Egyptian Journal of Linguistics and Translation 'EJLT'

ISSN: 2314-6699

https://ejlt.journals.ekb.eg/

Volume 15, Issue 1, July 2025

Peer-reviewed Journal

Sohag University Publishing Center

The Impact of Pronunciation Clarity on the Accuracy and Speed of Simultaneous Interpretation: Challenges and Strategies

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Abstract

This study investigates how pronunciation clarity influences the accuracy and speed of simultaneous interpretation among Saudi interpreters. It focuses on real challenges interpreters face when speakers talk too fast, have strong accents, or exhibit unclear or imprecise pronunciation. These problems can make interpretation slower and less accurate. To study this, the researchers used a survey method. Thirty-three Saudi interpreters with different education levels (Bachelor's, Master's, and PhD) answered a structured questionnaire. The survey included both multiple-choice and open-ended questions. The results were analyzed using statistics to see if education level influenced the interpreters' experiences. Findings showed that unclear pronunciation, fast speech, and poor audio quality made interpreting more difficult. These problems were common across all education levels, meaning even experienced interpreters struggled with them. To manage these challenges, interpreters used several helpful strategies. The most effective ones were active listening, developing familiarity with different accents, and asking for pronunciation clarification before events. Other strategies included practicing repetition, learning about sounds, and using clues from context. The study concludes that clear pronunciation is very important in interpretation. It recommends more training for interpreters and encourages speakers to pronounce words clearly, especially in important settings like hospitals and courts.

Keywords: Pronunciation Clarity, Simultaneous Interpretation, Interpretation Challenges, Interpretation Strategies, Accents and Articulation

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تأثير وضوح النطق على دقة وسرعة الترجمة الفورية: التحديات والاستراتيجيات المستخلص باللغة العربية

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تهدف هذه الدراسة إلى استكشاف تأثير وضوح النطق على دقة وسرعة الترجمة الفورية بين المترجمين السعوديين. تركّز الدراسة على التحديات الحقيقية التي يواجهها المترجمون عندما يتحدث المتحدثون بسرعة مفرطة أو بلهجات قوية أو بنطق غير واضح أو غير دقيق. مثل هذه المشكلات قد تؤدي إلى بطء الترجمة وضعف دقتها. واعتمدت هذه الدراسة على المنهج الاستبياني، حيث أجاب ثلاثة وثلاثون مترجمًا سعوديًا من مستويات تعليمية مختلفة (بكالوريوس، ماجستير، دكتوراه) على استبيان منظم شمل أسئلة متعددة الخيارات وأخرى مفتوحة. وقد تم تحليل النتائج باستخدام الأساليب الإحصائية لمعرفة ما إذا كان مستوى التعليم يؤثر في أداء المترجمين. وأظهرت النتائج أن عدم وضوح النطق وسرعة الكلام وسوء جودة الصوت تُعد من العوامل التي تزيد من صعوبة الترجمة. كما اتضح أن هذه التحديات شائعة بين جميع المستويات التعليمية، مما يعني أن حتى المترجمين ذوي الخبرة يواجهون صعوبة معها. وللتعامل مع هذه التحديات، استخدم المترجمون عددًا من الاستراتيجيات الفعالة، من أبرزها: الاستماع النشط، والتعود على اللهجات المختلفة، وطلب توضيح النطق قبل مسبقا. وشملت الاستراتيجيات الأخرى: التدريب على التكرار، والتعرّف على الأصوات، واستخدام السياق لفهم المعنى. وتخلص الدراسة إلى أن وضوح النطق عامل بالغ الأهمية في الترجمة الفورية، وتوصي بتوفير تدريب إضافي للمترجمين، وتشجيع المتحدثين على النطق الواضح، خاصة في البيئات الحساسة مثل المستشفيات والمحاكم.

