Englishes in Practice 2023; 6(1): 20–33
DOI 10.2478/eip-2023-0002

The use of technology in teaching ELF pronunciation: a help or a hinderance?

Paul Raine
Ritsumeikan University
praine@fc.ritsumei.ac.jp

ABSTRACT

As the world's premier lingua franca, English plays an instrumental role in global communication and cultural exchanges. Given that an individual's English pronunciation is closely tied to their cultural and national identity, English as a Lingua Franca (ELF) emphasizes intelligibility as the primary criterion to gauge pronunciation success. This paper investigates the interplay between ELF, globalization, and interculturality, with particular attention on how technology facilitates the teaching of English pronunciation in ELF scenarios. It provides an in-depth qualitative analysis of educators' perceptions on the role of technology as an enabler or inhibitor in teaching ELF pronunciation. The research affirms that teachers' beliefs are consistent with the existing literature. The study concludes that state-of-the-art technology should be leveraged in ELF pronunciation instruction, provided it enhances intelligibility and avoids excessively discouraging learners whose pronunciation diverges from native norms.

KEYWORDS: ELF pronunciation, Computer Assisted Pronunciation Training, Automatic Speech Recognition, English as a Global Lingua Franca

1. INTRODUCTION

British colonialism and imperialism, which spanned a period from the early 16th to the late 20th centuries, lead to English being adopted as an official language in over 50 countries around the world (Britannica, 2022). The emergence of the USA as the world's sole superpower in the aftermath of the Cold War further solidified the global significance of the English language, and it has since become the de facto standard international language of science, technology, commerce and diplomacy (Zhang, 2017).

Today, somewhere between 1.5 and 2 billion people speak English worldwide, with the precise figure dependent on one's minimum criteria for being an "English speaker" (Crystal, 2008; Statistica, 2022). However, the majority of English speakers do not speak it as a first language. As Crystal puts it "the centre of gravity of the English language has moved from the native speaker to the non-native speaker" (Crystal, 2008, p. 6) with non-native speakers outnumbering native speakers by somewhere between 3 to 1 and 4 to 1 (Crystal, 2008).

With hundreds of millions of English speakers using the language to communicate with each other on a daily basis in the absence of any "inner circle" interlocutors (Kachru, 1990), one might argue that it is both more logical and more ethical to adopt an English as a Lingua Franca (ELF) paradigm when teaching the language (Harris, 2015). With the rapid rise of the Internet since the late 1990s and mobile digital devices since the early 2000s, one might also argue that it is incumbent on teachers of ELF to utilize such technologies when doing so would help bring about intelligible speakers of ELF more efficiently or more effectively.

This report focuses on the role of technology in the teaching of pronunciation under an ELF paradigm and presents an investigation of teachers' perspectives on the use of such technologies. Pronunciation was selected because although there are significant bodies of literature relating both to the teaching of English pronunciation with technology and the teaching of pronunciation in ELF, there is a gap in the literature when it comes to teaching English pronunciation both with technology and in ELF.

The problem this paper aims to address is the apparent lack of alignment between the principles of ELF and the way technology has tended to be used to teach English pronunciation. Specifically, technology has tended to be used in a way that requires non-native speakers to conform to native speaker norms in order to receive positive feedback. On the other hand, one of the fundamental principles behind the ELF paradigm is that English learners should not be expected to acquire "native-like" pronunciation as long as their speech is intelligible.

In the first part of the literature review, the ELF paradigm is contextualized within the macrotrends of globalization and interculturality. This contextualization is important because ELF is not just an esoteric academic subject taught at universities: It has a significant role to play in a wider global context. The literature review then addresses how technology has typically been used to teach English pronunciation, and how English pronunciation should ideally be taught under an ELF paradigm. The second part of this paper reports on a qualitative investigation into the perspectives of ELF practitioners on the use of technology to teach pronunciation. The practitioners were asked to respond to a number of open-ended survey questions relating to their actual and potential use of technology to teach pronunciation under an ELF paradigm. Practitioner responses were then evaluated using a thematic analysis framework.

Finally, the author attempts to reconcile the perspectives of the practitioners with the findings in the literature review, and implications for the teaching of pronunciation with technology in ELF are discussed.

