



Citation for published version:

Smith, MD 2022, 'Rejecting instrumental-deterministic CALL: Towards a critical reading of power in online English education', *Power and Education*, vol. 14, no. 1, pp. 50-65. <https://doi.org/10.1177/17577438211058964>

DOI:

[10.1177/17577438211058964](https://doi.org/10.1177/17577438211058964)

Publication date:

2022

Document Version

Peer reviewed version

[Link to publication](#)

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Rejecting Instrumental-Deterministic CALL: Towards a Critical Reading of Power in Online English Education

Abstract: As online education expands in the wake of recent global events, concerns over the privileging of dominant languages, cultures, and epistemologies gain prominence. Despite the explicit biases and assumptions found within hegemonic learning contexts, however, inquiry within the domain of computer-assisted language learning (CALL) typically manifests via decontextualised interpretations. Consequently, this inquiry aims to contribute to the theoretical expansion of digital education by situating CALL within Feenberg's (2017) critical theory of technology (CTT). In doing so, it intends to answer calls for the engagement of CTT to question instrumental and deterministic accounts of digital English language learning (ELL) and expose the subtle influences that impact the transmission of English within the online space. This inquiry finds that digital ELL obfuscates alternative epistemological and linguistic contexts, with the prevalence of English native speakerism presupposing dominion over subaltern cultures. Practitioners should thus moderate the temptation to draw on "euphoric" conceptualisations of CALL, with specific reference to exaggerated visions of egalitarian participation structures and the across-the-board beneficial impact of digital practices on learner engagement. Finally, not all uses of English hold equal power and status, with graduated degrees of access to technological and linguistic capital driving a circular system of socio-economic reproduction.

Keywords: CALL; EFL; ELL; Critical Theory of Technology

Smith, M. D. (2022). Rejecting instrumental-deterministic CALL: Towards a critical reading of power in online English education. *Power and Education*. Advance online publication. <https://doi.org/10.1177/17577438211058964>

Introduction

Technology increasingly mediates the conditions by which users generate and transfer information, establishing novel modes of interaction and communication. Educational technologies, therefore, are not hermetically sealed from politics and ideology; they serve to configure and reproduce conceptualisations of meaning and the self, the organisation of social systems and structures, and the spread of dominant epistemologies, "redefining notions of private and public space, while privileging and marginalising ideas, cultures, and people" (Darvin, 2017: p. 17). Thus, as the scope of digital education expands in the wake of COVID-19, understanding the impact of technology-assisted pedagogies on the lives of learners becomes ever more urgent.

For example, an examination of the “differentiated, situated, and enculturated ways in which digital practices happen” (Snyder and Prinsloo, 2007: p. 173) is required to assess how power manifests within the digital space, and the limitations and opportunities that educational technologies occasion for the socially just dissemination of information. This process is perhaps no more pertinent than in the field of applied linguistics, where Internet-driven computer-mediated communication (CMC) has transformed established mechanisms for the representation, organisation, and transmission of language and, consequently, enculturated knowledge. Indeed, the technological and pedagogical developments tied to computer-assisted language learning (CALL)—defined by Smith and McCurrach (2021) as the use of digital technologies within foreign language acquisition contexts—have generated normative practices and orthodoxies, exerting a meaningful impact on diverse sociolinguistic contexts (Darvin, 2017).

Increased access to online resources has occasioned ample opportunities to acquire English as a foreign language (EFL). Given the language’s hegemonic positionality (Phillipson, 2010; Smith, 2019), debates surrounding its spread often parallel the social, political, and ideological critiques of technology usage. De Beaugrande (1999), for instance, argues that the positivised emphasis on English language learning (ELL) as a universal agent of transnational communication and economic expansion presents the language as “an objective fact that will inevitably lead to an all-inclusive, worldwide communication transcending national division or boundaries” (p. 116). Such deterministic understandings of English spread not only assume “a connection between English skills and national and individual economic benefits” (Kubota, 2011: p. 251) but serve to depict the language as a neutral instrument of progress, thereby neglecting anxieties over the preservation of linguistic ecologies (Skutnabb-Kangas, 2000).

Contemporary interpretations of CALL-driven EFL acquisition, concordant with the deterministic-instrumental positions traditionally explaining the dissemination of technology and English alike (Phillipson, 1992; Warschauer, 1998), neglect to rationalise the prescriptive norms that regulate digitally-mediated pedagogy. As a result, this inquiry calls upon Feenberg’s (1991) *critical theory of*

technology (CTT), arguing that the artefacts, activities, and conditions associated with CALL “materialise in socially determined ways depending on the contexts, people and practices involved” (Grimes and Feenberg, 2013: p. 123). In this regard, CALL exerts normative implications necessitating appraisal, including issues of dominance and inequity facilitated through enduring hierarchical structures. In observing the multiple dialectics of power regulating digital language learning ecologies, this investigation seeks to recognise the “privileging and marginalisation of languages, identities, and forms of knowledge” (Darvin, 2016: p. 534). More pointedly, in actively rejecting the de-socialised and de-historicised instrumental-deterministic positions, this study draws upon subaltern readings of CALL, encompassing interrelated accounts per the social conceptualisation of technologies proposed by Lievrouw and Livingstone (2006), summarised here by Selwyn (2017: p. 9):

“*artefacts and devices*⁴: the technology itself and how it is designed and made.”