الكلمات الرئيسة: وضوح النطق، الترجمة الفورية، تحديات الترجمة، استراتيجيات الترجمة، اللهجات والنطق

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The Impact of Pronunciation Clarity on the Accuracy and Speed of Simultaneous Interpretation: Challenges and Strategies

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1. Introduction

Simultaneous interpreting is a cognitively demanding activity that requires interpreters to listen, process, and produce speech in real time. It is a complex and cognitively demanding process that requires interpreters to listen to the source language, process its meaning, and render it into the target language—all in real time. The speed and accuracy with which an interpreter performs these tasks can be influenced by a range of linguistic and extralinguistic factors. One such factor is the clarity of the speaker's pronunciation. One of the key variables that may impact interpreter performance is the clarity of the speaker's pronunciation. Pronunciation clarity influences the interpreter's ability to quickly recognize and decode speech, which in turn affects both the speed and accuracy of the interpretation. This study investigates the extent to which pronunciation clarity affects simultaneous interpreters' performance, with a particular focus on accuracy and speed.

Pronunciation clarity refers to the degree to which speech sounds are articulated distinctly and intelligibly. When speech is clearly pronounced, it facilitates easier and faster decoding by the listener. In the context of interpreting, unclear or heavily accented speech may impose an additional cognitive burden on interpreters, increasing their processing effort and potentially compromising both the speed and accuracy of their performance.

Although previous studies have investigated various elements that affect interpreter output—such as speech rate, terminology density, and cognitive load—the specific impact of pronunciation clarity on interpreters' performance remains underexplored. AlDayel and Alotaibi (2024) said that student interpreters often struggle when speakers talk too fast or

unclearly. This study aims to address that gap by examining how the clarity of pronunciation in source language input affects the accuracy and speed of simultaneous interpreting among undergraduate interpreting students.

Unclear pronunciation also makes the interpreter's brain work harder. Yang (2019) looked at how speech speed affects interpreters, but the study also showed that when speech is unclear, it becomes harder to follow, even if it's not fast. This extra effort can tire interpreters and lead to slower or less accurate translations. If the speech is both fast and unclear, it becomes even more difficult to interpret.

New interpreters often make mistakes when they hear words that sound similar. Ramadhan Putra, Anshori, and Prihantoro (2024) found that unclear pronunciation can cause language confusion. For example, a student might hear one word but think it's another word that sounds like it. This changes the meaning and lowers the quality of the translation. That's why interpreter training should also help students improve their listening skills, not just vocabulary or grammar.

It's also easier for interpreters to work from their second language into their first language. Chang (2005) found that interpreters do better this way, especially when the speaker has a familiar accent. But when they work from their first language into their second language, it becomes harder, especially if the accent is new or different. This shows that pronunciation is even more important when the interpreter is working with a language they don't know as well.

Even machines struggle with unclear pronunciation. Fügen, Waibel, and Kolss (2007) studied how machines translate speech in real time. They found that when the speaker doesn't speak clearly, the machine makes mistakes. These mistakes affect the whole translation. Although machines are getting better, they still have trouble with accents or unclear words just like people. This shows again how important it is for pronunciation to be clear.

Experienced interpreters are usually better at handling unclear speech. Tiselius and Jenset

(2011) found that professionals can guess words from context and stay calm when they don't catch everything. They use their experience and knowledge to keep going. But beginners often pause or make mistakes when they don't understand what was said.

Ali (2014) said that unclear speech like bad pronunciation, fast talking, or strong accents makes interpreting harder. He suggested that speakers at events should try to speak more clearly when there are interpreters. This simple tip can really help improve the quality of interpretation.

Interpreter training is also important. Li (n.d.) showed that students can improve their listening by reading out loud, repeating after speakers, and writing what they hear. These activities help them get used to different accents and speaking styles. Training also teaches them how to guess meaning, break down speech, and summarize when they don't catch everything.

In academic terms, the clarity of pronunciation plays a critical role in enabling interpreters to perform their tasks with both efficiency and accuracy. When speech is not clear, it makes it harder for interpreters to understand and translate, especially for beginners. This can lead to mistakes and slow them down. Many studies show that both students and professional interpreters find unclear speech difficult, but they learn ways to deal with it. Some of these ways are using context, getting better at listening, practicing sight translation, and learning from experience. To make interpreting better, not only interpreters need training, but speakers should also try to speak clearly. As the world becomes more connected and fast-paced, making sure pronunciation is clear will stay important for everyone involved in interpreting.

