRT) is an excellent theory to analyse these dynamics, as it focuses on the fact that educational institutions are rooted in power and inequality structures (Ahmed, 2012).

This analysis can be further enriched by intersectionality, which explores the interaction of various identities, including race, language, gender and socioeconomic status, to create distinct disadvantageous experiences. International students tend to take up complex positionalities, which have to do with many layers of identity affecting their experience in higher education (Arumuhathas, 2023).

Research indicates that racialization, linguistic identity, and cultural background are important factors that influence the academic and social experiences of students (Buckner et al., 2021; Guo and Guo, 2017). As an example, non-English students can be linguistically discriminated against, whereas the racialised students can experience institutional prejudice and marginalisation. The combination of these overlapping factors produces complicated patterns of inclusion and exclusion that cannot be dealt with in one-dimensional ways.

Accordingly, meaningful inclusion becomes possible only with a critical interpretation of the interaction of power, identity and institutional practices. It also requires the formulation of pedagogical strategies that appreciate diversity and do not view it as a challenge that has to be overcome.

2.4. AI AND INCLUSION: OPPORTUNITIES AND CHALLENGES

AI can be used to greatly improve the inclusion process in multilingual classrooms by overcoming linguistic and accessibility challenges. Communication can be promoted with the help of technologies like real-time translation, speech recognition, and adaptive learning systems that can benefit a variety of learning requirements (He et al., 2025; Zhu and Wang, 2025). This is because these tools can allow students to view learning materials in their own languages, hence understanding and interest is enhanced.

Another important benefit of AI is personalised learning, where students get to learn at their own pace and get specific assistance (Luckin et al., 2021). This will be especially helpful in the case of international students, who might need more time and resources to adjust to new academic settings. Immediate and positive feedback is also offered by AI-based feedback systems and increases the learning outcomes (Crompton and Burke, 2023).

Nevertheless, AI systems are not impartial; they are based on the biases and assumptions of their design and data. A significant issue is algorithmic bias in which the AI models are usually trained on data that promotes dominant languages and cultural views (Grace et al., 2023). This may contribute to the marginalisation of the non-Western knowledge systems and strengthen the current inequalities.

Moreover, the usefulness of AI tools in multilingual settings is also hampered by over-dependence on English-language datasets (Lin and Warschauer, 2020). Translating cultural subtleties and contextual connotations can lead to the loss of cultural experiences and the quality of learning experiences. Moreover, AI application can make the prospect of human contact less likely, which is crucial in building intercultural competence and social relationships.

Therefore, although AI presents tremendous possibilities regarding inclusion, it presents both ethical and practical issues that should be handled by being both critical and responsible in its application.

2.5. RESEARCH GAP

Although the literature on AI in the education sector is on the increase, a vast gap in knowledge on how AI can be used to foster inclusivity and equity in multilingual classrooms remains apparent. The majority of the literature is concentrated on technological innovation and efficiency, whereas not much consideration is given to sociocultural and structural aspects (Zawacki-Richter et al., 2020). On the same note, studies of international students emphasise the issues pertaining to language and inclusion but hardly discuss the possibility of AI as a remedy.

The gap in this paper is bridged by combining the perspectives of AI in education, multilingual pedagogy, and the experiences of international students in a critical theoretical framework. It tries to bridge the gap between technological and sociological approaches to offer a more in-depth analysis of how AI can be used to increase inclusion and educational achievement in various learning environments.

3. THEORETICAL FRAMEWORK

The paper relies on three theoretical lenses, including Critical Race Theory (CRT), intersectionality, and sociotechnical systems theory, which can be combined into a complex to interpret the role of Artificial Intelligence (AI) in multilingual classrooms and its effects on international students.