“*activities and practices*: what people do with technologies.”

“*context*: social arrangements and organisational forms that surround the use of technologies.”

As noted by Selwyn (2017), Lievrouw and Livingstone’s model is useful insofar as it highlights the “unexpected and unintended consequences” of technology, “especially when used in education” (p. 10). For instance, in focusing on *artefacts and devices*, one may better discern how physical technologies are structured and reinforced through dominant epistemologies. With regards to *activities and practices*, meanwhile, an understanding of human interactions with and through technology draws our gaze towards “issues ranging from specific instances of individuals using digital technology to learn something, to the wider economic, political and commercial structures that underpin these issues” (Selwyn, 2017, p. 171)—thereby bringing the issues of *personal agency* and *engagement* into focus. Finally, a consideration of

context highlights the (often surreptitious and routinely inequitable) macro-level forces driving technological participation structures within the meso-and-micro-level domains of education.

The pluralistic bricolage presented here intends a comprehensive account of the “technological, social, political, and economic” (Lievrouw and Livingstone, 2006: p. 2) precedents contributing to the digital spread of English. As noted by Chapelle (2000), Belz (2002), and Cutrim Schmid (2006), the body of socio-cultural CALL enquiry remains underdeveloped, with CTT often overlooked in favour of alternative paradigms. Nevertheless, in utilising Feenberg’s premise to target the social features of technology described here, it is hoped that, through emphasising perspectives typically neglected by decontextualised accounts, this inquiry inspires reflective practice amongst CALL practitioners. More pointedly, it intends to answer the comparatively unheeded calls by Warschauer (1998) for the employment of CTT to expose the subtle influences that impact language acquisition within the digital space.

Theoretical Lens: Feenberg’s Critical Theory of Technology

CTT posits that technological innovation intertwines with the historical, social, and political structures which it both serves and frames; thus, the artefacts and conditions which it produces should be interpreted neither in terms of neutrality nor as “embodying a singular [deterministic] essence” (Grimes and Feenberg, 2013: p. 121). Such visions decontextualise technologies, extracting them from their cultural-historical embeddedness and the processes by which they shape, *and are shaped by*, their environment. Indeed, Feenberg (1991) notes that, in contrast to a reductionist faith in determinism, wherein predestined results materialise through technology’s *autonomous* logic, technological artefacts, activities, and contexts are arranged and formatted per human agency. Moreover, in keeping with the ideologies and power structures driving their historical development, they cannot be utilised without human consequence—ergo, nor is technology a neutral *instrument*.

CTT rejects the widely circulated instrumental-deterministic fallacies, calling on Marcuse's substantivist reading of critical theory to interpret technology as a "scene of struggle", "social battlefield", and a "parliament of things" (Feenberg, 2002: p. 15) in which socio-historic values, biases, and structures of power converge to both produce and continuously reconfigure the processes by which technology is designed and appropriated. Thus, while technologies concretise under intersecting contexts, they also exert broader prescriptive ramifications. In this regard, Feenberg's (1992) concept of *technical code*, which attempts to account for the veiled expectations and standards that manifest within the design of technologies, helps us uncover the mechanisms impelling digital ELL. Crucially, the technical codes of artefacts and devices "remain largely unnoticed until examined explicitly" (Flanagin et al., 2000: p. 411), often evolving in direct response to regional, cultural, legislative, or economic requirements. Technical code manifests through a continuous process of human interaction; Feenberg's premise thereby represents a "valuable analytical device to make social and cultural values and priorities explicit" (Flanagin et al., 2000: p. 412).

Disempowered social groups frequently struggle to affect the structures governing technological design. Accordingly, CTT understands technology as "not a thing in the ordinary sense of the term, but an ambivalent process of development suspended between different possibilities" (Feenberg, 1991: p. 14). Given the presence of historical bias, Cutrim Schmid (2006) notes that it is "impossible to evaluate technology use in a social vacuum" (p. 51). CTT rejects this fallacy, extending the anti-instrumental and anti-deterministic interpretations by offering a substantivist-constructivist model (Grimes and Feenberg, 2013) predicated on reconstituting the "technosystem" (Feenberg, 2017) via democratic interventions. In doing so, CTT recognises the negotiability of technology, holding that it is to some extent controllable while also conforming with the critical interpretation that it remains value-laden.