2. LITERATURE REVIEW

2.1 ELF in the Context of Globalization and Interculturality

While historically many different languages — including Latin, Spanish, and French — have at some point been adopted as a Lingua Franca, only English has become truly global in reach. Smokotin et al. (2014) suggest the acronym of EGLF — English as a Global Lingua Franca — to describe the role played by the English language in a global context by enabling communication not only between native and non-native speakers of the language, but more significantly among non-native speakers themselves. Smokotin et al. (2014) argue that the English language is a major component of globalization and is primarily "a means of intercultural and interlingual communication" (Smokotin et al., 2014, p. 511). The authors further argue that when English is used as a Lingua Franca by non-native speakers of the language, it is not necessary for such speakers to follow grammatical or phonetic native norms of correctness as long as this does not impede understanding (Smokotin et al., 2014).

Dewey (2007) also recognizes the key role of English in globalization and suggests that the rise of English as a global Lingua Franca should be situated in a transformationalist framework of globalization. Transformationalists suggest that there has been a tendency to overstate the significance of native English speakers, especially considering their diminutive numbers as compared to non-native speakers of the language (Dewey, 2007). The author also highlights the need to re-assess the materials, methods and approaches to English language teaching and testing in the light of ELF, while acknowledging that some organizations with a vested interest in the status quo — such as Cambridge ESOL or the British Council — may try to resist such changes (Dewey, 2007).

As the world's only global lingua franca, it is clear that English has an important role to play in helping people negotiate their identities and interactions with those who are "different" from themselves. However, this does not necessarily mean that ELF is culturally neutral, since "all communication, intercultural or otherwise, involves participants whose identities will be present in the interaction in one way or another" (Baker, 2011, p. 27). Despite his argument that individual identities will always be present in intercultural interaction, Baker (2011) rejects the notion of essentialism, which suggests, for example, that a British person as an individual is synonymous with British culture as a phenomenon. Instead, he argues that identity is "multiple, emergent, dynamic, and… contradictory." (Baker, 2011, p. 30). He acknowledges that language is key in forming one's identity and that participants in ELF often exhibit multiple identities as they move between local and global orientations. However, just because participants in intercultural communication switch identities, this does not mean that all identities are equal. Baker (2011) acknowledges this fact, and highlights issues of power and ideology in identity construction, particularly the pull of the "native speaker" ideologies of inner circle countries.

Regarding the question of who exactly should be included or excluded from the concept of "ELF", Holmes and Dervin (2016), citing Seidlhofer (2011) suggest that ELF should include both native and non-native speakers of English. They also express

similar sentiments to Baker (2011) in the respect that ELF is not culturally neutral and that "speaking a language is always influenced by our identity markers" which include gender, social class, regional origins, accents, and dialects (Holmes & Dervin, 2016, p. 4).

2.2 The Teaching of English Pronunciation with Technology

In a literature review of the advantages of using computers to teach pronunciation, Pourhosein and Sabouri (2017) highlight some of the main affordances of such technologies, including the ability to offer learners endless practice and automatic feedback; the high quality of the audio that can be provided; the ability for learners to work at their own pace; and the fact that computers can be implemented in a range of different contexts, including whole classes, small groups, pairs, and individual learners (Pourhosein & Sabouri, 2017).

Levis (2007 echoes the sentiments expressed by Pourhosein and Sabouri (2017) and in some respects goes further. He claims that the use of computers is "almost ideally suited" to learning pronunciation skills (Levis, 2007, p. 184) and highlights how computer technology can be used to provide frequent and focused pronunciation practice with individualized feedback of a visual nature. He also draws attention to the fact that language teachers often lack confidence in teaching pronunciation due to lack of adequate training, and therefore Computer Assisted Pronunciation Training (CAPT) fulfils a critical need in language teaching and learning.

