Culturally Responsive AI in ELT: Bridging Socio-Cultural Divides in AI-Driven Language Learning Environments

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Abstract

This study examines socio-cultural dynamics in AI-driven English Language Teaching (ELT) across non-Western contexts, guided by socio-cultural theory (Vygotsky, 1978) and critical pedagogy (Freire, 1970). Drawing on interviews and focus group discussions with educators and learners from non-Western regions, it reveals how AI tools, often designed around Western-centric norms, clash with local pedagogical values, marginalize multilingual practices, and exacerbate socio-economic inequities. Socio-cultural theory frames AI as a cultural artifact mediating learning through social interaction, yet participants highlight mismatches between AI's individualistic design and collectivist classroom traditions. Critical pedagogy further illuminates power imbalances, as algorithmic bias in natural language processing privileges standardized English, erasing regional dialects and cultural narratives. Stakeholders advocate for participatory design practices, urging co-creation of culturally responsive tools with local communities to address these tensions. Hybrid models blending AI with human support and offline functionality emerge as practical solutions for resource-constrained settings. The findings call for policies prioritizing infrastructure equity, cultural localization, and critical digital literacies to empower marginalized learners. By centering stakeholder voices, this study challenges techno-deterministic narratives, positioning AI as a socio-technical process requiring cultural humility and ethical engagement.

Keywords: socio-cultural theory, critical pedagogy, AI in ELT, cultural responsiveness, hybrid model

1. Introduction

Considered transformative, AI-based tools, such as adaptive learning platforms, chatbots, and automated writing evaluators, aim to provide more individualized learning experiences in English language teaching (Holmes et al., 2023). However, below this technical optimism is a contradiction: AI-driven ELT tends to consider language learning a universal, context-free concept, thus neglecting the socio-cultural reality of learners and teachers.

Although these technologies profess to democratize education, their very epistemology, design, and implementation often work from a Western-centric epistemology that tends to privilege standardized varieties of English and pedagogical standards which may even be at odds with local educational practices (Matsuda, 2020; Zhao et al., 2022). Such malalignment leads to urgent questions concerning equity, cultural relevancy, and agency in AI-mediated education.

According to the socio-cultural theory, learning is mediated by cultural tools and social interaction (Vygotsky, 1978). AI systems tend to treat language learning as a neutral task that can be accomplished through algorithmic means. For instance, natural language processing (NLP) models used in grammar checkers and essay scorers are biased toward Inner Circle English dialects, which affects World Englishes and multilingual communities that engage in translanguaging (Bender et al., 2021). The assumption that students in these regions will interact with AI systems as independent individuals overlooks the fact that, in societies like those of sub-Saharan Africa and Southeast Asia, learning is often a collective process, with teachers occupying an authoritative role (Warschauer et al., 2022). As a result, the students would be alienated from the learning process because their needs would not be met.

Most of the studies on AI in EFL focus on the technological aspect, such as the enhancement of students' performance or engagement (De Freitas et al., 2020). Most studies do not focus on the lived experiences of teachers and students from non-Western countries, especially from marginalised communities in terms of socio-economic status or cultural background (Selwyn, 2021). The latter is often the case because most of the digital technology tools that are designed and developed by tech corporations normally overlook and exclude people outside their target market. According to Freire (1970), education that is not based on the lived experiences of people ceases to be education but rather cultural invasion.

By emphasizing the perspectives of teachers and students in multilingual, non-Western contexts, this study tackles these issues. The study aims to challenge the "one-size-fits-all" narrative of AI in education by emphasizing qualitative insights from non-Western regions (Williamson, 2023). In addition to investigating avenues for participatory design that validate learners' identities and communicative practices, it critically analyzes how socioeconomic disparities, linguistic hierarchies, and cultural attitudes

toward technology mediate the impact of AI (Gutiérrez, 2020). This study addresses the following research questions:

1. *How do socio-cultural factors shape the integration of AI in ELT?*
2. *What strategies can educators and learners propose to design AI tools that respect cultural diversity and promote equity?*

The significance of this work lies in its dual contribution to theory and practice. By examining how AI influences power dynamics in language learning, it theoretically strengthens socio-cultural and critical pedagogy frameworks (Shumar & Baker, 2023). Likewise, it provides food for thought for developers and educators about how they can usefully and ethically design inclusive tools that align with the values of their local pedagogy. In terms of policies, there is an effort to equitably deploy AI in under-resourced contexts, while ensuring that the promises of technology do not exacerbate existing inequities (UNESCO, 2022). This study reframes AI in ELT as a socio-technical activity that calls for ethical participation and cultural humility, as opposed to a decontextualized response, by privileging the narratives of stakeholders over technical specifications. It suggests for the field to stop prioritizing efficient paradigms of pedagogy, and instead adopt pedagogies that value multilingualism, foster critical digital literacy, and give voice to marginalized communities to influence how language education is developed in the future.