Critical Perspectives of Global English and the Applicability of CTT to Online ELL

The unprecedented dissemination of English globally has provoked intense debate within the sphere of foreign language education. Far from being a neutral vehicle of intercultural communication, Phillipson (2010) interprets the transnational status of English in terms of *linguistic imperialism*, or “the dominance of English asserted and maintained by the establishment and continuous reconstitution of structural and cultural inequalities between English and other languages” (Phillipson, 1992: p. 47). In this regard, EFL represents the nucleus of a global process of neoliberal hegemony, in which the economically and linguistically privileged Anglospheric *Centre* (or *inner-circle*) holds dominion over *Periphery* EFL cultures. From this perspective, linguistic imperialism draws attention to a complot system of socio-economic hegemony reinforcing Western dominance. Crucially, English is interpreted as facilitating Centrist neocolonial activities, intersecting with asymmetrical structures in terms of culture and economy that are endorsed and justified by partisan native speakers of English and Periphery ELL consumers alike via the latter’s assimilation into (and subsequent dissemination of) Anglospheric cultural norms. In expediting this process, linguistic imperialism theory recognises Periphery élites as context-specific Centres, leading Phillipson (1992) to posit that hegemony of global English generates within the inner circle, yet is absorbed and strengthened by local agents throughout the Periphery.

Following analogous interpretations of technology, opposing accounts of EFL imperialism routinely take an instrumentalist or deterministic perspective, such as Crystal’s (2003) prediction of a neutral “English language family” (p. 179). As noted by Pennycook (2017), advocates of global English often consider EFL as “natural, neutral, and beneficial” (p. 9). Natural in the sense that, while critical reference to the neocolonial positionality of English exists, the language is routinely described as being compelled by *inevitable* global forces—i.e. American hegemony through the neoliberal economic paradigm. Moreover, EFL is erroneously viewed as neutral as, once the language transcends the inner circle, it is expected to evolve into a de-historicised and decontextualised vehicle for transcultural communication. Finally, English is universally “beneficial” due to its utility as a mechanism for transnational

communication and economic growth (Pennycook, 2017: p. 253)—disregarding the concern that this process does not occur on a universally equitable basis.

Calling to mind the philosophical foundations of CTT, it is apparent that Feenberg’s rejection of instrumental and deterministic readings of technology exposes an intersection between the dissemination of English and digital language education alike. Instrumentalism, for example, establishes an artificial divide between CALL, its learners, practitioners, and designers through a fallacious vision of social agents exploiting linguistic and technological “tools” irrespective of context, wherein “language, learning, and the learner are all seen as unchanged by the introduction of new technologies” (Waschauer, 1998: p. 758). Meanwhile, the deterministic view extends the neutrality of technology, eschewing human control to hold an autonomous logic of growth. Here, CALL is an immutable force that conforms learning systems (and the learning generated within these systems) to its imperatives. Thus, “the computer is seen as an all-powerful machine that in and of itself produces certain determined results” (Cutrim Schmid, 2006: p. 51).

CALL Artefacts and Devices: The Internet and Technical Code

When evaluating the technologies facilitating digital language education, it is evident that the Internet constitutes a radical paradigm shift in terms of accessibility to English. Following Smith and McCurrach (2021), online-integrated CALL networks are believed to enhance CMC, “acting as a vehicle for dynamic socio-cultural learning by fostering communication and interactivity between local and global learners” (p. 87). From this instrumental position, Internet-driven (or *integrative*) CALL represents a utilitarian intermediary for ELF-based intercultural contact and linguistic input. However, far from being a “neutral” instrument of cross-cultural exchange, the technical code of the Internet is the product of a complex and multifaceted interaction between the drive for technological development and the interests of various communities, organisations, and agendas. In such circumstances, integrative CALL manifests via

implicit “assumptions, values, and norms” (Flanagin et al., 2000: p. 410), which variously serve to privilege and disempower certain users.

Digital education reflects the values and suppositions inherent to its design; more critically, “the technical configuration of the internet strengthens a sociolinguistic order, enhancing the symbolic ‘value’ (i.e. linguistic capital) of English compared to alternative languages and cultures” (Smith, 2021). From this perspective, the protocols that govern the online transmission of English occur as a direct result of inner-circle interests. For example, the Internet was initially conceived and developed by the United States Department of Defense (Campbell et al., 2011). The creation of the world-wide-web, meanwhile, is customarily associated with the British engineer, Tim Berners-Lee, who ensured that the standard Uniform Resource Locator (URL) reference system employed the Latin script via the American Standard Code for Information Interchange (ASCII) character set.

While recent standardisation initiatives have witnessed universalised alternatives, including the Internationalized Domain Name (IDN) standard, the comparatively limited ASCII format remains the preferred medium for character encoding. Still, its complete character set of 256 “falls far short of the 7,000 characters needed for modern Japanese or the 15,000 that Taiwanese authorities have stated a preference for” (Jordan, 2001: p. 5). Exchanges between technical arrangement and the social forces driving Internet design thereby result in English emerging, by intention, as *the* intermediary for digital communication; a bias that has “strongly influenced who has been able to access the Internet, what materials are published there, and what broader social systems and structures are privileged” (Warschauer, 2003: p. 203).

In keeping with the Foucauldian reading of pervasive power, such decisions are hegemonic when they function to obstruct alternative resources, epistemologies, or forms of learning. From this perspective, the Internet represents a semiotic structure in which “technologies and practices generate power through materials and objects as well as through human actions and meaning-making” (Hinkelman and Gruba, 2012:

p. 47). Indeed, a case study by Hinkleman and Gruba (2012) detailing the power dynamics manifesting within a Japanese blended learning EFL program revealed the cruciality of location, teaching material design, and *the design of software* to “both *how*ⁱⁱ teachers and students learned and *what* they learned” (p. 60). Still, while the underlying structure of the Internet serves to privilege the learning of English—and thus, *English speakers*—over alternative languages, it should also be noted that its Anglosphere-driven technical code holds *the potential* to mediate inclusive values and norms.