Some of the technology discussed in Levis (2007) is a little dated, and consequently some of the criticisms of the CAPT applications reviewed in the paper do not necessarily apply to more recent technologies. For example, Levis (2007) claims that commercially available Automatic Speech Recognition (ASR) applications do not do well at recognizing non-native speech or diagnosing non-native speaker pronunciation errors. However, more modern applications such as EnglishCentral[1], and ELSA[2] have been specifically designed for these purposes, and generally do well at fulfilling these functions (Gokgoz-Kurt, 2017; Kholis, 2021). Modern ASR systems use a combination of an acoustic model and a language model to accurately transcribe speech. The acoustic model "takes audio as input and converts it to a probability over characters in the alphabet" while the language model "helps to turn these probabilities into words of coherent language" (Coqui GmbH, 2021). This means that even where pronunciation is not precisely native-like, most modern ASR systems should still be able to transcribe speech accurately.

The problem with some modern CAPT applications as far as ELF practitioners are concerned is that they rely primarily on native speaker acoustic models (in particular General American English) in determining how non-native speaker utterances should be evaluated. This is certainly the case for the ELSA application, which "use[s] speech technology to compare the pronunciation of the user with the American standard pronunciation" (X. Anguera, ELSA CTO, personal communication, November 10, 2022) and is often also the case for other modern CAPT applications.

1 www.englishcentral.com
2 www.elsaspeak.com

2.3 The Teaching of English Pronunciation in ELF

At the university in which this study was conducted, which delivers its English language classes under an ELF paradigm, the departmental guidelines clearly state that students should not be penalized for failing to imitate native speakers. This reflects the view propounded by the likes of Smokotin (2014) that strict adherence to native speaker pronunciation norms is not necessary or desirable in ELF contexts.

Further support for this view is provided by the likes of Deterding (2010), who argues that the pronunciation of individuals from inner-circle countries is not necessarily the most intelligible in ELF contexts. He also highlights how only certain pronunciation mistakes in English actually affect intelligibility and that it makes no sense for teachers to devote class time to features of pronunciation that do not affect intelligibility. Deterding (2010) adopts the Lingua Franca Core (LFC) as a framework for deciding which pronunciation features warrant attention in an ELF classroom. The LFC is based on the work of Jenkins (2000, 2007) and provides a basic description of a range of pronunciation features and their effect on intelligibility, as shown in Table 1.

Table 1

Pronunciation features from the Lingua Franca Core, adapted from Deterding (2010), based on Jenkins (2000, 2007)

Pronunciation feature	Example	Important for intelligibility?
Dental fricatives	TH in THAT vs. TH in THIN	No
Consonants (excluding dental fricatives)	C in CAT, P in POLE, D in DANGER, etc.	Yes
Consonant clusters (initial and medial)	BL in BLANK, SCR in DESCRIPTION	Yes
Consonant clusters (final)	PT in SLEPT	No
Mid-central vowel (/ɜː/)	UR in NURSE	Yes
Vowel quality (excluding mid-central /ɜː/)	O in HOT, A in CLASS	No
Vowel reduction	O in CONFESS (kənˈfɛs vs. kɒnˈfɛs)	No
Stress-based rhythm (excluding nuclear stress)	I'm going to the store	No
Nuclear (keyword) stress	Have you got a blue ONE vs. Have you got a BLUE one (in asking for a blue pen)	Yes

Further support for the LFC is offered by the likes of Zoghbor (2018) who is generally in favor of the LFC as a framework for teaching pronunciation in ELF contexts but also points out some of the arguments that have been levelled against it. For example, ELF may give rise to unintelligible varieties of English (e.g., Trudgill, 1998;

Yamaguchi, 2002 as cited in Zoghbor, 2018), the fact that English no longer technically belongs to native speakers does not necessarily warrant a whole new taxonomy for English pronunciation, and a big gap between the empirically derived LFC and actual implementation of it in a curriculum (Sobkowiak, 2005 as cited in Zoghbor, 2018).

While limited, the available research into ELF pronunciation has identified some elements teachers may or may not need to address to nurture their learners' intelligibility when speaking in English. It also remains unclear which approaches to developing intelligibility are most effective. To provide greater clarity on this issue, the current study surveys in-service ELF teachers to find out what they are doing to teach pronunciation, and what role contemporary technology plays in this process.

3. RESEARCH DESIGN

3.1 Research Question

The central research question that this report aims to address is:

Does technology promote or hinder the teaching of pronunciation in an ELF paradigm?

