**The Paradox of Technology in English Language Education: Connected or Excluded?**

**Abstract**

This article explores the complex relationship between educational technology and equity in English language learning, particularly in the Global South. While the proliferation of digital tools like mobile apps to AI-based platforms—has opened new avenues for language acquisition, their actual impact on reducing structural inequalities remains contested. Through a critical lens grounded in the works of Paulo Freire, John Dewey, Lisa Delpit, and others, the article interrogates whether technology can serve as a leveller or inadvertently reproduces existing hierarchies of language, access, and opportunity. Drawing on global case studies from India, Africa, and Southeast Asia, and mapping differences between urban and rural, public and private learning environments, the article highlights both the possibilities and the limits of technology-mediated English instruction. Barriers such as device access, socio-economic inequality, linguistic bias, and pedagogical mismatch are examined, alongside emerging efforts in culturally responsive design and equity-focused policy.

The article argues that meaningful change will require a shift from tech-centric innovation to justice-oriented implementation. It concludes with practical policy recommendations and a call for participatory, inclusive, and critically engaged approaches that prioritize the needs and voices of marginalized learners in shaping the future of English language education.

**Keywords:** Digital divide, educational technology, English language education, equity and access, language policy, multilingual pedagogy

1. **Introduction**

**Framing the Equity Question**

In recent years, particularly in the aftermath of the COVID-19 pandemic, English language education has undergone a dramatic transformation which is increasingly mediated by technology. This shift has opened new avenues for language learning through mobile apps, online platforms, and artificial intelligence (AI). However, it has also highlighted persistent—and in many cases widening—inequities in access, participation, and outcomes. The digital turn in English education, hailed by many as a democratizing force, has not equally benefited all learners. In fact, it risks reproducing the very social, economic, and linguistic hierarchies it aims to dismantle.

The concept of the “equity gap” in English language education refers to the unequal distribution of resources, opportunities, and outcomes among learners. These learners come from different socioeconomic, geographic, linguistic, and cultural backgrounds. Unlike “equality,” which implies the same treatment for all, “equity” demands attention to the specific needs and starting points of learners. In multilingual and stratified societies, where English proficiency often serves as a gatekeeper to higher education, employment, and social mobility, this gap has real material consequences. Learners in rural or under-resourced regions often face a double disadvantage—limited access to qualified English teachers and insufficient digital infrastructure—both of which are magnified in the context of remote or online learning.

Against this backdrop, the central question guiding this article is: *Can technology meaningfully narrow the equity gap in English language education?* Or does it, in practice, widen the gulf between those who already have access to resources and those who do not? Addressing this question requires more than an inventory of tools or platforms. It demands a critical examination of how educational technologies are designed, deployed, and received across diverse learning contexts. As John Dewey (1930) argued, education must be rooted in experience and oriented toward democratic participation, not merely the passive acquisition of skills. Lisa Delpit (2006), writing from the standpoint of culturally responsive pedagogy, reminds us that educational interventions—technological or otherwise—must reckon with the power dynamics embedded in language and curriculum. And Howard Gardner's (2011) theory of multiple intelligences cautions against one-size-fits-all approaches that privilege certain cognitive styles over others. These theoretical perspectives converge with Paulo Freire's (2005) vision of critical pedagogy, where education is not a neutral endeavor but a means of either reinforcing or challenging existing inequalities.

The COVID-19 pandemic served as a global stress test for educational systems. In response to school closures, governments and educators turned to EdTech solutions at an unprecedented scale. Mobile phone–based instruction to learning management systems and AI-powered language tutors were primarily used. While some learners adapted with ease, others were left behind due to lack of connectivity, digital literacy, or institutional support. These divergent experiences raise fundamental questions about the role of technology in shaping the future of English language learning: Who designs these tools? Whose linguistic norms do they prioritize? Who gets to participate fully, and who is marginalized further?

This article argues that while technology holds the potential to democratize English education, this potential can only be realized through intentional, inclusive, and equity-oriented design and policy. Without such critical attention, the very tools intended to level the playing field may instead reinforce the social and linguistic divides that have long defined English language education.

**1.2 Aims and Objectives**

The primary aim of this study is to explore the extent to which digital technologies can address structural inequities in English language learning, It is crucial specifically for marginalized learners in linguistically diverse, socioeconomically disadvantaged, and digitally under-connected regions.

To achieve this aim, the article is guided by the following objectives:

1. To define and contextualize the concept of equity in English language education within both historical and contemporary frameworks, distinguishing it from related concepts such as access, equality, and inclusion.
2. To review existing theoretical and empirical research on the intersection of educational technology, linguistic justice, and English language pedagogy, drawing from perspectives in critical pedagogy (Paulo Freire), democratic education (John Dewey), sociolinguistics (Lisa Delpit), and cognitive diversity (Howard Gardner).
3. To evaluate contemporary English learning technologies and digital delivery models and analyze case studies and field-based practices from varied socio-economic and geographic contexts (e.g., rural India, Southeast Asia, Sub-Saharan Africa) that illustrate both the potentials and pitfalls of using technology in English language education.