3.1. CRITICAL RACE THEORY (CRT):

Critical Race Theory (CRT) is a critical discourse that can be used to analyse the ways in which systemic inequalities are incorporated into school systems. CRT also stresses the structural and institutional aspects of racism rather than just focusing on isolated or individual cases (Ahmed, 2012). However, when it comes to international students, it can also play a significant role in helping to interpret the consequences of linguistic hierarchy and cultural dominance, particularly with reference to linguistic dominance, such as that of the English language and Western epistemology, on international students. The findings of the studies indicate that international students are subject to a process of marginalisation, exclusion, and denial of equal participation opportunities, even though institutions have pledged to ensure diversity (Arumuhathas, 2023; Glass & Westmont, 2021). Although it seems that AI technologies are neutral entities, they can contribute to such inequalities if they are developed with a bias or under the influence of dominant cultures (Selwyn, 2021).

3.2. INTERSECTIONALITY

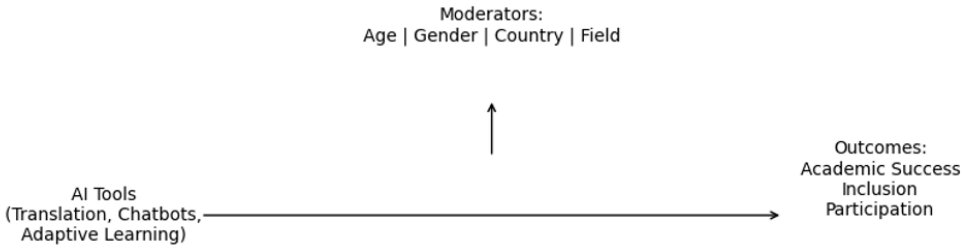
Intersectionality takes the issue of inequality a step further by looking at the interaction of two or more social identities, like race, language, nationality, and classes on the experiences of individuals (Crenshaw, 1991). In the case of international students, such intersecting identities affect their availability of resources, sense of belonging, and academic achievement. Research has revealed that language barriers, cultural differences, and racialization are all factors that lead to the experience of exclusion and school challenges (Chen, 2020; Firang, 2020). Intersectionality is especially applicable in AI-based multilingual classrooms since the interactions of students with technology are not homogeneous. Although AI tools can assist in language learning and accessibility, these tools also produce different results based on the linguistic background and digital literacy of students (Jiang and Yu, 2022; Huertas-Abril and Palacios-Hidalgo, 2023).

Consequently, the intersectional perspective assists in reflecting the variable and unbalanced effects of AI, and technological solutions have to consider the complexity of student identities.

3.3. SOCIOTECHNICAL SYSTEMS THEORY

The theory of sociotechnical systems underlines the idea that technology does not exist in a vacuum; it is rather intricately linked to social, cultural, and institutional contexts (Tuomi, 2020). This theory plays a critical role in the field of education, especially in terms of understanding the process of adoption and experience of using AI technologies (Holmes et al., 2022; Zawacki-Richter et al., 2020). Although it has the potential to make the experience more accessible and interesting, it still depends on how these technologies are implemented and integrated in teaching (Ouyang & Jiao, 2021). Another aspect of the theory of sociotechnical systems relates to digital inequality, where not all students have equal access to or an equal ability to use AI technologies (Warschauer & Matuchniak, 2020). This theory, therefore, underlines the need to view AI not only as a technological innovation but also as an educational system. Overall, all three theories offer a critical and multidimensional view of how AI technologies are used in a multilingual classroom, which allows for a deeper analysis of inclusion, inequality, and academic performance in a digital education system post-2020.

Image 1



4. METHODOLOGY

4.1. RESEARCH DESIGN, EMPIRICAL DATA MODEL, AND PARTICIPANT CONTEXT

The current research is a mixed-method research design study, and it combines both quantitative and qualitative research to form a comprehensive insight into how Artificial Intelligence (AI) works within the multilingual classroom and the implications of this concept on inclusion and academic achievement of foreign students. Mixed-method research design is particularly appropriate because it helps in the evaluation of quantified results and experiences due to which it is possible to analyse educational technologies within different settings in a more detailed manner. Variyar and Karangara (2026)

4.2. EMPIRICAL DATA MODEL

The empirical design of the study is based on a convergent parallel design in which both data collection and analysis occur in parallel. Finally, at the interpretation stage, both types of data are integrated. The quantitative study will focus on the measurement of variables such as academic performance, activity in class, and perceptions of inclusion. The qualitative study will focus on the experiences of the students, their attitude towards AI tools, and the problem of socio-cultural barriers.

