# Intelligibility Enhancement via Telepractice during COVID-19 Restrictions

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**Abstract**

**Purpose**: Speech-language pathologists (SLPs) may be approached by multilingual speakers seeking to improve their intelligibility in English. Intelligibility is an essential element of spoken language proficiency and is especially important for multilingual university students given their need to express complex ideas in an additional language. Intelligibility Enhancement is an assessment and intervention approach that aims to improve the intelligibility of consonants, vowels and prosody with multilingual speakers who are learning to speak English. This paper describes the student-led delivery of Intelligibility Enhancement with multilingual students in a university clinic using a telepractice model after restrictions were imposed due to the COVID-19 pandemic.

**Conclusion**: Telepractice offered an appropriate mode of service delivery that facilitated a high quality, best practice, and continuous service to Intelligibility Enhancement clients while also permitting student SLPs' ongoing clinical education employing an increasingly utilised technology. Previous research demonstrated the effectiveness of the Intelligibility Enhancement Assessment and Intervention Protocols in increasing English intelligibility in multilingual university students. The modifications necessary to provide this intervention via telepractice in a student-led clinic not only offer a possible solution to supporting multilingual university students' English intelligibility during the COVID-19 pandemic, but also will inform the understanding of SLPs providing similar interventions in future.

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# Intelligibility Enhancement via Telepractice during COVID-19 Restrictions

The COVID-19 pandemic has impacted the provision of speech-language pathology services in different settings and locations worldwide. In Australia, an initial peak in COVID-19 infections has currently been mitigated through successful public health measures (Speech Pathology Australia, 2020a). For speech-language-pathologists (SLPs) working in higher education, these measures have included restricted access to on-campus facilities, working from home, and the delivery of both academic course content and student SLPs' clinical education online. This paper describes the student-led delivery of Intelligibility Enhancement with multilingual students in a university clinic using a telepractice model after restrictions were imposed due to the COVID-19 pandemic.

## Intelligibility Enhancement

Intelligibility Enhancement is an intervention that aims to improve the intelligibility of multilingual speakers' production of consonants, vowels, and prosody when they are speaking a language other than their home language (Blake & McLeod, 2019). This intervention has also been called pronunciation training, accent reduction, accent modification, and accent improvement; however, the term *Intelligibility Enhancement* is preferred here because it signals a focus on intelligibility and success in communication, rather than accent. Differences in multilingual speakers' intelligibility that are perceived as an accent are influenced by a speaker's home language or dialect and do not reflect a disorder (American Speech-Language-Hearing Association, ASHA, 2019). Intelligibility Enhancement uses non-medical terminology to ensure multilingual speakers are not pathologised (e.g., clients or speakers rather than patients, telepractice rather than telehealth, and substitutions, deletions, and distortions rather than errors) (Blake, McLeod, & Verdon, 2020).

Intelligibility is of particular importance for multilingual university students because of their need to express complex ideas and pronounce technical terminology in an additional language. Australia is the third most popular destination country for students wishing to improve their English behind the United States and the United Kingdom (Training Council for International Education, 2016). The Intelligibility Enhancement Assessment and Intervention Protocols (Blake, 2019a, 2019b; Blake et al., 2020) were designed to support the English intelligibility of multilingual university students and the provision of services in the university clinic described here adhered to these protocols. Four graduate student SLPs provided assessment and intervention under the supervision of a qualified SLP, who is the author of the protocols. Four multilingual research higher degree candidates were assessed face-to-face prior to restrictions due to COVID-19. Planned group intervention sessions were shifted to a telepractice model once SLP services in the clinic and university classes moved online.

**Telepractice**

Telepractice offered an appropriate mode of service delivery that could facilitate a high quality, best practice, and continuous service to Intelligibility Enhancement clients while maintaining physical distancing. There is increasing evidence that allied health and nursing services delivered via telepractice can be as effective as face-to-face services (Iacono, Stagg, Pearce, & Hulme Chambers, 2016; Speyer et al., 2018). Comparable assessment results and treatment outcomes have been reported between traditional service delivery and telepractice in contexts similar to the planned Intelligibility Enhancement sessions, including in the assessment of speech intelligibility as well as in intervention for children with speech sound disorders (Coufal, Parham, Jakubowitz, Howell, & Reyes, 2018; Grogan-Johnson et al., 2011; Waite, Theodoros, Russell, & Cahill, 2012), in group speech maintenance programs with people with Parkinson's disease (Quinn, Park, Theodoros, & Hill, 2019), and in assessment

and intervention for adult neurogenic communication disorders including aphasia, dysarthria, and apraxia of speech (Theodoros, 2011). Telepractice delivered from a university speech-language pathology clinic was judged to be a satisfactory service delivery model for school-based interventions by stakeholders that included parents, teachers, and administrators (Crutchley & Campbell, 2010). Factors generally associated with client satisfaction with telepractice include ease of use, decreased travel time, and improved communication (Kruse et al., 2017).