The question is especially important bearing in mind the way in which technology has typically been used to assess learner pronunciation by comparing it to native speaker models, and the fundamental principle of ELF not to hold learners to those same norms as long as intelligibility can be preserved.

3.2 Methodology

In order to investigate teachers' perspectives on the use of technology to teach pronunciation in ELF contexts, a qualitative approach was adopted. Qualitative research is designed to explore and describe the experiences of the participants (Creswell, 2014), and in this study, the participants were university teachers who had experience teaching pronunciation to English language learners in both English as a Foreign Language (EFL) and ELF contexts. All the respondents were employed by a university in Japan that has a campus-wide ELF program for undergraduate students. This research project should therefore be considered a case study, and it would not be wise to attempt to generalize the findings presented here to other teachers or other institutions.

The researcher used a written survey instrument to collect data from the participants. The survey questions were developed in accordance with a review of the literature, with particular attention being paid to the way technology has typically been used to teach English pronunciation versus the way pronunciation should ideally be taught in ELF contexts. The questions were designed to elicit the participants' perspectives on the use of technology to teach pronunciation in ELF contexts, as well as their opinions on the challenges and benefits of doing so. The written surveys, which are a time-efficient and descriptively rich means of gathering good-quality data (Handy & Ross, 2005), were administered to the respondents via email. The individual word counts of the completed surveys were:

- Respondent #1: 745 words
- Respondent #2: 1126 words
- Respondent #3: 808 words
- Respondent #4: 699 words

A thematic analysis of the survey responses was conducted following the processes laid out by Braun & Clarke (2006). The respondents' comments were classified into themes that related to the research question. The analysis of the surveys was theoretical rather than inductive because it involved attempting to fit the data in the transcripts to the pre-existing theoretical framework of ELF that was previously discussed in the literature review section of this paper (Braun & Clarke, 2006).

3.3 Respondents

In this study, four English language teachers at a university in Japan were approached and asked to respond to the survey questions. The respondents were selected by way of a purposive sampling technique (Etikan et al., 2016), that is, they were selected because the author considered them to be appropriate for the purposes of the current study. In order to ensure the respondents' anonymity, only generic details of the respondents will be provided. Three of the four respondents were male, one was female, and all had extensive experience teaching English in both EFL and ELF contexts.

3.4 Survey Questions

The survey questions (Appendix 1) were designed to open the door to the idea that ELF does not consider native speaker pronunciation a suitable model for non-native learners of English without explicitly stating that fact. The aim was to probe the respondents' thoughts and feelings about the use of technology in teaching English pronunciation in ELF contexts and attempt to pick up on any acknowledgment of a conflict between the uses of such technology and the perceived principles of ELF.

3.5 Ethical Permissions

Ethical permissions were obtained from the respondents by way of a written consent form which included information about the purpose of the study, and assurances that any answers given would be used in an anonymized manner in the final report.

4. FINDINGS

Five common themes were identified across the four transcripts that were analyzed for this research paper. In order of numerical significance, these were: intelligibility, listening practice, use of ASR (Automatic Speech Recognition), the raising of awareness, and inclusivity and variety. Each of these themes will be dealt with and discussed individually below, and the relevance of each theme to the research question and the insights provided by the literature review will be determined.

4.1 Intelligibility

By far the most common theme occurring in the transcripts was the concept of intelligibility and its importance in relation to assessing pronunciation in ELF contexts.

In the literature review, it was noted how numerous researchers deem intelligibility to be the main criterion by which English learner pronunciation should be judged (Deterding, 2010; Jenkins 2000, 2007; Smokotin et al., 2014; Zoghbor, 2018). The emphasis on intelligibility is also clearly shared by the respondents to this research project. Respondent #1 for example, stated how he would be fine with students speaking with a "localized accent" as long as the students' speech was "intelligible to their listeners". Respondent #2 stated how he subscribes to the "intelligibility paradigm" not only when it comes to pronunciation, but also syntax and lexis. Finally, Respondent #4 noted how some students get "discouraged" when ASR does not understand what they are trying to say and how this would be a concern when using technology to teach pronunciation in ELF contexts.