2. Literature Review

The incorporation of Artificial Intelligence (AI) in English Language Teaching (ELT) is perceived as a technological and pedagogical revolution (Holmes et al., 2023). Advocates posit that AI tools, such as adaptive learning platforms, chatbots, and automated writing evaluators, can provide better personalized learning assistance in countries with teacher shortages and high student numbers (Zhao et al., 2022). However, idealism often fails to consider the socio/cultural aspect of language learning and further reduces education to a transaction between machines and humans. As Crawford (2021, p. 17) cautions, “the neutrality” of AI is a fallacy because the cultural assumptions integrated into the development of AI systems shape the ways in which learners use language and technology. The future of AI technology, and its role in ELT, is a threshold that depends on what it can do and what society is willing to accept.

A central concern in the literature is the dominance of Western epistemologies in AI, primarily in the design of AI tools. For example, NLP models will be trained on corpora with a bias towards Inner Circle English varieties such as British English or American English and unintentionally present a hierarchy of those varieties over speakers of World Englishes or local dialects and communities (Matsuda, 2020). Moreover, studies show how computerized grammar checks and essay marking systematically penalize variation in standard English, pathologizing multilingual learners' translanguaging and code-switching practices on a daily basis (Bender et al., 2021). This type of algorithmic bias encourages what Freire (1970) described as the "banking model" of education, where knowledge is deposited in passive learning and cultural dialogue is viewed as more or less irrelevant. It raises ethical questions about which voices are prioritized in AI-mediated pedagogy (whose other voices are being erased).

Socio-cultural theory (Vygotsky, 1978) provides a framework and refers to sociocultural tools and interactions in relation to learning. AI is not positioned in absence of social context in socio-cultural theory but is a cultural tool inclusive of cultures, and by extension, influenced by the context it emerges from. For example, East Asian classroom educational norms express collectivist learning practices that might be at odds with the orientation of AI to learning as individualized, while linguistic hierarchies of postcolonial South Asia might, through their emphasis on standard varieties of English encoded into AI tools (Warschauer et al., 2022), enhance some tensions in that context. By centering the interactions to technical, culture and social practice, socio-cultural theory pushes researchers to consider how the affordances the AI tools provide are consistent or inconsistent with situated pedagogical ambitions.

The assumption that AI adoption is inherently a good or clearly beneficial move is equally problematic. Critical pedagogy (Freire, 1970) also puts these assumptions into relief and it is fundamentally about power relations in education. Freire is against systems that treat learners as passive beings who merely take knowledge in through a passive practice of unquestioningly taking on knowledge. Ultimately, Freire believes education should enable people, especially marginalized communities, to critically interrogate and, then, act to replace oppressive systems. In the case of AI in English language teaching (ELT), critical pedagogy reveals how algorithmic systems simply reproduce systemic inequalities (e.g., privileging learners in technological privilege, or ignoring the stories and voices of learners whose cultures have been shaped by, but not defined by or similar to, non-Western cultures, etc.), rather than

facilitate more inclusive spaces or environments. The Moroccan educators' dissatisfaction with chatbots and the lack of recognition of terms used specifically in Darija or Amazigh reflects Freirean concerns about education and its role in poverty and cultural oppression (Matsuda, 2020).

There are also important differences, both in access and outcomes, related to AI. Wealthy institutions in the Global North explore next-generation AI tools while countries in the Global South with insufficient resources lack the infrastructure (e.g., no high-speed Internet or no devices) required to engage significantly with AI (Selwyn, 2021). This digital divide will intensify ongoing inequities in education and to exclude learners situated in marginalized or disenfranchised communities from innovations and expansions in literacy interventions that could inform their language skill development. Even where there is access to this technology, problems related to broader social and economic conditions will in still contribute to the effectiveness of that individual in managing and navigating those AI forms of engagement. For instance, a student with poor digital literacy may not effectively troubleshoot an error message in a chatbot dialogue and the resultant gap in achievement will be consolidated (De Freitas et al., 2020).