To be specific, the Internet reflects inner-circle influence via its emphasis on outwardly democratic ideals, such as “access to and relatively open sharing of diverse information, flexible capabilities that accommodate a variety of uses, and formal and informal policies that support decentralised control, free-market economics, and freedom of speech” (Flanagin et al., 2000: p. 421). The societal context that guided the development of the Internet thereby holds the potential to mobilise comparatively liberalised movements, albeit via embedded Western (and, thus, decidedly *neoliberal*) parameters. Indeed, Milberry (2012) notes that, while neoliberal interests “are literally designed into the technology itself” (p. 111), the Internet may aid progressive activism and global justice, describing how hacktivists redeployed wiki-based educational software “to facilitate movement goals—by creating a public space for online collaboration, and by challenging inherent power inequities reflected in the broader society” (p. 126). While this process remains epistemologically hegemonic, it is improbable that such affordances would materialise if the development of the Internet had occurred in an autocratic context subjected to stringent top-down control.

Moderating these freedoms are restrictions generated via the technical code of the online space: chiefly, linguistic stratification and the unequal circulation of knowledge. Predictably, English-medium interactions dominate the online discourse, with Clement (2019) reporting that 25.2% of global Internet users employ the language as their principal means of communication; additionally, Charlton (2018) notes that English is the primary language of 52.9% of the top 10 million websites. Converse to the instrumental reading, these statistics emphasise that a large proportion of online information continues to be influenced

by Anglospheric context; “hence, it is impossible to talk about politically, culturally, and socially neutral knowledge” (Isik, 2008: p. 125).

The dominance of English online manifests per an implicit logic regarding the value and classification of knowledge. Namely, the disproportionate level of English-medium material provided by Internet search engines and exploratory CALL activities limits the circulation of Periphery-originating epistemologies, guiding users to dominant, Western conceptualisations of reality via the “systematic filtering of knowledge” (Darvin, 2017: p. 22). In doing so, the online space represents an authoritative political and semantic intervention; thus, “technology, on this account, can never be neutral; rather it tends to reinforce and reproduce prevailing socio-economic power structures” (Milberry, 2012: p. 112). Additionally, despite the global scope of English language varieties, Crystal (2006) notes that “it is unusual to see material on the Net written in non-standard English” (p. 84). Inner-circle “Standard” English thereby functions to restrict not only alternative languages and knowledge but alternative *Englishes*. Thus, Internet-mediated ELL manifests through linguistic prescriptivism, whereby semiotic structures implicitly advocate a singular, dominant form of the language to the apparent exclusion of emerging or new Englishes and, more significantly, the sociolinguistic needs of diverse global communities.

As stressed by Skutnabb-Kangas and May (2017), the maintenance of emerging or minority language variations is “important for both individual and collective identity reasons, as well as for issues of social justice and inclusion” (p. 128). The dominance of “Standard” English online, emerging via a semiotic-metonymic association with native speakerism, serves to enhance a prestige code by which Periphery varieties are, by implication, indexed as non-orthodox. Thus, the social constraints placed on emerging Englishes by Anglospheric standards concomitantly limits inter and intra-cultural linguistic human rightsⁱⁱⁱ alike (Skutnabb-Kangas, 2000). Indeed, in researching the Azerbaijani CALL context, Preuss and Morway (2012) describe the hegemonic position of English digitally, noting “the increased use of and reliance/insistence on English can be both a way of maintaining hegemony and a way of struggling

against it” (p.88), with case study findings indicating the cruciality of teaching learners “to be critical consumers of information” (Preuss and Morway, 2012: p. 97).

Calling on the example of Singapore, a study by Chen et al. (2010) details the absence of CALL systems drawing upon local linguistic standards. Specifically, non-contextual CALL platforms fail to meet the auditory-lexical conventions of Singaporean learners, with the authors noting “systems developed to train users to speak with an American or British pronunciation may not be acceptable to users” (Chen et al., 2010: p. 1). Nevertheless, there remains a steadfast demand for pronunciation to conform to US/UK conventions—a process tied directly to neoliberal interests; or the ideological convergence of orthodox English and “Singapore’s continued economic competitiveness, particularly in a global economy” (Wee, 2005: p. 57). The dependence on inner-circle technological and linguistic systems actively restricts the normalisation of new or emerging varieties of English amongst speech communities. This process of sociolinguistic assimilation occurs through an association between “Standard” English and institutional contexts—such as education, commerce, and government—and a simultaneous devaluing of emerging Englishes acquired within domestic settings (Phillipson, 1992). Attempts to increase the usage of local varieties within digital status domains, such as CALL platforms, information search engines, and websites, therefore appear increasingly unlikely (Wee, 2005).