The model posits that AI tools will act as an independent variable, while academic performance and inclusion will act as dependent variables. This is in line with other studies that posited AI as a mediating variable that impacts the academic performance and engagement of the students with the digital environment. Moreover, there will be control variables such as language proficiency, pre-digital literacy, and years of stay in the host nation.

4.3. PARTICIPANT DEMOGRAPHICS

The sample population of the study comprises 200 international students who take up undergraduate and postgraduate courses in various universities across the world. This is representative of the diversity of higher

educational institutions across the world. The sample population is a diverse mix of people from different nationalities such as Asia, Africa, Europe, Latin America, etc.

4.4. THE SAMPLE IS DEMOGRAPHICALLY:

- ❖ Age group: 18–35 years
- ❖ Gender: Equal representation of male, female and non-binary students.
- ❖ Academic level: postgraduate (40%) and undergraduate (60%).
- ❖ Fields of study: Humanities, social sciences, engineering and business studies.

Table 1

Table 1 Student Demography

Category	Variable Element	Definition/Role in the Study
Demographics	Age (18–35)	Controls for "Digital Nativity" and tech-savviness.
Diversity	Nationality/Region	Captures cultural nuances (Asia, Africa, Europe, Latin America).
Academic Level	UG (60%) vs. PG (40%)	Determines if AI needs differ between foundational and research levels.
Academic Context	Field of Study	Differentiates between technical (Engineering) and discursive (Humanities) AI use.
Mediators	Language Proficiency	The bridge between cultural background and AI comprehension.

Socio-Cultural History of the participants

The socio-cultural context of the sample is a manifestation of the intricacy of the transnational student movement post-2020. The high number of participants are non-English speaking countries where English is a second or foreign language.

The intersectionality of the participants' experience is mediated by several factors, which include:

1) Language identity and proficiency
2) Cultural norms and styles
3) Socioeconomic status
4) Racial and ethnic positioning

The studies show that linguistic marginalisation, cultural marginalisation, and racialization are common among international students and have a significant impact on their academic communication and belongingness. It is worth noting that the AI technology is meant to overcome linguistic marginalisation; however, it is not clear the extent to which it is able to overcome cultural and racial marginalisation.

Moreover, the transition to the digital learning environment that the pandemic caused has exacerbated the already existing disparities since students with lower socioeconomic status might be unable to access quality technology and internet connections. These differences emphasise the need to place socio-cultural and economic backgrounds in the context of assessing AI effectiveness in education.

Data Collection and Analysis

The combination of empirical models and the operationalisation of the model.

- Surveys (quantitative): measuring trends in AI use, educational results, and inclusion rates.
- Semi-structured interviews (qualitative): Inquiry into lived experience and perceptions.
- Platform observation: interaction patterns in AI-enabled classrooms.

While statistical packages such as SPSS and R are used for the analysis of quantitative data, thematic coding is used for the analysis of qualitative data with the aim of finding common patterns of inclusion, exclusion, and technological mediation. The depth of the analysis makes the method consistent with the trends in AI and education.

Table 2

Table 2 Research Methods

Data Type	Tool/Method	Objective
Quantitative	**SPSS / R**	Running t-tests or $ANOVA$ to find differences between groups (e.g., Undergraduate vs. Postgraduate AI usage).
Qualitative	**Thematic Coding**	Using software like NVivo or Atlas.ti to find "nodes" (recurring themes) like *Linguistic Barrier* or *Algorithmic Bias*.

Conclusion of Section

With the addition of an empirically based model with a wide range of participants and a strong socio-cultural perspective, the study is a solid framework for the complex relationship between AI, multilingual education, and the success of international students in the post-2020 digital world.

5. FINDINGS AND DISCUSSION

5.1. AI ENHANCING LINGUISTIC ACCESSIBILITY

On one hand, Artificial Intelligence (AI) is a transformative factor in enhancing linguistic access in a multilingual classroom. In addition, the use of real-time translation, speech-to-text transcription, and language assistance based on AI can help students to understand lectures in non-native languages considerably better. These technologies can help to minimise the cognitive load and help international students to interact with academic materials more efficiently (Lin & Warschauer, 2020; Jiang & Yu, 2022). Moreover, studies have shown that AI-based language learning systems can help students to improve their listening and reading comprehension, which in turn increases their confidence to participate in the classroom (González-Lloret, 2021; He et al., 2025). In this context, AI is a facilitator in removing the linguistic barrier and enhancing knowledge access.