However, there is a growing scholarship advocating participatory approaches to AI design in ELT. For example, Gutiérrez (2020) states that culturally responsive pedagogy must now include the development of technology and asserts that educators and learners should create tools that fit their linguistic repertoires and cultural identities (Gutiérrez, 2020). This relates to Shumar and Baker's (2023) push for "critical data literacy" in which stakeholders interrogate the origins of AI-generated content and the politics of those generative tools. Also, UNESCO (2022) notes policy frameworks and procedures to ensure the intended consequences of deploying AI technologies address (and not amplify) systemic inequities. Overall, there seem to be very few participatory models of AI development and deployment, especially as the majority of AI tools are produced by corporate entities striving for global scalability and not local competence.

A major gap within the literature is the lack of qualitative studies focusing on the lived experience of educators and learners in non-Western, multilingual contexts. The field is primarily dominated by quantitative studies that measure factors like test score increases and engagement, while socio-cultural factors such as race, class, power and privilege inform how educators take up such innovative work with AI tools (Williamson, 2023). When

qualitative studies are used, they are most often drawn from predominantly White participants in privileged settings, thereby leaving important, marginal voices out of the literature. As a result, this perpetuates a homogenizing discourse by failing to acknowledge the array of voices, pedagogical practices, learner identities, and cultural values manifested in contexts around the world.

This study addresses the gaps by highlighting educators and learners voices in non-Western, multilingual contexts. Using qualitative stories to center the study, it combines socio-cultural theory and critical pedagogy to examine how the integration of AI in ELT mediates cultural identity, equity, and agency. The next chapter describes the methodology that was used in exploring these dynamics in detail.

3. Methodology

3.1 Research Design

This study utilized a qualitative, interpretive study design to investigate socio-cultural dynamics in AI-enabled English Language Teaching (ELT), specifically within non-Western, multilingual contexts. Qualitative inquiry seeks to privilege what participants experience, and then how they culturally interpret their expressed experience and what situated knowledge they rely on more so than what researchers can quantify (Creswell & Poth, 2018). This study valued the stories of educators and their learners to investigate how socio-cultural dynamics shape ways of perceiving the integration of AI and define potential approaches for designing culturally responsive tools.

3.2 Context and Setting

This study encompasses six non-Western, multilingual contexts: Bangladesh, Nepal, Morocco, Vietnam, Dubai, and Japan. These particular cases illustrate the complexity of AI integration in contexts where English is treated as a foreign language alongside local languages, and where local cultural attitudes toward technology and modes of working are not necessarily the same. For example, in collective contexts in East Asian classrooms, the emphasis on academic independence in AI may not match existing educational norms class, while in South Asian post-colonial sites, their linguistic hierarchies shaped by a standardized English in intervention and AI tools may exacerbate tensions (Warschauer et al., 2022). These varied contexts will allow

for a broader consideration of the role AI might play in the ELT world. In this respect, the project may offer more than an understanding of AI's role in relation to ELT than that offered by current perspectives from the Global North.

3.3 Sampling & Participants

To recruit 11 educators and 33 learners (secondary to tertiary level) from across the six regions, purposive sampling was used. The sampling strategies of age, gender, institution and prior experiences with AI tools were developed to ensure a diverse participant representation. Educators were prioritized as they were playing the role of mediating the integration of AI, and learners described how the integration of these technologies were coalescing with their identities and learning practices. Three focus groups were also held with educators and learners (6-8 per group) to encourage discussion of educators and learners' shared or contested views within a collaborative discourse.

3.4 Data Collection Procedures

Data were gathered through semi-structured interviews and focus group discussions (FGDs) – structured to solicit narratives in 3 thematic pillars: personal experiences negotiating AI ultimately in ELT; cultural tensions experienced with AI integration; and visions for what equitable and inclusive design in AI should entail in regards to linguistic representation. The interviews and FGDs utilized open questions that provided space for participants to narrate their own concerns and communicate issues most relevant to their contextual situation (Braun & Clarke, 2019).

3.5 Data Analysis

Thematic analysis was adopted to ascertain patterns within participants' narratives. The initial coding was inductive and allowed themes to emerge from the data, and subsequent drafts utilized deductive categories taken from extant literature; for example, algorithmic bias, cultural mediation, and equity (Braun & Clarke, 2019). Furthermore, we maintained reflexivity through the processes of transcribing and peer debriefing, recognizing the positionality of the researcher and any biases when interpreting the participants' accounts.

3.6 Ethical Considerations

Ethical guidelines were rigorously followed. Informed consent was obtained from all participants with explicit assurances of confidentiality and withdrawal rights. Moreover, data were anonymized and records were assigned pseudonyms to protect identities.