## ****2. Literature Review****

English has long been tied to questions of access and inequality. Historically, as Pennycook (2017) observes, in many postcolonial societies, English functioned not just as a language of wider communication but as a **gatekeeper to economic opportunity and social mobility**. In India, for instance, English was promoted by the British colonial administration as a language of the elite, creating a linguistic divide that persists today (Canagarajah, 1999). As globalized economies began valuing English for employability and higher education, learners in non-elite schools often found themselves excluded from meaningful opportunities due to poor language instruction or limited access.

Equity in English language education refers to more than just ensuring everyone learns English. It means recognizing and addressing the **unequal conditions under which students access, engage with, and succeed in English learning**. This includes disparities in instructional quality, curriculum relevance, home support, and digital access. Scholars like Delpit (2006) have emphasized that language learning is embedded in **power relations**, where dominant norms privilege certain ways of speaking, writing, and thinking while marginalizing others. Freire’s (1970) concept of **critical pedagogy** remains particularly relevant here. For Freire, education should not be about depositing knowledge into passive learners (“banking model”) but about empowering students to question, reflect, and act. Applied to English education, this means technology must not just deliver lessons—it should create spaces for learners to express themselves, affirm their identities, and engage critically with content.

Technology in education has often been celebrated as a “leveling” force. UNESCO (2023) notes that digital learning platforms can overcome geographic and economic barriers by reaching remote learners and can offer free content, and allowing flexible access. However, such optimism often overlooks **deep structural inequalities**, including limited internet infrastructure, device affordability, and digital literacy gaps (Van Dijk, 2019). Warschauer (2003) highlighted three layers of the **digital divide**: not just access to hardware, but also **skills** (how users engage with tools) and **usage outcomes** (what benefits they gain). For example, a rural student with a shared mobile device may access the same app as an urban counterpart, but without parental support, fast internet, or English-speaking peers, the learning experience is fundamentally different. Moreover, Selwyn (2016) warns against the **techno-determinism** that views technology as inherently progressive. He urges scholars and practitioners to ask, “Who designs these tools? For whom? And whose voices are missing?” In the case of English learning apps, many are designed with Western learners in mind, often privileging standardized grammar and accents while ignoring local linguistic contexts.

Another critical strand in the literature emphasizes the importance of **multilingual and culturally responsive approaches.** Gardner's (2011) theory of **multiple intelligences** challenged one-size-fits-all teaching methods by recognizing that learners bring diverse ways of knowing—linguistic, spatial, interpersonal, etc.—to the classroom. If it is applied English learning through technology, it means creating tools that are **adaptable to different learner profiles**, languages, and local cultural references. Delpit (2006) critiques mainstream English instruction for often devaluing the “language of the home,” thereby alienating minority students. This is particularly relevant for EdTech, where interface design, content, and examples can either alienate or affirm learners. A recent (UNESCO, 2023a) calls for **localization of digital content** and **inclusive design principles** to ensure equitable participation. Since the COVID-19 pandemic, there has been a surge in research on remote and blended English learning. Studies in South Asia and Sub-Saharan Africa highlight innovative uses of WhatsApp, radio, and low-tech mobile apps (Gbadebo, 2024).

**2.1 Research Gap and Rationale**

While existing literature acknowledges the potential of educational technology to enhance English learning, few studies critically examine how these tools either challenge or reinforce structural inequities across diverse contexts. Moreover, there is limited analysis of how design, pedagogy, and policy intersect to shape equitable access, especially in multilingual, under-resourced settings. This article seeks to address this gap by combining critical pedagogy with real-world examples to explore how technology can be made truly inclusive and empowering in English language education.

**2.2 Methodology:**

**A Critical and Contextual Mapping**

This study employs a qualitative, interpretive methodology that synthesizes policy analysis, case study mapping, and critical theory. It examines the intersection of technology and equity in English language education across the Global South. The selection of sources was purposive, based on three main criteria: (1) relevance to English language learning through digital tools, (2) coverage of both policy-level interventions and ground realities, and (3) diversity of contexts including rural–urban, public–private, and socio-economic variation.

Key sources include international policy reports (UNESCO, UNICEF, World Bank), national initiatives like DIKSHA (India), and empirical data from ASER to contextualize learning disparities. In addition, the article reviews the implementation and pedagogical assumptions of emerging AI-driven tools and mobile learning applications. These sources are critically interpreted using a framework grounded in critical pedagogy, drawing on thinkers such as Paulo Freire, John Dewey, and Lisa Delpit.

Rather than offering generalizations, the methodology emphasizes contextual mapping to illustrate how structural inequities persist or shift through technological mediation. This approach aims to uncover both systemic exclusions and possibilities for justice-oriented digital inclusion in English language education.