Given the Internet’s inner-circle technical code and, in keeping with the neo-colonial critiques of ELF related previously (Phillipson, 1992; Skutnabb-Kangas, 2017), one must question the widely-held assumption that English represents a globally inclusive “tool”, responsive to the sociolinguistic requirements—and *linguistic human rights*—of diverse cultures and learners. Indeed, the default setting and of inner-circle English within digitally-mediated general and linguistic knowledge acquisition actively “steer[s] users to a set of normative behaviours and meanings, indoctrinating users into social practices that are technologised around digital tools” (Darvin, 2017: p. 22). Nevertheless, how might online-based practice foster a more culturally just learning environment? Feenberg (2004) calls for “a broadly constituted

democratic technical alliance” encompassing consumers, practitioners, and independent experts to resist harmful technological designs and practices from the outset. While the genie is certainly out of the bottle with regards to online technical code; the point remains that “each of the many facets of the problems caused by technology are salient for one or another group” (Feenberg, 2004)—thus, only together can actors bring rational boundaries to bear on future practice. In this regard, the democratisation of technological design reflects the Foucauldian correlation of power and resistance to dominant institutions, wherein subaltern groups manoeuvre together with allies, improvising micropolitical challenges against technological *regimes of truth*.

The promotion of emerging Englishes via localised CALL ecologies remains preferable; such conditions are nevertheless improbable due to the semiotic association between “Standard” English, economic prosperity, and the supposed “trickle-down” benefits found within neoliberal markets. Additionally, while the drive for linguistic human rights gains prominence (Wee, 2005; Skutnabb-Kangas, 2017), there remains a dearth of studies covering the restrictive impact of CALL on emerging Englishes and the rights of impacted speech communities. Hinkelman and Gruba (2012) support this inference, noting that CALL inquiry “has been criticised for a focus on narrow investigations of single-package solutions and analysis within decontextualised settings” (p. 46). Thus, CALL research must redouble its efforts to highlight diverse linguistic-technological practices and systems to incite broader support for emerging paradigms within the online space.

CALL Activities and Practices: Tempering Euphoric Visions of Participation and Interaction

Following the socio-cultural interpretation of technology offered by Lievrouw and Livingstone (as cited in Selwyn, 2017), the concepts of “human interaction” and “identity” (p. 9) emerge as fundamental drivers of CALL praxis. Colpitts and Past (2019) note that “advances in technology have made it much easier for learners to interact with each other” (p. 24), while instrumental depictions of CALL (e.g., Yang,

2010; Webb and Doman, 2019) understand digital spaces as a neutral site of egalitarian peer interaction, cultural exchange, and autonomously-driven language acquisition; or, as succinctly defined by Kramsch and Thorne (2002), “a utopian middle landscape, where native speakers and nonnative speakers can have access to one another as linguistic entities on a screen, unfettered by historical, geographical, national or institutional identities” (p. 85).

Helm (2017) challenges the deterministic assumption that CMC-mediated intercultural learning will “automatically result from the contact and interaction with distant ‘others’” (p. 222), emphasising the obstacles, tensions, and failures faced by researchers and practitioners when attempting to facilitate cross-cultural activities. During an explanatory case study into German-American telecollaborative exchange, for example, Belz (2002) reported culturally normalised perceptions of institutional parameters, participation structures, and discourse resulted in a perceived lack of learning amongst both groups. More pertinently, integrative CALL activities utilised during the study occasioned a “clash of cultural faultlines”, or “things about the other they don’t understand” (Belz, 2002: p. 76), that led to a deterioration in communication and the generation of cultural stereotypes amongst both sets of participants.

The deterministic insistence on CMC automatically inducing understanding and equality neglects to account for the micro-and-macro-level contexts that intertwine during integrative CALL activities—including social and educational settings, situated activities, and individual agency. Indeed, O’Dowd and Ritter’s (2006) investigation into failed CMC interventions emphasises their importance, whereby the authors reported “individual, classroom, socio-institutional, and interaction[al]” (p. 623) factors as primary contributors to failed telecollaborative partnerships. While a combination of these interconnected elements often drives failure, dysfunctions on the socio-institutional and interactional levels, in particular, present noticeable barriers to cross-cultural CMC. Specifically, “the misunderstandings and tension which arise from cultural differences in communicative style and behaviour” (O’Dowd and Ritter, 2006: p. 634) inhibit learners from engaging in more reflective interactions or circumventing the assumption that “peculiarities

in their interlocutors' way of communicating are due to personal oddities while, in reality, they are part of the target culture's communicative style" (O'Dowd and Ritter, 2006: p. 634).

Ortega and Zyzik (2008) support the tempering of euphoric representations of CALL-induced participation and productivity, noting that the view of "CMC as an equaliser of communication and a panacea for L2 practice" (p. 333) is widespread in integrative CALL research. Additionally, the authors actively contest the representation of such claims as automatically generated. Indeed, there is a growing body of inquiry that contests the across-the-board beneficial impact of CALL on engagement, with Jeon-Ellis, Debski, and Wigglesworth (2005) reporting that "personal relationships, preferences, and motivations" (p. 121) mediate contributions to online ELL activities. In particular, the authors note greater participation for some language learners occurs, at times, to the immediate exclusion of others, warning that affective factors, personality differences, and group dynamics must be "very carefully handled if [the activity] is intended to enhance goal-oriented interaction in the target language and language learning" (p. 142).