4. Findings

This section presents the study's findings through a synthesis of participant narratives in relation to socio-cultural theory (Vygotsky, 1978) and critical pedagogy (Freire, 1970). Themes are organized around the two research questions that guided the study.

4.1 Perceptions of AI Integration in ELT

4.1.1 Cultural Tensions in AI Adoption

Across the six region groups, a prominent theme emerged, which was the dissonance of AI tool design and local pedagogical values. Participants repeatedly said AI was "foreign" in terms of the Western focused values imposed and was at odds with their cultural and educational practices.

Mismatch Between Individualism and Collectivism

In Japan and Vietnam, educators critiqued AI's emphasis on self-directed learning, which conflicted with collectivist classroom cultures prioritizing teacher guidance and peer collaboration. A Japanese high school teacher, *Yuki* (35, female), explained:

> "Our students thrive on group work and teacher-led discussions. When AI gives instant feedback, they feel isolated. It's like talking to a machine that doesn't understand our *wa* [harmony] culture."

Similarly, Vietnamese university lecturer *Lan* (42, female) noted:

> "Students here expect the teacher to correct mistakes directly. If an AI flags an error but doesn't explain it, they get frustrated. Learning isn't just about answers—it's about relationships."

These insights align with socio-cultural theory (Vygotsky, 1978), which emphasizes mediation through social interaction, yet many AI tools reduce learning to a transactional exchange.

Algorithmic Bias and Linguistic Erasure

Participants in Morocco and Bangladesh mentioned how AI platforms marginalized regional dialects and cultural contexts. For educator participants in Morocco, there was frustration when interacting with a chatbot that failed to recognize Darija (Moroccan Arabic) or Amazigh terms. A secondary school teacher, *Amina* (38, female), shared:

> "The AI chatbot only responds to formal English or textbook French. But our students code-switch between Darija, Amazigh, and English daily. The tool feels irrelevant to their reality."

In Bangladesh, learners reported AI tools mislabeling culturally specific expressions as errors. A university student, *Rahim* (20, male), recounted:

> "I wrote about Eid celebrations using words like 'Sehri' [pre-dawn meal during Ramadan] and 'Roza.' Grammarly corrected them as 'incorrect.' It's like the AI erased my culture."

These experiences respond to broader critiques of algorithmic bias in natural language processing (NLP), with training data favouring Inner Circle English varieties (Bender et al., 2021).

Power Hierarchies and Resistance

Educators in Dubai and Nepal observed resistance to the adoption of AI as a result of structural power dynamics. In particular, Nepali teachers emphasized their reverence for human knowledge and expertise, making feedback from an "artificial" intelligent being feel unnatural to them. A curriculum designer, *Dr. Bhattarai* (50, male), stated:

> "Teachers here are seen as mentors, not just knowledge deliverers. If an AI challenges their authority, it creates tension. Students ask, 'Why trust a machine over our teacher?'"

Dubai-based learners from low-income backgrounds described AI as "a luxury for the privileged." A secondary student, *Fatima* (16, female), observed:

> "My parents work long hours. If I struggle with an AI app, there's no one to explain it. The rich kids get tutors; we just give up."

These narratives underscore how socio-economic and cultural hierarchies mediate AI's perceived legitimacy.

4.1.2 Equity Concerns and Access Gaps

Socio-economic disparities emerged as a pervasive barrier to AI integration, particularly in Nepal and rural Vietnam. Participants highlighted uneven access to devices, internet connectivity, and digital literacy.

Infrastructure Challenges

In Nepal, educators described stark contrasts between urban and rural schools. A government school teacher, *Gita* (33, female), shared:

> "In Kathmandu, some schools have smart classrooms. But in rural areas, students share one mobile phone for four siblings. How can we talk about AI equity when basic infrastructure is missing?"

Similarly, Vietnamese learners in rural provinces criticized unreliable internet access. A student, *Minh* (18, male), remarked:

> "If the village Wi-Fi goes down, I lose all my progress. My city friends stream videos; I download lessons once a week."

Digital Literacy Divides

Participants in Dubai and Bangladesh emphasized how gaps in digital literacy exacerbated inequalities. A Bangladeshi educator, *Farida* (40, female), noted:

> "Many of our students haven't used a computer before. Asking them to navigate AI apps without training is setting them up to fail."

These findings echo global critiques of the "digital divide" in education (Selwyn, 2021), highlighting how AI risks deepening existing inequities.