**Limitations of the Study:**

This article is primarily a conceptual and secondary analysis, and does not include original fieldwork or empirical interviews. While care has been taken to include diverse contexts from across the Global South, the findings are limited by the availability and scope of existing literature and policy reports. Additionally, the fast-evolving nature of educational technology, especially AI-driven tools, means that some platforms and practices may become outdated rapidly. The study is interpretive rather than predictive, and its conclusions aim to inform further inquiry rather than provide universally generalizable claims.

**3. Mapping the Terrain: English Learning Technologies**

As technology becomes increasingly integrated into English language education, it is essential to understand the range of tools available, the ways they are delivered, and the populations they serve. This section surveys current English learning technologies, categorizing them by functionality, mode of delivery, and target audience. It aims to offer a nuanced picture of the digital English learning landscape, foregrounding the equity implications of each tool type.

**3.1 Mobile Apps: Learning on the Move**

Mobile learning applications have proliferated rapidly, offering learners anytime, anywhere access to English lessons. Among the most widely used is Duolingo, which uses gamification to teach vocabulary, grammar, and pronunciation through short, interactive lessons. A study by Loewen et al. (2019) found that while Duolingo can improve receptive skills like vocabulary and reading comprehension, it offers limited support for productive language use or contextual learning. Furthermore, its one-size-fits-all curriculum often lacks cultural or regional customization, which can alienate learners in non-Western settings.

In contrast, regionally developed apps like Hello English—popular in India—cater to multilingual learners by offering instruction in over 20 Indian languages. Research by Daulay et al. (2023) suggests that Hello English increases learner motivation by allowing code-switching and integrating real-world tasks like job interviews or daily conversations. However, both apps assume a minimum level of digital literacy and device access, which limits their reach among low-income learners.

**3.2 LMS Platforms and MOOCs: Expanding Reach and Scale**

Learning Management Systems (LMS) and Massive Open Online Courses (MOOCs) have transformed formal and semi-formal English instruction. Platforms like Coursera, edX, and Khan Academy offer structured English language courses ranging from beginner to academic writing. Many are free or low-cost and have been adopted in higher education institutions worldwide. In India, DIKSHA (Digital Infrastructure for Knowledge Sharing), launched by the Ministry of Education, offers English language resources tailored to school curricula (Ministry of Education, Govt. of India, 2022). While DIKSHA is designed for low-tech environments and includes downloadable content for offline use, a study by Mandala & Pradhan (2024) reveals challenges in teacher training and learner engagement. Without sustained pedagogical support, learners often struggle to complete courses or apply skills meaningfully. Moreover, while MOOCs promise scalability, they face equity challenges. Lan & Hew (2020) found that most MOOC participants come from urban, educated, and digitally literate backgrounds—suggesting that MOOCs may reinforce rather than reduce the digital divide.

**3.3 AI and Chatbots: The Emerging Frontier**

Artificial Intelligence (AI) is the newest player in the English EdTech ecosystem. Tools like Grammarly, QuillBot, and ChatGPT offer grammar correction, writing assistance, and real-time conversational practice. For advanced learners, these tools can be powerful supports for drafting essays, understanding syntax, and improving fluency. However, their equity value is more complex. For instance, Grammarly emphasizes Standard American English norms, often marking regional or non-standard varieties as “incorrect.” This not only reinforces linguistic hierarchies (as Delpit, 2006, cautioned) but may also negatively affect learners' confidence. Similarly, ChatGPT, developed by OpenAI, has been used by learners for writing assistance, reading comprehension, and even simulated speaking practice. While some educators report positive results (Labadze et al., 2023), others raise concerns about learner overdependence and the lack of feedback tailored to individual learning trajectories. Furthermore, these tools often require stable internet, high-end devices, and a baseline of digital fluency. Without careful design or policy support, they risk serving only the most advantaged learners.

**3.4 Typology of Delivery Models**

To understand how these technologies operate, it is useful to categorize them based on delivery modes and technological intensity.

**Table 1: Modes and Accessibility of English Learning Technologies**

| **Typology** | **Description** | **Examples** |
| --- | --- | --- |
| Synchronous learning | Real-time instruction; requires strong connectivity | Zoom classes, live tutoring on Cambly |
| Asynchronous learning | Self-paced; content can be accessed anytime | Duolingo, DIKSHA, YouTube lessons |
| High-tech solutions | Require broadband, smart devices, AI integration | MOOCs, ChatGPT, Grammarly |
| Low-tech solutions | Designed for feature phones, offline, radio/TV | SMS-based learning, DIKSHA downloads |

The choice of delivery mode has direct equity implications. Asynchronous, low-tech solutions are generally more inclusive, especially in rural or low-resource contexts. However, they may lack interactivity and feedback. High-tech tools, while more personalized and adaptive, often exclude learners with weak connectivity or limited device access (Warschauer, 2003).