Further, a multidisciplinary case study by Reeder et al. (2005) found that, rather than nullifying power differentials, digital ELF interactions often *preserve* stratification amongst culturally diverse participants. In particular, the authors found that First Nation Canadian learners were three times less likely to contribute to online tasks than their European Canadian and international peers. More tellingly, however, the authors reported that Native Canadian participants were unwilling to initiate public contact with learning facilitators, potentially due to culturally shaped expectations towards hierarchy, individuality, and open communication. The authors posit that "the interaction of communicative style with status and power relations in our course resulted in our aboriginal participants' unwillingness to confer specifically with authorities online because of the discussion forums' public nature" (Reeder et al., 2005: p. 99). The structure of this intervention, therefore, contested normalised "participant structures, or contexts for verbal participation" (Reeder et al., 2005: p. 99) amongst minority cultures.

In such cases, euphoric interpretations of networked language learning and communication risk obfuscating significant cultural drivers and participation structures. The findings of this particular case study draw attention to the potential for digitally-mediated ELL activities to be framed in the language and norms of *authority* (in this instance, inner circle educational practitioners) that, rather than promote learner equality, indirectly reinforce the coordinates of their power. Indeed, “those who engage in teaching/researching English through CALL are also legitimate objects for critical scrutiny. They both resist and impose forms of hegemony” (Preuss and Morway, 2012: p. 87). This unintended maintenance of inequity is outlined further by Jordan (2001), who, while not invoking CTT, technical code, or criticisms of global English specifically, asserts:

There are conditions that structure participation in cyberculture because only certain languages and certain cultural norms of communication are embedded in cyberspace’s technology. Here language is limited, cultural resources specific and the politics of cyberculture is moulded in cyberspace’s technological history. (p. 2)

The assumption that dialogic participation is central to egalitarian, digitally-mediated intercultural language exchange remains ethnocentric, strengthening the conclusion that integrative CALL’s technical code interlaces with inner-circle epistemologies. Specifically, Burbles (2006) reports their distrust in the Western-centred “canonisation of dialogue as a pedagogical ideal” (p. 107), noting that “dialogical methods can be hectoring, manipulative, and tacitly authoritarian, even given the best of intentions” (p. 108). Indeed, the emphasis on dialogue over silence fails to account for the possibility that “some silences may be culturally or situationally positive” (Ortega and Zyzik, 2008: p. 335). Bista (2012), for instance, asserts that, far from being non-participatory, silence within East Asian cultures is rooted in Confucian-based socio-educative norms, with learners perceiving it as both a required learning condition and a means of demonstrating “their ability to listen effectively” and “self-control or respect” (p. 80). More pertinently, the

value placed on dialogic interaction during integrative CALL activities may misinterpret non-participation with the possibility that “students who are silent do not have enough linguistic proficiency to express their thoughts and opinions with clarity” (Bista, 2012: p. 80).

The contexts and case studies described here lend credence to the assertion that CALL facilitates a digital hierarchy based upon “the linguistic and communication norms of Anglo-American societies in which the aggressive, competitive individual is enshrined” (Jordan, 2001: p. 13). Indeed, Reeder et al. (2005) note that “a course carefully designed and structured to require learners to initiate communications with peers and with facilitators highlights the possibility that culturally-shaped perceptions of teacher-learner power dynamics influence learner interactions online” (p. 9). With the inner circle-dominant monocultural understanding of online ELL in mind, Ortega and Zyzik (2008) are justified in questioning the “idyllic view, an unshakable assumption that collaborative projects necessarily result in the learning of cultural content, better knowledge of L2 pragmatics, and enhanced cultural understanding” (p. 336).

The limited attention paid by instrumental-deterministic readings to the intricacies of CALL practice suggests that the medium is viewed through a lens of cultural reductionism. To be specific, explanations assuming the certainty of culturally neutral involvement, or the engendering of intercultural and linguistic uptake as a result of online EFL participation, fail to account fully for “the multiple forms of online-mediated activity; the contexts of their creation, development, uses, and transformations; and their mediating effect” (Helm, 2017: p. 226). With this understanding in mind, the extent to which integrative CALL practices reflect Western-dominant criteria for intercultural communication underscores the belief that the online space does not escape the inequities of the physical world.

CALL Context: Social Capital, Social Exclusion

The inherently deterministic neoliberal representation of English and technology as automatic-synergetic inputs into economic growth, social development (Isik, 2008) and “opportunities to enhance

educational systems, improve policy formation and execution, and widen the range of opportunities for business and the poor” (The World Bank, 1998: p. 1), rest upon the conversion of cultural capital between its various states^{iv} (Bourdieu, 1986). Thus, in considering the “social arrangements or organisational forms” (Lievrouw and Livingstone, 2006: p. 2) anchored to CALL-driven EFL acquisition—and, more broadly, digital interactions throughout the Periphery—it is undeniable that *access* provides a critical point of discussion spanning the social, economic, and political contexts.