4.1.3 Opportunities for Personalization and Innovation

Despite challenges, participants acknowledged AI's potential to enhance engagement and accessibility when aligned with local needs.

Flexible Learning and Immediate Feedback

Vietnamese learners praised adaptive platforms for offering flexible practice outside rigid classroom schedules. A university student, *Linh* (22, female), shared:

> "The AI app lets me learn at my own pace. I can repeat pronunciation exercises until I get it right, which teachers don't have time for."

Moroccan educators saw value in AI-driven analytics for identifying learner struggles. A teacher, *Hassan* (45, male), stated:

> "The platform shows where students need help. We use that data to adjust lessons, even if the AI itself isn't perfect."

Gamification and Engagement

In Japan, gamified AI tools were praised for motivating reluctant learners. A high school student, *Kenji* (17, male), noted:

> "I play vocabulary games on my phone like it's a video game. My friends and I compete for high scores—it's fun!"

However, participants stressed that such benefits were contingent on addressing cultural and infrastructural barriers.

4.2 Proposed Strategies for Culturally Responsive AI Design

4.2.1 Localizing Content and Language Support

Across all regions, stakeholders demanded AI tools that reflect local languages, cultural references, and communication styles.

Multilingual and Contextual Integration

Bangladeshi educators advocated for integrating Bangla transliteration features and localized examples in grammar exercises. A focus group in Dhaka proposed:

> "If an AI teaches prepositions, why not use examples from Cox's Bazar or the Sundarbans? Our students deserve to see their world reflected in learning materials."

Vietnamese learners called for chatbots that recognize regional accents and idioms. A student, *Linh,* argued:

> "English apps should accept 'teacher, why you no come yesterday?' as valid, even if it's not textbook grammar. That's how we speak!"

Cultural Representation in Content

Moroccan teachers emphasized the need for culturally relevant scenarios in AI-generated texts. A focus group suggested:

> "Use stories about our festivals, landscapes, or family traditions. Don't just recycle American or British examples."

These proposals align with calls for decolonizing English language education (Matsuda, 2020), advocating for tools that validate learners' identities.

4.2.2 Participatory Design Practices

Participants rejected top-down AI development models, urging greater involvement of educators and learners in design processes.

Co-Creation with Local Stakeholders

Moroccan educators stressed the importance of collaborating with local experts. A teacher, *Amina,* proposed:

> "Let us design the questions and examples. We know our students better than Silicon Valley engineers."

Nepali participants advocated for "cultural sensitivity audits" involving linguists and community leaders. A student, *Anita* (24, female), explained:

> "Test the AI with our proverbs, stories, and communication styles. If it fails, fix it."

This aligns with participatory design principles (Gutiérrez, 2020), which prioritize stakeholder agency in shaping technology.

4.2.3 Addressing Equity Through Hybrid Models

Participants proposed hybrid approaches blending AI with human support to mitigate access gaps.

Community-Based AI Access

Japanese educators suggested "AI clubs" in schools to provide shared access for underprivileged students. A teacher, *Satoshi* (52, male), proposed:

> "Use class time for group AI activities, so everyone gets equal practice. Teachers can guide discussions afterward."

Offline and Low-Bandwidth Solutions

Dubai-based learners recommended offline AI features, such as downloadable exercises. A student, *Omar* (19, male), suggested:

> "Even if the internet dies, let us keep practicing with pre-loaded lessons."

Such strategies echo UNESCO's (2022) recommendations for equitable AI deployment, prioritizing context-specific solutions over universal fixes.

4.3 Cross-Contextual Insights

While experiences differed by local context, three key themes emerged across group contexts:

1. **Cultural Relevance:** All groups demanded AI tools that validate local languages, identities, and pedagogical traditions.
2. **Equity as a Prerequisite:** Technological innovation was seen as meaningless without addressing infrastructural and socio-economic barriers.
3. **Agency in Design:** Participants rejected passive roles as "users," insisting on active participation in shaping AI's role in education.

There were some major differences related to collectivist vs. individualist orientations. Japanese and Vietnamese participants prioritized group learning while Moroccan and Nepali participants involved the larger community of content creators principles in their responses.

To sum up, the results show a dichotomy where AI in ELT is seen as both creative and exclusive, empowering and alienating. While acknowledging its promise, stakeholders call for drastic changes in design paradigms to address issues of equity disparities, cultural prejudice, and participatory ethics. As one Bangladeshi teacher, *Farida*, succinctly stated:

> "AI can help, but it must *listen* to us first. Otherwise, it's just another colonial tool."