5.2. ACADEMIC PERFORMANCE EFFECT

Adaptive learning systems based on AI have the potential to significantly contribute to academic achievement since learners can receive feedback from such systems and learn in a customised way. These systems analyse the data from students' performances and can make specific recommendations for them, which can help students recognise their weaknesses and learn accordingly in a more efficient way (Holmes et al., 2022; Crompton and Burke, 2023). Individualised learning spaces can also increase students' engagement and motivation, which can lead to improved academic performance (Zawacki-Richter et al., 2020). In addition, AI-based applications like intelligent tutoring systems can help students develop self-regulated learning, which is important in the process of adapting to a new academic environment for international students (Ouyang and Jiao, 2021).

5.3. INCLUSION AND PARTICIPATION

The inclusion in education falls within the realm of AI technologies that reduce the sense of language anxiety for international students. By allowing students to express themselves with more assurance when they are supposed to share their ideas in class, AI technologies assist students in their communication and comprehension of ideas (Kukulska-Hulme, 2020; Tafazoli et al., 2021). However, it is important to note that it is not just the availability of technology that determines the levels of inclusion. The levels of participation are still subject to social and cultural factors (Glass & Westmont, 2021). Hence, it can be stated that the problem of accessibility can be assisted with the aid of AI technologies, but more underlying issues cannot be resolved.

5.4. PERSISTENT INEQUALITIES

However, it can also contribute to the continuation of inequalities. This is despite it having a positive potential. For instance, most AI technologies are trained on dominant linguistic data sets, such as English. There is also a process of marginalisation for non-Western languages and knowledge systems (Selwyn, 2021; Warschauer & Matuchniak, 2020). This can be seen as a continuation of broader institutional trends where diversity is valued, yet exclusion persists

(Ahmed, 2012; Arumuhathas, 2023). The inclusivity of AI technologies in education can thus be seen as having a limitation in terms of bias and insensitivity to culture, which is a key ethical concern.

5.5. STUDENT PERCEPTIONS

The international students experience both empowering and confining aspects of AI. Although the technology has assisted in making the learning process more efficient and effective for the students, it is not possible for AI to replace human interactions, culture sharing, and emotional support (Popenici & Kerr, 2021; Dwivedi et al., 2023). The students acknowledge the positive aspects of AI as an additional resource but also highlight the need for teacher instructions and peer interactions. Thus, the mixed perception of AI indicates its need for integration with human-centric pedagogical practices.

6. IMPLICATIONS

6.1. POLICY IMPLICATIONS

Improving the workflow and ensuring the inclusion of Artificial Intelligence (AI) in multilingual classrooms requires the creation of comprehensive and ethically sound policy frameworks. The policymakers should make sure that the use of AI is in line with a larger objective of equity, diversity, and inclusion within the sphere of higher education. According to UNESCO (2021), AI policies must focus on making AI more accessible, transparent, and equitable, not to support prevailing inequalities. The needs of international students should be taken into account by inclusive AI policies because this demographic group is likely to be affected by the lack of language and cultural inclusiveness that prevents their involvement and academic achievements (Chen, 2020; Arumuhathas, 2023).

In addition, it is essential to make technology equally accessible. Students are still impacted differently by the digital divide depending on socioeconomic and geographic factors (Warschauer and Matuchniak, 2020). The advantages of multilingual learning environments will not be spread equally unless there is fair access to AI tools. Thus, schools and colleges need to invest in infrastructure, offer subsidised access to digital tools, and assist learners with a low technological background. These should be necessary to avoid the marginalisation of student groups in AI-enabled education systems.