**3.5 Target Populations and Digital Margins**

Different tools cater to different learner profiles: Urban learners often have access to high-speed internet, a variety of devices, and multiple language learning choices. They can use synchronous MOOCs, AI chatbots, and advanced apps with ease. Rural learners, on the other hand, face infrastructural and economic constraints. They may rely on SMS-based learning, community radio, or offline resources. While platforms like DIKSHA and Hello English attempt to bridge this divide, sustained support from teachers, communities, and local governments is essential. Formal learners (e.g., enrolled in school/university) benefit from structured learning, assessment, and certification. Technology here often complements the curriculum. Informal learners (e.g., migrants, job seekers) use technology out of necessity or aspiration, often learning English to improve employability. For them, platforms like YouTube or Hello English offer flexible, goal-oriented learning pathways. Understanding these learner categories is vital to equity-oriented design. As scholars like Selwyn (2016) argue, educational technology must not treat learners as a homogenous group but recognize their diverse motivations, constraints, and identities.

## ****4. Barriers to Equity in Digital English Learning****

While digital tools promise to democratize English language education, their implementation often reflects—and sometimes exacerbates—existing social inequities. This section explores four critical categories of barriers that hinder equitable access and outcomes: technological infrastructure, socioeconomic divides, cultural-linguistic exclusion, and pedagogical shortcomings. Acknowledging these obstacles is essential to reimagining technology not just as a delivery mechanism, but as a socially responsive medium.

### 4.1 Access Barriers: Devices, Internet, and Infrastructure

The **digital divide** remains the most immediate barrier to equitable English learning. In low-income and rural regions, learners may lack access to smartphones, laptops, or tablets—the basic tools needed for most EdTech applications. Even when devices are present, **inconsistent internet connectivity** and frequent **power outages** hinder usage. A report by UNESCO (2023b) highlights that during the COVID-19 school closures, only 43% of learners in low-income countries had access to the internet, and even fewer had stable electricity or quiet study environments. In India, for instance, the **Annual Status of Education Report** ASER, (2020) found that only 11% of rural children accessed online classes regularly. Additionally, **technical support** is often unavailable. Many students—and even teachers—lack the digital literacy to navigate platforms independently, especially when interfaces are in English or use unfamiliar layouts. Warschauer (2003) warned that without accompanying investments in infrastructure and training, technological adoption can create new layers of exclusion.

### 4.2 Socioeconomic Barriers: Class, Gender, Geography, Caste

Socioeconomic disparities shape who benefits from digital English tools and who is left behind. **Urban middle-class learners**, often with parental support and access to private schooling, are better positioned to use digital tools effectively. Conversely, **working-class, rural**, and **marginalized caste communities** face multiple intersecting disadvantages. **Gender disparities** further complicate the landscape. In South Asia, for instance, digital access for adolescent girls is significantly lower than for boys due to social norms, surveillance, and domestic expectations. As per the study by UNICEF (2023)in India, only 26% of women have ever used the internet compared to 50% of men. This digital gender gap directly limits English learning opportunities, particularly as English is increasingly seen as a ticket to upward mobility. **Caste and linguistic background** also mediate access. English is still a marker of upper-caste privilege in many Indian contexts (Tupas & Sercombe, 2014). Learners from Dalit or Adivasi communities may not only have fewer opportunities to use digital platforms but also face internalized stigma and external prejudice when they attempt to speak English. When EdTech solutions ignore these deeply embedded social hierarchies, they risk reinforcing structural inequalities.

### 4.3 Cultural-Linguistic Barriers: Whose English?

Another major obstacle is the **linguistic uniformity** of many English learning tools. Most are based on **Standard American or British English**, marginalizing **vernacular varieties** and **World Englishes**. Tools like Grammarly and Duolingo flag non-standard usages as “errors,” subtly devaluing local linguistic identities and reinforcing what Lisa Delpit (2006) calls the “culture of power.” Furthermore, many platforms lack support for **translanguaging**, even though multilingual practices are the norm in most parts of the Global South. Learners who speak Hindi, Bengali, Yoruba, or Thai often need to switch between languages fluidly—yet few platforms are designed with this pedagogical need in mind. Akkara et al. (2021) found that apps offering vernacular scaffolding, like Hello English, were more effective in promoting sustained engagement among rural learners. Another challenge is the **language of instruction** itself. If the platform’s interface, tutorials, and explanations are in formal or technical English, it alienates those with limited prior exposure. This reinforces a **hidden curriculum** of linguistic elitism, where only learners already proficient in English can meaningfully benefit from English-learning tools.

### 4.4 Pedagogical Issues: Context, Teachers, and Bias

Perhaps the most overlooked barrier to equity in EdTech is the **pedagogical design** of the tools. Many platforms focus heavily on vocabulary drills, grammar exercises, or repetitive testing—often divorced from learners’ cultural contexts or real-world needs. This can lead to **surface-level learning,** where students memorize words but struggle to apply them in authentic communication. Moreover, digital tools often **lack teacher mediation**, which is crucial for supporting less confident learners, correcting misconceptions, and adapting instruction to the learner’s pace. As Freire (2005) emphasized, education must be dialogic and relational—not merely transactional. In low-resource contexts, where teacher training in digital pedagogy is limited, the risk is that learners become **passive consumers** rather than **active users** of language. Artificial Intelligence (AI) and Natural Language Processing (NLP) tools present further complications. Algorithms are typically trained on Standard English corpora from Euro-American contexts, leading to **algorithmic bias**. Bender et al. (2021)have argued that large language models often fail to recognize the nuances of regional dialects or code-mixed inputs, misjudging them as incorrect or unintelligible. As a result, learners from Global South contexts may receive disproportionate “error” feedback, which could demoralize rather than empower them.