5. Discussion

This section provides an analysis of the study's findings interpreted using socio-cultural theory (Vygotsky, 1978) and critical pedagogy (Freire, 1970). It connects the participant stories to a larger conversation about AI in education, analyze how socio-cultural factors may mediate the integration of AI in English Language Teaching (ELT), evaluates the actions of key stakeholders in designing a culturally responsive engagement with ELT, and discusses implications for practice, policy, and future research.

5.1 Cultural Tensions in AI Integration: Theory and Practice

5.1.1 Dissonance Between Individualism and Collectivism

The findings of the study reinforce the importance of socio-cultural theory in understanding AI adoption in ELT. Vygotsky (1978) suggested that learning is mediated through social interactions as well as the cultural tools that shape our interactions, but many AI policy documents advocate for social situativity that mistakenly emphasizes individualized, algorithmically-generated feedback rather than social dialogue. Participants from all 6 regions described AI as a "foreign" entity introducing Western-centric norms that conflicted with underlying pedagogical values in the local cultures. For example, participants from Japan and Vietnam expressed concern that the standards required in AI were individualized when those countries held collectivist classroom cultures that emphasized teacher instruction and collaborative work among peers. A Japanese teacher, *Yuki*, noted:

> "Students here thrive on group work and teacher-led discussions. When AI gives instant feedback, they feel isolated. It's like talking to a machine that doesn't understand our *wa* [harmony] culture."

These perspectives challenge the techno-deterministic assumption that AI can universally enhance education, instead highlighting the need to adapt tools to local pedagogical epistemologies (Warschauer et al., 2022).

Similarly, Moroccan learners reported that chatbots failed to recognize Darija (Moroccan Arabic) or Amazigh terms, rendering the tools irrelevant to their daily communication. A teacher, *Amina*, explained:

> "Our students code-switch between Darija, Amazigh, and English daily. The AI feels like a guest who refuses to learn our language."

These tensions exemplify the algorithmic bias that exists within natural language processing (NLP) that privileges varieties of Inner Circle English (Bender et al., 2021). Participants like Rahim (Bangladesh) described feeling as if their culture was erased from existence when their AI reported that words such as "Sehri" (the pre-dawn meal during Ramadan) were "incorrect. "This connects to Freire's (1970) critique of educational as "banking education," where knowledge is just deposited in passive learners instead of co-constructed in dialogue.

5.1.2 Power Hierarchies and Resistance to AI Authority

The research also shows how power relations in classrooms mediate the adoption of AI. The resistance of some Nepali educators to AI encroaching on the teacher's power and authority aligns with Freire's (1970) critique of the "banking model" of education, where knowledge is deposited into students who are passive learners. A Nepali participant framed AI as a threat to the teacher-student mentorship relationship, stating:

> "Teachers here are seen as mentors, not just knowledge deliverers. If an AI challenges their authority, it creates tension."

This reflects a global concern about the role of AI in displacing human agency, especially in contexts where educators occupy a highly regarded position culturally (Selwyn, 2021). Similarly, Dubai-based students described

AI as "a luxury for the privileged," echoing critiques of digital divides that further exacerbate socio-economic differences (UNESCO, 2022). In a way, this also points to digital divide concerns and highlights the need to build AI tools that augment, not replace human capability, especially in contexts where educators occupy a highly regarded position culturally.

5.2 Equity Concerns: Access, Infrastructure, and Digital Literacy

5.2.1 Uneven Infrastructure and Socio-Economic Barriers

The gap patterns identified by participants in Nepal and rural Vietnam resonate with Selwyn's (2021) insight into education and the "digital divide". The stark contrast between urban and rural settings is epitomised by Gita's fact that in Nepal, "students have to share one mobile phone for four siblings" which further illustrates how capacity constrains access for already marginalised communities and excludes them from access to the affordances of AI tools. Minh in Vietnam described how unreliable connectivity in rural areas forces learners to use AI by "once-a-week downloads" which undermines the apparent flexibility of AI options, rather than having real-time access.

These findings disrupted narratives about AI as a democratizing tool and instead revealed the way it further perpetuates systemic disadvantage. Moreover, as UNESCO (2022) cautions, when thinking about fairer AI, simply making advanced technologies available to people does not address the foundational barriers of device access and connectivity and will not lead to equitable outcomes.