4.2 Listening Practice

All respondents highlighted the importance of listening practice when it comes to teaching pronunciation in an ELF paradigm, with both traditional forms of media, such as tapes and CDs, and digital forms of media, such as YouTube videos and web-based audio being used by the respondents to administer listening activities to their students. Listening practice also ties into two other important themes identified in the transcripts: raising of awareness and inclusivity and variety. Respondent #2 for example explained how he used videos of non-native speakers to "expose [students] to various accents and raise their awareness of potential problems with understanding". Meanwhile, Respondent #3 described how he would get students to listen to themselves and train them to be more critical of pronunciation that they heard.

4.3 Use of ASR

Two of the four respondents stated that they experimented with ASR to some extent in teaching pronunciation in an ELF context. Respondent #3 described ASR as a "fun activity to let [students] explore their own pronunciation". However, he urged restraint against becoming "too focused on pronunciation" and expressed a desire for students to "practice spoken communication in their own way naturally". Meanwhile, Respondent #4 described using ASR in an activity that required students to read scripts they had written aloud into a memo application with an ASR capability. As stated above, Respondent #4 was concerned when such applications would fail to recognize her students' speech as this could be "demotivating". Unfortunately, the data did not reveal what kind of ASR was being used by these respondents, or what parts of speech were not recognized, but these would be interesting questions to investigate in a follow-up study.

4.4 Raising of Awareness

Another important theme appearing multiple times in the transcripts was the importance of using technology to raise students' awareness. As mentioned above, Respondent #2 used listening activities to raise awareness of potential pronunciation problems, while Respondent #1 said that technology should be used in ELF contexts to "promote students' awareness of English varieties and English pronunciation within the context of those varieties". This comment also ties into the final theme of "inclusivity and variety", which is further discussed below.

4.5 Inclusivity and Variety

The final theme identified in at least two of the analyzed transcripts related to the connected notions of "inclusivity and variety" in teaching English pronunciation. Respondent #4, for example, was keen to emphasize to her students that "all accents are authentic", while Respondent #1 suggested using technology to expose students to numerous varieties of English when teaching English in an ELF context.

5. DISCUSSION

In general, it seems that the perspectives of the practitioners of ELF surveyed in this research project correlate and coincide with the expert opinions expressed in the literature.

The intelligibility of learner speech is deemed to be of paramount importance both in the literature and in the opinions of those teachers surveyed. What are the implications of this when it comes to the use of technology to teach English pronunciation in ELF contexts? Technologies that harshly penalize learner utterances which deviate from native speaker models would not seem to be a good fit for ELF teaching contexts. However, if the LFC is born in mind when using such technologies, they could still play an important role in helping students to become more intelligible speakers of English. Applications that utilize ASR could incorporate the LFC as an optional model for those who prefer it. In fact, such applications might be the best chance for the LFC to be reliably implemented in language classrooms, since it would be difficult for teachers to memorize and consistently apply it considering the other restraints and demands placed upon them.

Although not specifically mentioned in the literature reviewed for this research project, listening practice was also of significant importance to the respondents. Of course, when ELF speakers interact in a spoken form with individuals from other countries and cultures, they must both speak and listen to the speech of others. Oral communication cannot occur without both speaking and listening operating in unison. Indeed, Respondent #3 expressed confusion about what was meant by "teaching pronunciation" and wondered whether it included only the "productive skill" or whether it also entailed "knowledge of sounds that are required for listening comprehension". Clearly, the teaching of pronunciation must include both speaking and listening skills. Some researchers have suggested teaching "accommodation skills" which "enable speakers to adapt their speech to the needs of listeners" (Deterding, 2010, p. 11). The responsibility for successful oral communication in ELF contexts is shared between both the listener and the speaker.

The respondents to this research project feel that technology is at its best when it helps students to raise their awareness, both of possible pronunciation errors and of the variety of different Englishes that are used in the world. The raising of awareness also ties into the connected notions of inclusivity and variety. We should accept and include people who speak differently than us, and we should encourage a variety of ways of speaking while taking steps to ensure that we are mutually intelligible to one another. In this respect, the ELF paradigm ties in very closely with the global social and political movement toward Equality, Diversity, and Inclusion (EDI). Further investigation of the relationship between ELF and EDI would be a task for a separate research project, but

the results of the current project seem to suggest that ELF is an important part of that movement.