In the current context, telepractice also offered the opportunity to facilitate student SLPs' ongoing clinical education employing an increasingly utilised mode of service delivery. Educating future clinicians in telepractice is also important to its uptake and sustainability (Theodoros, 2011). The university clinic had been providing a student-led telepractice service for approximately 12 months prior to pandemic restrictions. Clients were school-aged children in remote areas with limited access to SLP services. Consequently, clinic procedures for telepractice (e.g., expectations of students) existed and the clinical educator (CE) was experienced in tele-supervision. The modality used in Intelligibility Enhancement sessions was video conferencing, as it allowed multiple participants to speak, hear, and share data with each other (Agency for Clinical Innovation, 2020).

**Preparation and procedure**

All participants in the telepractice sessions required only a computer with suitable camera and audio options (e.g., microphone and speaker, although headsets were preferred), a quiet location, and lighting that ensured their faces were clearly visible. Student SLPs' online environments were checked prior to their participation to ensure client privacy would be maintained, the setting appeared professional, and the internet connection was stable. Clients were given two weeks' notice that sessions would continue online and had the opportunity to withdraw. Two clients withdrew citing increased workload due to changes in the learning

environment. Client variables, such as confidence with technology, performance anxiety in front of their peers, and discomfort watching themselves on the monitor may also limit participation in telepractice. Student SLPs were encouraged to use strategies to support communication and rapport in telepractice, such as looking at the camera as well as the client's image, monitoring the client for body language or facial expressions that might indicate discomfort or lack of understanding, and muting their audio when not speaking in order to reduce extraneous noise.

Student SLPs created written handouts for each session that included an auditory discrimination task, an explanation of how the target sounds were produced, and prompts and exemplars for producing the targets in isolation, syllables, words, phrases, sentences, and conversation. To facilitate homework practice, they also recorded audio exemplars of the words, phrases, and sentences used in sessions with pauses to allow for repetition (Blake, 2019b).

The CE sent all participants an electronic appointment with the handout and a link to a university Zoom meeting two days prior to sessions. Participants logged in using their university staff or student number and usual password to enhance security. Sessions were not recorded. The CE and student SLPs joined the meeting 30 minutes prior to the clients to prepare and discuss any concerns. Once the clients joined the meeting, the CE allocated participants to breakout rooms where a pair of SLP students worked with each client. The CE was able to join breakout rooms to monitor progress and participants were also able to message the CE to request them to join the room, if they required support. Student SLPs were challenged to consider how best to modify their instructions, cues, and feedback in consideration of their multilingual clients in the online environment. The CE and the student SLPs remained after the clients left the meeting room in order to debrief and reflect on the session. Anecdotal feedback from the multilingual clients and student SLPs was positive in

line with previous studies of student-led face-to-face Intelligibility Enhancement sessions (Blake, Verdon, & McLeod, 2019) and research investigating participants' perceptions of telepractice delivery of the service is in progress.

In order to ensure the speech-language pathology profession keeps pace with technological advances, researchers have called for further policy development and future research that includes focus group interviews with SLPs investigating barriers and facilitators in the use of telepractice (Kuschmann, Nayar, Lowit, & Dunlop, 2020; Swales, Theodoros, Hill, & Russell, 2019). Since the declaration of the COVID-19 pandemic, professional associations around the world have provided additional resources and training to support clinicians using telepractice (see ASHA, 2020a; 2020b; Royal College of Speech and Language Therapists, 2020; Speech Pathology Australia, 2020b). Numerous studies of telepractice in speech-language pathology (Freckmann, Hines, & Lincoln, 2017; Grillo, 2017; Hines, Lincoln, Ramsden, Martinovich, & Fairweather, 2015) are also available to inform the development of models and prepare clinicians for online delivery of services. Research, along with clinicians experienced in providing interventions via telepractice will guide SLP services as part of the technological future (Theodoros, 2011).

**Conclusion**

Previous research demonstrated the effectiveness of the Intelligibility Enhancement Assessment and Intervention Protocols in increasing the English intelligibility of multilingual university students. The modifications to the protocols reported here that were necessary to provide Intelligibility Enhancement via telepractice in a student-led clinic not only offer a possible solution to supporting multilingual university students' English intelligibility during the COVID-19 pandemic, but also will inform the understanding of SLPs providing similar interventions into the future.

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