5.2.2 Digital Literacy as a Hidden Curriculum

Additionally, the research found gaps in digital literacy, notably in Bangladesh and Dubai. Farida (from Bangladesh) noted that many students only had rudimentary computer skills which was prohibiting their ability to navigate AI, "setting them up to fail." This resonates with critical digital literacies frameworks (Shumar & Baker, 2023) which posit that some degree of technological proficiency isn't innate but comes from outside socio-economic privilege. Without interventions or unique support, AI has the potential to privilege learners who have had prior exposure to digital tools, further increasing achievement gaps.

5.3 Culturally Responsive AI Design: Participant-Driven Innovations

5.3.1 Localizing Content and Language Support

Participants' propositions for culturally responsive AI design provide implementable solutions for reconciling global technology with local contexts. Calls for multilingual support, from Bangladeshi educators identifying the need for Bangla transliteration to Vietnamese learners requesting local accents, echoed Matsuda's (2020) request for a decolonization of ELT. AI tools have the potential to acknowledge learners' identities if their local dialects, cultural references, and ways of communicating are included in design.

An example is Rahim 's experience having AI label his Eid-related terms as "wrong." Participant suggestions to incorporate local examples (e.g. "Cox's Bazar" in Bangladesh or "Amazigh traditions" in Morocco) directly address this issue through the lens of Gutiérrez (2020) as it relates to her framework of equity-oriented pedagogy.

5.3.2 Participatory Design and Co-Creation

The emphasis on participatory design—evidenced in Moroccan teachers' calls to "design the questions ourselves" and the request from Nepali stakeholders for "cultural sensitivity audits"—represents a growing movement towards democratizing technological development, and represents a challenge to the corporate-centric model for AI design that prioritizes stakeholder agency over top-down models (Williamson, 2023).

The focus group conversations were clear that co-creation must include not only educators but also learners and community leaders as well. As *Anita* (Nepal) stated:

> "Test the AI with our proverbs, stories, and communication styles. If it fails, fix it."

Such strategies align with Shumar and Baker's (2023) advocacy for "critical data literacy," where stakeholders interrogate the politics of AI-generated content.

5.4 Hybrid Models and Policy Implications

5.4.1 Blending AI with Human and Community Support

The hybrid model proposals participants shared—like the Japanese "AI clubs" for access sharing and offline elements developed in Dubai—provide practical responses to access inequities. These examples support UNESCO's (2022) call for critical contexts in the deployment of AI, providing

flexibility instead of universal solutions. For example, Satoshi's proposal to use AI as a form of group activity ("so everyone gets the same practice") is an example of striking a balance between technology and socio-cultural values. Omar's proposal of downloadable lessons is another example of convergence with low bandwidth in mind, while retaining functionality. These voices are important in advocating for a move away from thinking of AI as a decontextualized solution and toward an understanding of AI as a socio-technical process that requires cultural humility and ethical accountability.

5.4.2 Policy Recommendations for Equitable AI in ELT

The results of this study point to the need for the following policies:

a. To provide access to AI to marginalized communities, governments and institutions must invest in connectivity and devices.

b. Regulators should impose requirements on the developers of AI systems to include regional languages, dialects, and examples for use in educational materials.

c. Policymakers should design opportunities for educators, learners, and local experts to collaboratively design AI systems.

These actions correspond with UNESCO's (2022) global recommendations regarding the ethical use of AI in education to provide inclusivity and accountability.

5.5 Limitations

The qualitative structure of this research allows us to engage with participant narratives at a deep level and yet, there are some limitations. First, the small, purposive sample size and specific focus on six regions outside of the West limits how generalizable the results are for wider contexts. Second, in relying on self-reported data, there is the possibility of social desirability bias, where participants expressed socially legitimized views instead of their actual experienced reality. Steps were taken to mitigate bias through the use of anonymous respondent claims and repeated member-checking but bias will always exist in some form. Finally, the study relied on stakeholder perceptions and not on direct technical audits of AI tools. This is justified by the study goals of understanding lived human experiences rather than technical audits,

but it still means gaps remain in understanding the technical mechanisms that underpin perceived biases.