The four categories of barriers discussed above are summarized in Table 2, which offers a comparative overview of their manifestations and implications.

**Table 2: Key Barriers to Equity in Digital English Language Learning**

| **Barrier Type** | **Description** | **Examples** | **Key References** |
| --- | --- | --- | --- |
| Access Barriers | Limitations in infrastructure, devices, and connectivity | No smartphone access; irregular internet/electricity; lack of tech support | UNESCO (2021); ASER (2020); Warschauer (2003) |
| Socioeconomic Barriers | Inequalities based on class, gender, geography, and caste | Gendered access to phones; rural-urban divide; caste-linked language marginalization | UNICEF (2022); Tupas & Sercombe, (2014) |
| Cultural-Linguistic Barriers | Language of instruction and the privileging of "standard" English norms | Apps flag local Englishes as errors; lack of multilingual content | Delpit (2006); Akkara et al. (2021) |
| Pedagogical Barriers | Lack of context, absence of teacher mediation, and AI bias | Drill-based learning; no teacher scaffolding; AI penalizing dialects or code-mixing | Freire (1970); Bender et al. (2021) |

### ****4.5 Toward Equity-Aware Design****

Addressing the barriers to equitable digital English learning demands more than just broadening access to technology—it requires a deep and intentional shift toward meaningful inclusion. This involves designing learning materials that are multilingual, context-sensitive, and culturally responsive, rather than relying on a monolingual or standardized English norm. Equally important is the provision of teacher support and community-based training, which can bridge the gap between technological tools and learners’ lived realities. Artificial intelligence and automated feedback systems must also evolve by being trained on diverse varieties of English, including those spoken by marginalized and underrepresented groups, to avoid reproducing linguistic hierarchies. Moreover, participatory design approaches—where learners, teachers, and local communities actively shape how digital tools are developed and deployed—can ensure that educational technologies respond to actual needs rather than imagined ones. Only when these structural, social, and pedagogical dimensions are recognized and addressed can technology genuinely help close, rather than exacerbate, the equity gap in English language education.

## ****5. Case Studies and Field Examples****

This section presents illustrative case studies from India, Africa, and Southeast Asia, highlighting how diverse English learning technologies are deployed across varied socioeconomic and infrastructural contexts. These examples underscore the importance of context-sensitive design, low-tech adaptability, and collaborative governance in promoting equitable access to English language education.

### ****5.1 India: DIKSHA, Hello English, and Mobile Access in Low-Income Schools****

India's multilingual landscape and digital disparities have led to a blend of government-led and private EdTech initiatives aimed at enhancing English language learning.

**DIKSHA** (Digital Infrastructure for Knowledge Sharing) (Ministry of Education Govt. of Education, 2017), which is launched by the Ministry of Education in 2017, serves as a national platform providing curriculum-aligned e-content in multiple languages. A study focusing on Kendriya Vidyalayas (central government schools) found that DIKSHA effectively supported English language teaching and teacher training during the COVID-19 pandemic (World Bank, 2020). However, challenges such as inconsistent internet access and limited digital literacy among teachers and students, especially in rural areas, were noted.

**Hello English**, a mobile application developed by CultureAlley, offers English learning through vernacular languages, making it accessible to a broader demographic. Its gamified approach and offline capabilities have made it particularly popular among learners in low-income and rural settings. Despite these initiatives, a study in Rajasthan revealed that only 11% of rural children accessed online classes regularly during the pandemic, highlighting the persistent digital divide.

### ****5.2 Africa: WhatsApp Groups and Solar Radio-Based English Instruction****

In several African countries, low-tech solutions have been instrumental in delivering English language education, especially in areas with limited infrastructure. During the COVID-19 pandemic, **WhatsApp** emerged as a vital tool for maintaining educational continuity. Teachers in countries like Kenya and Nigeria formed WhatsApp groups to share lesson plans, audio recordings, and assignments. This approach leveraged the widespread availability of basic mobile phones and required minimal data usage. Additionally, organizations like **Lifeline Energy** have distributed solar-powered radios to facilitate distance learning in off-grid communities (UNICEF, 2021). In regions such as South Sudan, educational radio programs broadcast English lessons, enabling learners without internet access to continue their education. These low-tech interventions underscore the importance of adaptability and innovation in addressing educational challenges in resource-constrained environments.