6. LIMITATIONS

The current study can only be considered a preliminary investigation into perspectives on the role of technology in teaching ELF pronunciation. The limited number of respondents (n = 4) and the limited amount of data collected in the surveys means that it is not possible to generalize the findings presented here to other contexts. In addition, the data collection methods adopted here (written surveys) almost certainly failed to tell the whole story and follow-up studies might seek to employ a wider range of methods, including classroom observations and in-depth interviews.

Future research in this area might also benefit from focusing solely on specific technologies, such as those that incorporate the use of ASR to assess student speaking. In addition, in order to establish the reliability of future research in this area, one or more of the techniques suggested by Lincoln and Guba (1985), such as prolonged engagement, persistent observation, triangulation, or member-checking could be employed. Due to temporal and financial constraints, these techniques were not adopted in the current study.

6. CONCLUSION

The aim of this research project was to address the question of whether technology promotes or hinders the teaching of pronunciation in an ELF paradigm. We have seen both in the literature and in the opinions of the practitioners surveyed that intelligibility of English learner pronunciation is of paramount importance and should be the main criteria by which the success or failure of English learner pronunciation is judged. In this respect, we could conclude that technology promotes the teaching of pronunciation in an ELF paradigm if it either helps the learner to become a more intelligible speaker of English, or if it helps them to better understand a variety of different forms of English pronunciation. At the same time, we must be careful to ensure that technology is not being used to encourage unintelligible forms of English, which is a worry expressed by some.

When it comes to specific activities that teachers can do with technology in ELF teaching contexts, there are a range of possibilities, from using ASR-enabled applications to transcribe learner speech, to exposing learners to a range of different English pronunciation on the web, to allowing them to record and listen back to their own pronunciation. ELF practitioners should however take care that the use of technology does not have a demotivational effect on learners. Of course, practitioners would be remiss if they did not correct English learner pronunciation “mistakes” when doing so would improve the learner’s intelligibility or prevent them from being misunderstood. However, technology should not be used under an ELF paradigm to excessively penalize students for failing to speak exactly like native speakers.

REFERENCES

Baker, W. (2011). Intercultural awareness: Modelling an understanding of cultures in intercultural communication through English as a lingua franca. *Language and Intercultural Communication, 11*(3), 197-214. https://doi.org/10.1080/14708477.2011.577779

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Britannica, T. Editors of Encyclopedia (2022, August 14). *British Empire*. Encyclopedia Britannica. https://www.britannica.com/place/British-Empire

Coqui GmbH. (2021). *Acoustic model vs. Language model*. Coqui STT. Retrieved from https://stt.readthedocs.io/en/latest/playbook/AM_vs_LM.html

Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches (4th ed.)*. Sage.

Crystal, D. (2008). Two thousand million? *English Today, 24*, 3-6. https://doi.org/10.1017/S0266078408000023

Deterding, D. (2010). ELF-based pronunciation teaching in China. *Chinese Journal of Applied Linguistics (Foreign Language Teaching & Research Press), 33*(6), 3-15.

Dewey, M. (2007). English as a Lingua Franca and globalization: An interconnected perspective. *International Journal of Applied Linguistics, 17*(3), 332-354. https://doi.org/10.1111/j.1473-4192.2007.00177.x

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics, 5*(1), 1-4. http://dx.doi.org/10.11648/j.ajtas.20160501.11

Gokgoz-Kurt, B. (2017). EnglishCentral as a tool to improve pronunciation. *TESOL Journal, 8*(4), 894-898. http://dx.doi.org/10.1002/tesj.351

Handy, J., & Ross, K. (2005). Using written accounts in qualitative research. *South Pacific Journal of Psychology, 16*, 40-47. http://dx.doi.org/10.1017/S0257543400000067

Harris, J. (2015). An English as a lingua franca model for English teaching in Japan: Pedagogical implications. 生駒経済論叢 [*Ikoma Economic Review*], *13*(1), 99-114.

Holmes, P., & Dervin, F. (2016). Introduction – English as a lingua franca and interculturality: Beyond orthodoxies. In P. Holmes & F. Dervin (Eds.), *The cultural and intercultural dimensions of English as a lingua franca*. Multilingual Matters (pp. 1-32).