Warschauer (2003), however, rejects the simplistic, binary interpretation of the *digital divide*, arguing that the societal partition between “information haves and have-nots” presents “a gradation based on different degrees of access to information technology” (p. 6). Subsequently, the *social inclusion* terminology posited by Warschauer (2003) resides within the intersection between digital practice and integration, seeking to reorient the debate surrounding access to technology “from one that focuses on gaps to be overcome by the provision of equipment to one that focuses on social development issues to be addressed through the effective integration of ICT into communities, institutions, and societies” (Warschauer, 2003: p. 9).

The initial dualistic interpretation of digital EFL access evolves to incorporate the social and human consequences that develop beyond the immediate presence of technology, with CALL holding the potential to deliver vastly different outcomes, depending on the context in which it is—or is not—employed. Inequities cease to be viewed in terms of simple access to technology and language, focusing on discourse which “respond[s] to issues and requirements that are meaningful and significant in the daily lives of individual users within their communities” (Gursten, 2003: p. 34). The intent of this reorientation, therefore, is not to de-emphasise the existence of stratification but to *expand* the social parameters by which access is interpreted within the context of social inclusion. A case study detailing technological stratification in the Global South, for instance, found that “developing countries face not only lack of technology but also endure environmental and social difficulties” (Lorenz et al., 2015: p. 688), such as the lack of funding and

classroom overpopulation, that thwart institutional and practitioner efforts for “equity in educational experiences” (Lorenz et al., 2015: p. 687).

Indeed, despite an ideological connection between individual effort and meritocratic reward, the value of one’s institutional and social capitals to success in the neoliberal market order is profound. In this regard, social capital is determined by one’s networked connections—including parents and, indeed, CALL practitioners (Lorenz et al., 2015)—inhering “in the structure of the relations between actors and among actors” (Coleman, 1988: p. S98). The degree of access to digital ELL derived from social capital represents a “shift factor” (Serageldin and Grootaert, 2000: p. 54), broadly impacting other inputs on account of its capacity to strengthen the respective gains of investment in education. In essence, this process facilitates cultural-to-economic capital conversion via desirable academic qualifications—such as (often digitally administered) standardised English language test scores—and professional competencies, which enable the accumulation and hereditary transference of social and economic capital. Accordingly, digital ELL mirrors and is supportive of what Kingston (2001) terms “the cultural orientation of the dominant class” (p. 89).

As noted by Yaman (2015), contact with integrative CALL is often reliant on a learner’s socio-economic status and social network, with access factors including “buying a computer for your child because it is a general expectation in your community that children should have access to computers” (Warschauer, 2003: p. 156). In the above situation, the technologically advantaged language learner may exploit their device to decipher unfamiliar lexical items almost instantaneously. At the same time, a socio-economically disadvantaged peer may be forced to employ physical, paper-based learning aids, the use of which is comparatively time-consuming. Consequently, the former student is allowed to enhance a desirable academic and vocational skill (i.e., institutional cultural capital) due, in no small part, to their social network. While elementary, this example reinforces the belief that divisions in digital EFL competency often reflect a graduated process of social and digital stratification.

Additionally, inner circle-orientated neoliberal ideologies strengthen the connection between online English and socio-economic development within the Global South (Lorenz et al., 2015), presenting UK/US-standard ELL credentialism as a “major criterion in education, employment and job-performance evaluation” (Song, 2011: p. 35). As noted by Rice and Haythornthwaite (2017), labour markets demonstrate a preference for social actors “with current or prior access to, experience with, and skills necessary for using communication networks” (p. 93). Consistent with Wee’s (2005) case study of Singaporean CALL and, more broadly, the technical code of the Internet, it is apparent that command of dominant English language varieties is one such skill, resulting in the sum, as well as qualities, of an actor’s institutional and social capitals constituting a significant factor in optimising digital ELL within supposedly “meritocratic” systems of neoliberal reward.

In this context, cultural capital tied to English supports and maintains the near-universal presence of ELL within Periphery language education. Nevertheless, many social actors in developing settings cannot attend secondary or tertiary-level institutions due to factors including gender, the opportunity cost of schooling, institutional effectiveness, and the relevance of instructional content (Chimombo, 2005; Lorenz et al., 2015). The most reliable pathway to EFL competency within such locales is often private education. Consequently, “with knowledge of English a requirement for access to many professions and university programs, English becomes one more barrier to equal opportunity for the poor” (Warschauer, 2003: p. 96). While CALL represents a long-term, cost-effective language acquisition measure, attaining the devices and level of instruction requisite for digital ELL remains difficult, lending credence to Vartanova and Acharya’s (2017) conclusion that digital access continues to be impacted by socio-cultural and socio-economic factors.

Further, in developing or economically disadvantaged locales, the process of English acquisition often occurs at the direct expense of minority languages, some of which may hold official or protected status. Rana’s (2018) case study of EFL in Nepal, for example, highlights local fears of native identity

degradation amid rising cross-linguistic tensions and the “the rapid development of modern digital technology” (p. 43). Indeed, the presence of digital content may inhibit digital and linguistic efficiency amongst learners unexposed to contextually significant lexical items, since “concepts related to technology are of English origin and many other languages, particularly less spoken ones, do not have their equivalent” (Yaman, 2015: p. 769). Thus, access requires a requisite degree of economically dependent EFL competency if the learner is to circumvent a cognitively challenging process of translation, the result of which is a “mounting digital divide again for less educated and those with a lower socio-economic status” (Yaman, 2015: p. 769).