### ****5.3 Southeast Asia: Public-Private Partnerships in Mobile-First EdTech Delivery****

Southeast Asia has witnessed the emergence of public-private partnerships (PPPs) to enhance English language learning through mobile technology. In **Indonesia**, the government collaborated with private EdTech companies to provide mobile-based English learning resources. These partnerships aimed to bridge educational gaps by offering affordable and accessible content to students across the country. A study highlighted that such collaborations improved learning outcomes and increased student engagement. Similarly, in the **Philippines,** initiatives like the “Text2Teach” program combined mobile technology with teacher training to deliver English lessons to remote schools. This approach not only provided students with quality content but also empowered teachers with the necessary skills to integrate technology into their teaching practices.

These examples demonstrate the potential of PPPs in leveraging technology to enhance English language education, especially in regions with high mobile penetration.

### ****Tale 3: Comparative Insights: Public vs. Private Schooling, Rural vs. Urban Contexts****

| **Dimension** | **Private Schools** | **Public Schools** | **Urban Areas** | **Rural Areas** |
| --- | --- | --- | --- | --- |
| Infrastructure | Better devices, internet, maintenance | Often limited infrastructure | Stronger connectivity, power supply | Frequent outages, limited connectivity |
| Personnel | Trained teachers, digital facilitators | Shortage of trained staff | Higher teacher-student tech fluency | Limited digital training |
| EdTech Adoption | Apps, LMS, AI tools widely used | Low-tech or offline tools more common | Greater EdTech penetration | Reliance on alternative delivery modes |
| Pedagogical Design | Personalized, curriculum-aligned | One-size-fits-all, less contextual | Interactive, multimedia resources | Often text-heavy, limited interactivity |

### 6. Towards Techno-Equity: Principles and Policy Recommendations

As the global education sector increasingly embraces digital tools for English language learning, the path forward must not only focus on scaling technology but also on **ensuring equity in access, participation, and outcomes.** This demands a shift from techno-centric enthusiasm to **equity-centered design and policy frameworks.** It is informed by the lived realities of marginalized learners. The following principles and recommendations outline a roadmap for more inclusive and socially responsive EdTech ecosystems.

#### 6.1 Localized, Multilingual, and Inclusive Content Design

One of the foundational requirements for equitable English education through technology is the **creation of multilingual and culturally relevant content**. As Delpit (2006) argues, inclusive pedagogy must validate learners' home languages and cultural knowledge. Many English learning apps and platforms continue to rely on standardized, Western-centric linguistic norms that may alienate learners from rural, indigenous, or non-English dominant contexts (Selwyn, 2016).

To address this, EdTech developers must collaborate with **local educators and linguists** to design content that includes vernacular scaffolding, culturally resonant examples, and regionally specific learning trajectories. Tools like **Hello English** have begun integrating Indian regional languages into English learning, providing one model of this localized approach. Furthermore, incorporating **oral traditions, storytelling, and visual learning** rooted in local practices aligns with Howard Gardner’s (2011) theory of multiple intelligences, offering more diverse entry points for learners.

#### 6.2 Public Infrastructure Investment and Digital Literacy Training

Policy interventions must focus not just on content, but on the broader ecosystem that enables meaningful access. This includes **investments in electricity, internet access, and device availability,** particularly in rural and under-resourced urban areas. As (UNESCO, 2023c) emphasizes, digital equity cannot exist without foundational infrastructure.

Equally critical is **digital literacy training** for students, teachers, and caregivers. Many EdTech solutions presume a baseline familiarity with devices and platforms, which is often absent in low-income or first-generation learner households (Wagner et al., 2005). Governments should fund community-based digital literacy programs, potentially through school hubs, libraries, and local NGOs. These initiatives can help build confidence, reduce intimidation around technology use, and foster intergenerational digital inclusion.

#### 6.3 Partnerships with NGOs, Local Educators, and Community Actors

Top-down policy interventions and market-driven EdTech platforms often fail to reach the most marginalized groups unless **local stakeholders are involved in co-design and delivery**. Partnerships with NGOs, civil society groups, and teacher networks can help identify ground-level needs. It will also help to adapt technologies to context, and provide essential last-mile support (Trucano, 2005).

Examples like **Pratham’s hybrid digital programs in India** and **Bridge International Academies in parts of Africa** show that structured collaborations can increase reach while ensuring a degree of contextual relevance. Additionally, training community educators or “para-teachers” to support learners with technology can create employment while enhancing engagement.

#### 6.4 Equity Audits for EdTech Platforms

To ensure accountability, EdTech platforms should undergo **equity audits**—systematic assessments of how inclusive and accessible their content, user interface, and pedagogical models are. Equity audits for EdTech platforms should assess multiple dimensions of inclusivity. These include evaluating **linguistic representation and potential bias**, ensuring the presence of **accessibility features for learners with disabilities**, assessing the degree of **content localization to regional and cultural contexts**, and examining **user experience under low-bandwidth or limited connectivity conditions.** Together, these criteria help determine whether a platform is truly equitable or simply scalable. Drawing on frameworks like the **Digital Equity Indicators Toolkit** (Jackson et al., 2024), these audits can guide developers to identify blind spots and improve inclusivity. Governments and funding bodies can make such audits a prerequisite for public sector adoption or funding.