Jenkins, J. (2000). *The phonology of English as an international language*. Oxford University Press.

Jenkins, J. (2007). *English as a lingua franca: Attitude and identity*. Oxford University Press.

Kachru, B. B. (1990). World Englishes and applied linguistics. *World Englishes, 9*(1), 3-20. https://doi.org/10.1111/j.1467-971X.1990.tb00683.x

Kholis, A. (2021). Elsa Speak app: automatic speech recognition (ASR) for supplementing English pronunciation skills. Pedagogy: *Journal of English Language Teaching, 9*(1), 1-14. https://doi.org/10.32332/joelt.v9i1.2723

Levis, J. (2007). Computer technology in teaching and researching pronunciation. *Annual Review of Applied Linguistics, 27*, 184-202. https://doi.org/10.1017/S0267190508070098

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Sage.

Pourhosein Gilakjani, A., & Sabouri, N. B. (2017). Advantages of using computer in teaching English pronunciation. *International Journal of Research in English Education, 2*(3), 78-85. http://dx.doi.org/10.18869/acadpub.ijree.2.3.78

Seidlhofer, B. (2011). *Understanding English as a lingua franca*. Oxford University Press.

Smokotin, V. M., Alekseyenko, A. S., & Petrova, G. I. (2014). The phenomenon of linguistic globalization: English as the Global Lingua Franca (EGLF). *Procedia-Social and Behavioral Sciences, 154*, 509-513. https://doi.org/10.1016/j.sbspro.2014.10.177

Sobkowiak, W. (2005). Why not LFC? In K. Dziubalska-kolaczyk & J. Przedlacka (Eds.), *English pronunciation models: A changing scene* (pp. 131-149). Peter Lang.

Statistica (2022). *The most spoken languages worldwide in 2022*. Retrieved from https://www.statista.com/statistics/266808/the-most-spoken-languages-worldwide/

Trudgill, P. (1998). World Englishes: Convergence or divergence? In H. Lindqvist, S.

Klintberg, M. Levin, & M. Estling (Eds.), *The Major Varieties of English: Papers from MAVEN 97* (pp. 29-36). Vaxjo, Sweden: Acta Wexionensia.

Yamaguchi, C. (2002). Towards international English in EFL classroom in Japan. *The Internet TESL Journal, 8*(1). Retrieved from http://iteslj.org/Articles/Yamaguchi-Language.html

Zhang, B. (2017). Language and Power: An insight into American English dissemination. *International Journal of Social Science and Humanity, 7*(10), 672-675.

Zoghbor, W. (2018). Revisiting English as a foreign language (EFL) vs English lingua franca (ELF): The case for pronunciation. *Intellectual Discourse, 26*(2), 829-858.

APPENDIX A

List of survey questions administered to respondents

1. Does the way you teach English pronunciation under an ELF paradigm differ significantly to the way you taught English pronunciation under an EFL paradigm? If not, why not? If so, how?
2. Did you use technology to teach English pronunciation under an EFL paradigm? If not, why not? If so, how?
3. Do you use technology to teach English pronunciation under an ELF paradigm? If not, why not? If so, how?
4. Did you use Automatic Speech Recognition (ASR) to teach English pronunciation under an EFL paradigm? If not, why not. If so, how?
5. Do you use Automatic Speech Recognition (ASR) to teach English pronunciation under an ELF paradigm? If not, why not. If so, how?
6. Would you consider using a technological solution that promised to help students "speak English more like a native speaker" under an ELF paradigm? Why or why not?
7. Would you consider using a technological solution that promised to "reduce a student's foreign accent" under an ELF paradigm? Why or why not?
8. Would you consider using a technological solution that promised to help students "speak English in a more intelligible way" under an ELF paradigm? Why or why not?
9. In your opinion, what are the main differences between "intelligible" English pronunciation and "native-like" English pronunciation?
10. What kind of activities do you consider the most effective in obtaining good English pronunciation under an ELF paradigm?
11. In general, do you think technology promotes or hinders the teaching of English pronunciation under an ELF paradigm?
12. Do you have any other comments about the use of technology to teach English pronunciation under an ELF paradigm?