Given the context described here, it may be posited that integrative CALL embodies “the discursive authority of predetermined meritocracy, reinforced on the institutional and ideological levels by the hereditary transmission of economic, social, and cultural capital” (Smith, 2019: p. 13). Not all uses of digital ELL hold equal power and status, with access to technology and varieties of English driving a neoliberal system of social reproduction (Bourdieu, 1986). Thus, if learners are to ultimately “enter new communities, address meaningful problems, and create authentic works” (Tate and Warschauer, 2017: p. 51), it is crucial that the differentiated social structures derived from integrative CALL receive critical acknowledgement.

Conclusions & Recommendations for Future Practice

The currently dominant instrumental-deterministic paradigms dominating much of digital language learning research frequently work to disregard social anxieties regarding the design and application of technology. The utilisation of CTT as an analytical lens is valuable given its utility in communicating the subtle pressures that guide digital EFL and the positionality of English and CALL alike within the socio-political order. Given the findings presented here, it is suggested that future analyses into CALL consider several overlapping concerns. For example, digital ELF is often interpreted as a neutral

vehicle for intercultural communication; yet, when situated in the hegemonic reading of technology described here, it is apparent that English represents a semiotic structure in which inner-circle conceptualisations frequently obfuscate alternative knowledge, tongues, and emerging varieties. The prevalence of ELF within the digital space, therefore, presupposes dominion over Periphery norms via its suppression of indigenous “modes of interpreting and of ‘being in the world’” (Colucci-Gray and Camino, 2014: p. 153). As such, a vital feature for ensuring the endurance of culture—its diversity—remains at risk.

Researchers and practitioners should thus moderate the temptation to draw on euphoric conceptualisations of integrative CALL, with additional reference to democratic participation structures and the across-the-board beneficial impact of CMC. Indeed, it has been established in several cases (i.e., Belz, 2002; Jeon-Ellis et al., 2005; Reeder et al., 2005) that inner circle-oriented CALL activities may occasion conflict, the strengthening of dominant cultural norms, and the preservation of Centre-Periphery power dynamics amongst diverse learners. In such instances, instrumental-deterministic readings of CALL risk obscuring the potentially significant cultural influences that bear upon learner interaction and the pre-established dominance of inner circle models of communication within the digital space (Jordan, 2001).

Finally, it is suggested that future inquiries provide empirical data in order to substantiate the claims laid here. Zheng and Stahl (2011), for instance, advise evaluation of “the impact of technology on development from a critical capabilities perspective” and “the socio-economic basis of technology for development, in particular issues surrounding the capitalist structure of societies and organisations employing information systems” (p. 78). Indeed, these topics provide a valuable foundation for quantitative and, indeed, qualitative accounts of the power dynamics manifesting within digital ELL networks. Regardless of one’s approach, however, it is crucial that future discourses surrounding technological adoption and social inequity account for the historical and contextual dynamics leading to their development.

The neoliberal-orientated, deterministic ideology that EFL acquisition facilitates input into economic growth and social development (Wee, 2005) is problematic insofar as it devalues the relationship between access and social capital and the potential for ELL to engender vastly different outcomes contingent upon socio-economic status. Against this background, dependence on specific competencies within Periphery domains threatens to marginalise emerging and minority language varieties given the dearth of locally appropriate lexical and socio-educative CALL content. The social backdrop of technology-enhanced ELL is thus anchored to dominant norms, negatively impacting learners holding subaltern degrees of the social and economic capitals (Yaman, 2015: p. 769).

As noted by Belz (2002), research in the sphere of digital language education has “not yet robustly examined cultural, historical, and social dimensions of CALL and learners engaged in CALL activities” (p. 60)—an assertion that holds to this day. This review, however, seeks to increase understanding of how CTT may be utilised to uncover those subtle mechanisms contributing to the expansion of online language education. It is hoped that the findings presented here encourage researcher-practitioners to ponder the issue of *what* are the hidden assumptions driving online English? More importantly, *who* benefits from its implementation? Only then can educators maintain a fully contextualised awareness of the embedded hierarchies and socio-cultural contexts that may have otherwise remained overlooked within digital ELL practice.

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ⁱ Emphasis not present in original text.

ⁱⁱ Emphasis present in original text.

ⁱⁱⁱ As described by Phillipson and Skutnabb-Kangas (1995), linguistic human rights may be defined as “one type of human right and as such one intricately interlocking element in a set of inalienable, universal norms for just enjoyment of one’s civil, political, economic, social, and cultural rights” (p. 483).

^{iv} Cultural capital may be defined as symbolic resources, both material and immaterial, acquired as a result of one's position within social hierarchy. In this regard, cultural capital represents a tacit yet inconsistent currency that may be exploited within various social arenas.