#### 6.5 Role of Key Stakeholders

Achieving techno-equity in English language education requires **shared responsibility** across multiple stakeholders. The following diagram throws more light on it.

**Figure 1: Stakeholder’s Role**

As Dewey (1916) noted over a century ago, democracy in education must account for the needs of all learners. In the digital age, this principle must extend to how technologies are imagined, implemented, and evaluated.

### **7**. Conclusion****

As this article has shown, technology holds considerable promise in addressing gaps in English language education — but it is not a solution in itself. Rather, it is a means that must be aligned with principles of **equity, inclusion, and contextual relevance**. The rapid digitalization of learning, especially post-COVID, has led many policymakers and developers to equate access with opportunity. Yet, without critical engagement with **who has access, how that access is structured,** and **what content is delivered**, technology risks reinforcing — rather than reducing — existing social, linguistic, and economic hierarchies.

Digital tools, platforms, and AI-based language models often reflect the assumptions and biases of their creators. English learning apps tend to prioritize standard, globalized English varieties, frequently overlooking regional accents, non-dominant dialects, and the multilingual realities of learners in the Global South. Moreover, learners from marginalized communities may face compounding barriers: from limited infrastructure and low digital literacy to culturally alien content and unmediated, monolingual pedagogy.

To move from mere access to genuine justice, technology must be designed and deployed through an **equity-aware lens**. This means recognizing that educational tools are never neutral; they carry implicit values, expectations, and exclusions. A justice-oriented approach would require developers, educators, policymakers, and international organizations to engage in **participatory design, inclusive content creation**, and **continuous equity audits**. It would also mean recognizing the **agency of learners**, particularly those from underserved communities, in shaping how English is taught, learned, and valued.

Finally, the road ahead must be guided not only by the drive for technological innovation but also by **robust research and policy grounded in social justice.** Studies that document the lived experiences of learners across diverse contexts — from rural India to urban Africa to remote Southeast Asian islands — can help expose blind spots in current EdTech practices. Likewise, policy frameworks must go beyond device distribution or digital dashboards to embed principles of **fairness, representation, and linguistic dignity** at every level.

The future of English language learning lies not in technology alone, but in how we choose to use it — and for whom.

**Disclaimer (Artificial intelligence)**

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Option 2:

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1.

2.

3.

**References:**

Akkara, S., Mallampalli, M. S., & Anumula, V. S. S. (2021). Exposing Rural Indian Students to Mobile Assisted Language Learning: A Case Study. In M. E. Auer & T. Tsiatsos (Eds.), *Internet of Things, Infrastructures and Mobile Applications* (Vol. 1192, pp. 357–366). Springer International Publishing. https://doi.org/10.1007/978-3-030-49932-7\_35

(ASER) Annual Status of Educational Report. (2020). *Annual Status of Education Report: Rural 2020 – Wave 1* (pp. 29–42) [Educational - rural India]. Pratham, Govt. of India. https://img.asercentre.org/docs/ASER%202021/ASER%202020%20wave%201%20-%20v2/nationalfindings.pdf

Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). On the Dangers of Stochastic Parrots: Can Language Models Be Too Big? 🦜. *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency*, 610–623. https://doi.org/10.1145/3442188.3445922

Canagarajah, A. S. (1999). *Resisting Linguistic Imperialism in English Teaching* (3rd ed.). Oxford University Press. https://books.google.com.om/books?id=8RQ\_v9GoHsYC&printsec=frontcover&hl=ar&source=gbs\_ge\_summary\_r&cad=0#v=onepage&q&f=false

Daulay, S. H., Siregar, D. Y., & Sulistia, N. (2023). Hello English Application to Improve the Students’ Speaking Skills. *Edulitics (Education, Literature, and Linguistics) Journal*, *8*(2), 21–28. https://doi.org/10.52166/edulitics.v8i2.4798

Delpit, L. (2006). *Other People’s Children: Cultural Conflict in the Classroom*. New Press. https://www.faculty.umb.edu/lawrence\_blum/courses/CCT627\_10/readings/delpit\_education\_multicultural\_society.pdf

Dewey, J. (1930). *Democracy and education: An introduction to the philosophy of education*. New York: MacMillan. https://archive.org/download/democracyandeduc00deweuoft/democracyandeduc00deweuoft.pdf

Freire, P. (2005). *PEDAGOGY of the OPPRESSED*. continuum. https://envs.ucsc.edu/internships/internship-readings/freire-pedagogy-of-the-oppressed.pdf

Gardner, H. (2011). *Frames of Mind: The Theory of Multiple Intelligences*. Basic Books. https://dspace.sxcjpr.edu.in/jspui/bitstream/123456789/720/1/Howard%20Gardner%20-%20Frames%20of%20Mind\_%20The%20Theory%20of%20Multiple%20Intelligences-Basic%20Books%20%282011%29%20%281%29.pdf