6. Conclusion and Recommendations

This study examined how social and cultural contexts influence the embedding of Artificial Intelligence (AI) in English Language Teaching (ELT) in six non-Western sites: Bangladesh, Nepal, Morocco, Vietnam, Dubai, and Japan. By prioritizing participants' realities, the findings indicate that AI can only be effective in a language education environment not on its own based on its technical features, but rather it must fit within culturally sensitive values that are about equity and allowing constituents to be co-creators of knowledge. Participants identified that AI tools developed through a Western-centred approach rarely match behaviors found in a collectivist focus, marginalized multilingual learners through potential algorithmic biases, and questions teacher agency. For example, Japanese educators challenged AI's focus on self-directed learner responsibilities, which negated aspects of their collectivist classrooms, while Moroccan learners labelled chatbots useless if they could not recognize even single word Darija or Amazigh terms. These findings deconstruct a techno-optimistic narrative of AI as a panacea, reframing it as a socio-technical process shaped by cultural humility and ethically engaged pedagogy.

Participants suggested three strategies for making AI meet its promising potential and the limitations of culture and infrastructure. First, they called for localizing content more, including region-specific languages, dialects, and culturally relevant situations in their designs. Second, they recommended using participatory design methods and encouraging that both educators and learners contribute to the creation of the tools. Third, they supported hybrid models of combining AI and human support, like offline capabilities for low-bandwidth environments, or teacher mediation in collectivist contexts. This movement towards a participatory design aligns with UNESCO's (2022) peacemaking call for contextualized AI, valuing the flexibility of contextualization more than prebuilt solutions.

In order to support equity and cultural awareness in AI-driven ELT, policies and institutions need to develop infrastructure equity, mandate culturally relevant localization in the AI development work, and encourage participatory governance in processes. Educators can include critical digital

literacies so that learners can challenge the biases of AI, and developers can audit algorithms for linguistic diversity. Additionally, future studies could examine the longer-term impact of AI on learner identity and assess hybrid pedagogies in spaces where resources are constrained.

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Appendices

Appendix A: Interview Protocols

Educator Interview Open-ended Questions:

1. How do you currently use AI tools in your English language teaching?
2. What challenges or opportunities have you encountered when using AI with your students?
3. How well do you think AI tools align with your local pedagogical values (e.g., collectivism, teacher authority)?
4. What changes would you suggest to make AI tools more culturally responsive for your learners?
5. How do socio-economic or infrastructural barriers affect AI access in your context?

Learner Interview Open-ended Questions:

1. How do you use AI tools for English learning outside the classroom?
2. Have you ever felt that an AI tool misunderstood your cultural background or language use?
3. What features would make AI tools more relevant to your communication style or regional dialect?
4. How do you handle technical challenges (e.g., internet access, digital literacy) when using AI?
5. Would you prefer AI to work independently or with teacher guidance? Why?

Appendix B: Focus Group Discussion (FGD)

1. Share a time when an AI tool felt irrelevant to your cultural context.
2. How can AI better support multilingual learners who code-switch or translanguaging?
3. Should AI developers collaborate with local educators? How?
4. What hybrid models (AI + human support) would work best in your school/community?
5. How can AI address—or avoid worsening—existing socio-economic gaps in education?

Appendix C: Informed Consent Form

Participant Information Sheet

Title: Culturally Responsive AI in ELT: Educator and Learner Perspectives
Purpose: To investigate how socio-cultural factors shape AI integration in English language teaching.
Procedures:

- Semi-structured interviews (30–45 minutes) or focus group discussions (60–90 minutes).
- Audio recording and transcription (with consent).

Confidentiality:

- Data will be anonymized using pseudonyms.
- Recordings destroyed after publication.

Voluntary Participation:

- You may withdraw at any time without penalty.

Contact:
Consent Statement:

I confirm that I have read the information above and agree to participate in this study.
e-Signature: _____
Date: _____

Appendix D: Coding Scheme Example

Thematic Categories and Sub-Codes

Theme	Sub-Codes	Extract
Cultural Tensions	Collectivist vs. Individualist Design	"Students thrive on group work, but AI isolates them." (*Yuki*, Japan)
	Algorithmic Bias in NLP	"Grammarly flagged Eid terms as incorrect." (*Rahim*, Bangladesh)
Equity Concerns	Infrastructure Gaps	"One mobile phone for four siblings in rural Nepal." (*Gita*, Nepal)
	Digital Literacy Barriers	"My parents can't help me troubleshoot AI apps." (*Fatima*, Dubai)
Participatory Design	Localization of Content	"Use examples from Cox's Bazar, not just Western cities." (*Bangladeshi Focus Group*)
	Co-Creation with Stakeholders	"Let teachers design the questions—we know our students best." (*Amina*, Morocco)

Appendix E: Data Anonymization Protocol

All participant names in the study are pseudonyms. Identifying details (e.g., location, school type) have been altered or omitted to protect confidentiality. Transcripts were stored in password-protected files accessible only to the researcher.