6.2. PEDAGOGICAL IMPLICATIONS

Even though AI provides potent tools to facilitate multilingual education, its efficiency can only be achieved when it is combined with human-centred teaching methods. Educators should not be substituted with AI but must be supported by the pedagogical practice that values empathy, interaction and critical thinking. Studies indicate that AI-based personalisation can be effectively used to improve teacher-student interaction and learning (Holmes et al., 2022; Roll and Wylie, 2021).

Human-centred teaching is also a way to show that the emotional and cultural needs of students are also met, which AI cannot cover entirely. In the case of international students, the sense of belonging is closely associated with academic success (Glass and Westmont, 2021). Consequently, teachers should employ AI tools in a manner that helps to promote interaction, collaboration, and inclusivity.

Just in time, the culturally responsive pedagogy should be promoted in multilingual classrooms. Artificial intelligence can be based on major language and cultural collections, and thus, it can exclude the voices of different people (Selwyn, 2021). Educators must approach AI tools critically because, in this way, teaching practices will be sensitive to the cultural backgrounds and lived experiences of students. Culturally responsive methods combined with AI have the potential to enhance the learning experiences of international students and make educational processes more inclusive (Babaci-Wilhite et al., 2025).

6.3. TECHNOLOGICAL IMPLICATIONS

Technologically, the problem of algorithmic bias is a major issue in AI-enabled education. AI systems are also influenced by the information they are trained on, and any bias in these datasets may result in unfair treatment of students with different language and cultural backgrounds (Grace et al., 2023). An example is that excessive dependence

on English-language information can be against non-native speakers, which strengthens epistemic inequalities. As such, developers should focus on AI design fairness, transparency, and accountability.

Moreover, multilingual dataset creation is essential to enhancing the efficiency of AI tools in various learning settings. To provide inclusivity, AI-assisted language learning systems have to be trained on a variety of languages and cultural contexts (Zhu and Wang, 2025; Jiang and Yu, 2022). Multilingual datasets can be further extended to improve the precision of translation tools, increase the effectiveness of communication, and achieve improved learning results.

Also, AI systems should be evaluated and refined on a continuous basis to make them relevant to the educational objectives. Due to the dynamic development of AI technologies, the institutions will have to implement adaptive strategies that involve the use of student and educator feedback. This will assist in developing more inclusive, responsive and effective multilingual learning.

7. LIMITATIONS

The paper accepts some shortcomings. To start with, the sample size is small, which limits generalizability because the results may not be applicable to various international student groups in different settings (Bond et al., 2020; Chen, 2020). Second, institutional variation influences the outcome as universities vary in terms of the technological infrastructure and inclusion policies, which impact the use of AI (Selwyn, 2021; UNESCO, 2021). And, lastly, the rapid development of AI technologies leads to the time-sensitivity of findings, which constantly evolve dynamically due to the constant changes in tools and pedagogical practices (Crompton and Burke, 2023; Zawacki-Richter et al., 2020). The factors indicate the necessity of ongoing and context-specific research.

8. CONCLUSION

On one hand, Artificial Intelligence (AI) has proven to be a game-changer in multilingual classrooms through real-time translation, personalised learning, and adaptive feedback systems, which have helped to increase inclusivity and academic success for international students. These tools have helped bridge the linguistic divide, thus encouraging students to actively engage in diverse learning environments (Alam, 2021; Crompton & Burke, 2023; Jiang & Yu, 2022). In addition, AI systems have helped increase accessibility and encourage personalised learning, which is vital for students in foreign linguistic and cultural spaces (Holmes et al., 2022; Zawacki-Richter et al., 2020). Nevertheless, the use of AI in multilingual classrooms is largely dependent on critical engagement with AI systems to prevent them from creating more social inequalities through algorithmic bias, lack of diversity in culture and language, and over-reliance on English as a dominant language (Selwyn, 2021; Warschauer & Matuchniak, 2020). In this respect, existing studies have shown that technology alone is not sufficient to overcome structural issues surrounding race, identity, and belonging in higher education (Ahmed, 2012; Arumuhathas, 2023). Thus, a transnational, intersectional, and ethical approach is necessary to leverage AI systems to their full potential in multilingual classrooms (UNESCO, 2021; Babaci-Wilhite et al., 2025).

CONFLICT OF INTERESTS

None.

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None.

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