Gbadebo, A. D. (2024). Digital Transformation for Educational Development in Sub-Saharan Africa. *International Journal of Social Science and Religion (IJSSR)*, 397–418. https://doi.org/10.53639/ijssr.v5i3.262

Jackson, J. K., Starr, Ed.D., J., & Weaver, Ph.D., D. (2024). *A Framework for Digital Equity*. Digital Promise. https://doi.org/10.51388/20.500.12265/223

Labadze, L., Grigolia, M., & Machaidze, L. (2023). Role of AI chatbots in education: Systematic literature review. *International Journal of Educational Technology in Higher Education*, *20*(1), 56. https://doi.org/10.1186/s41239-023-00426-1

Lan, M., & Hew, K. F. (2020). Examining learning engagement in MOOCs: A self-determination theoretical perspective using mixed method. *International Journal of Educational Technology in Higher Education*, *17*(1), 7. https://doi.org/10.1186/s41239-020-0179-5

Loewen, S., Crowther, D., Isbell, D. R., Kim, K. M., Maloney, J., Miller, Z. F., & Rawal, H. (2019). Mobile-assisted language learning: A Duolingo case study. *ReCALL*, *31*(3), 293–311. https://doi.org/10.1017/S0958344019000065

Mandala, P., & Pradhan, P. (2024). Innovative Strategies on DIKSHA Portal: An Experimental Study of Impact on Inclusive Student Engagement. *International Journal of Religion*, *5*(10), 1068–1075. https://doi.org/10.61707/hsddgw24

Ministry of Education Govt. of Education. (2017, September 5). *DIKSHA* [Official Website]. Educational. https://pmevidya.education.gov.in/diksha.html

Ministry of Education, Govt. of India. (2022, July 25). *DIKSHA Platform*. https://www.pib.gov.in/PressReleseDetail.aspx?PRID=1844723

Pennycook, A. (2017). *The Cultural Politics of English as an International Language* (Reissue edition). Routledge. https://bayanebartar.org/file-dl/library/Linguistic1/The\_Cultural\_Politics\_of\_English.pdf

Selwyn, N. (2016). *Education and Technology: Key Issues and Debates* (2nd ed.). Bloomsbury Academic.

Trucano, M. (2005). *Knowledge Maps: ICT in Education*. infoDev / World Bank. https://documents1.worldbank.org/curated/en/457411468341334749/pdf/319530WP0REVIS0800PUBLIC0Box379827B.pdf

Tupas, R., & Sercombe, P. (2014). Language, Education and Nation-building in Southeast Asia: An Introduction. In P. Sercombe & R. Tupas (Eds.), *Language, Education and Nation-building* (pp. 1–21). Palgrave Macmillan UK. https://doi.org/10.1057/9781137455536\_1

UNESCO. (2023a). *2023 Global Education Monitoring Report Technology in education: A tool on whose terms?* [Unesco global education monitoring report]. UNESCO. https://gem-report-2023.unesco.org/technology-in-education/

UNESCO. (2023b). *Education in a post-COVID world: Nine ideas for public action* [Dataset]. https://www.unesco.org/en/articles/education-post-covid-world-nine-ideas-public-action

UNESCO. (2023c, September 11). *Reimagining our futures together: A new social contract for education*. https://www.unesco.org/en/articles/reimagining-our-futures-together-new-social-contract-education

UNICEF. (2021). *Radio-based learning gets its day in the sun in Mali* [Dataset]. https://www.unicef.org/stories/radio-based-learning-gets-its-day-sun-mali

UNICEF. (2023). *BRIDGING THE GENDER DIGITAL DIVIDE: Challenges and an Urgent Call for Action for Equitable Digital Skills Development* (p. 50) [Academic]. UNICEF. https://data.unicef.org/wp-content/uploads/2023/05/Bridging-the-Gender-Digital-Divide-1.pdf

Van Dijk, J. A. G. M. (2019). *The Digital Divide*. Polity Press. https://www.researchgate.net/publication/336775102\_The\_Digital\_Divide

Wagner, D. A., Bob Day, Tina James, Robert B. Kozma, Jonathan Miller, & Tim Unwin. (2005). *Monitoring and Evaluation of ICT in Education Projects: A Handbook for Developing Countries*. The International Bank for Reconstruction and Development. https://www.researchgate.net/publication/44837273\_Monitoring\_and\_Evaluation\_of\_ICT\_in\_Education\_Projects\_A\_Handbook\_for\_Developing\_Countries

Warschauer, M. (2003). *Technology and Social Inclusion: Rethinking the Digital Divide*. The MIT Press. https://doi.org/10.7551/mitpress/6699.001.0001

World Bank (Director). (2020, December 18). *DIKSHA: Transforming India’s School Education* [Video recording]. https://www.worldbank.org/en/news/feature/2020/12/18/digital-infrastructure-for-education-in-post-covid-environment-india-africa-knowledge-exchange-series