1.1 Significance of the Study

This study has implications for interpreter training programs, as it emphasizes the importance of exposure to diverse pronunciation patterns. It also contributes to the growing body of research exploring cognitive load in real-time language processing, particularly under phonetic or prosodic constraints. Furthermore, it highlights the real challenges interpreters face and points out the need for better strategies and training to handle unclear pronunciation.

By focusing on pronunciation clarity, the study further adds valuable insight into an area that is often overlooked. It helps both interpreters and trainers understand the connection between how clearly someone speaks and how accurately and quickly the message is interpreted. This can lead to better interpreter performance and improved communication in international settings where real-time translation is needed.

Moreover, the findings of this research are expected to offer valuable insights for interpreter training programs, curriculum developers, and working professionals. By identifying pronunciation clarity as a variable that can significantly influence interpreting performance, the study contributes to a better understanding of the conditions under which interpreters work most effectively.

1.2 Objectives of the Study

The objectives of the present study are:

1. To investigate how unclear pronunciation influences the accuracy of simultaneous interpretation.
2. To examine the influence of pronunciation clarity on the speed of interpretation.
3. To identify and analyze the primary challenges encountered by interpreters when speakers exhibit unclear or imprecise pronunciation.
4. To identify the strategies employed by interpreters to manage unclear pronunciation during interpretation.

1.3 Research Questions

The questions of this paper are:

1. To what extent does pronunciation clarity influence the speed of simultaneous interpretation?
2. How does pronunciation clarity affect the accuracy and speed of interpretation across different speech genres?

3. What are the main challenges interpreters face when dealing with unclear pronunciation?
4. What strategies do interpreters use to overcome these challenges?

1.4 Hypotheses of the Study

Based on relevant literature and observations from interpreter training settings, the study puts forward the following hypotheses:

1. Clear pronunciation in the source language leads to higher accuracy in simultaneous interpretation compared to unclear pronunciation.
2. Interpreters will report greater cognitive difficulty and effort when interpreting speech with unclear pronunciation.
3. When faced with unclear pronunciation, interpreters tend to adopt specific coping strategies, such as generalization, omission, or paraphrasing, more frequently than when dealing with clearly pronounced speech.

1.5 Delimitations of the Study

The delimitations of the study are as follows:

1. Population Scope:

   The study focuses solely on Saudi interpreters who have formal education or training in interpretation. This includes participants with Bachelor's, Master's, or PhD degrees in translation or interpretation-related fields.

2. Mode of Interpretation:

   The research is limited to simultaneous interpretation, excluding other modes such as consecutive or sight translation. This choice reflects the unique cognitive demands associated with real-time interpreting.

3. Language Direction:

   Although participants may be bilingual or multilingual, the study does not distinguish

between language pairs or directions (e.g., L1 to L2 or vice versa), focusing instead on the general impact of pronunciation clarity.

4. Instrument Focus:

   Data is collected through a structured questionnaire, meaning the study does not incorporate observational methods, interviews, or experimental simulations.

5. Type of Pronunciation Issues:

   The study emphasizes pronunciation clarity, including factors such as mumbling, speech rate, articulation, and accent. Other paralinguistic features (e.g., tone, volume, intonation) are acknowledged but not studied in depth.

1.6 Definition of Terms

To ensure clarity and consistency throughout the study, the following key terms are defined as they are used in this research:

1. Simultaneous Interpretation (SI):

   A mode of interpreting in which the interpreter renders the message from the source language into the target language in real time, with minimal delay. It requires high cognitive processing and rapid linguistic response.

2. Pronunciation Clarity:

   The degree to which spoken words are articulated clearly and are easily understood by listeners. It involves aspects such as proper enunciation, appropriate speech rate, and the absence of slurring or mumbling.

3. Accuracy (in interpretation):

   The faithful rendering of meaning from the source language into the target language without distortion, omission, or addition. It reflects how precisely the interpreter conveys the speaker's message.

4. Speed (in interpretation):

   The interpreter's ability to keep pace with the speaker during simultaneous interpretation without lagging significantly or excessively pausing. It also refers to the overall fluency and timeliness of the interpretation.

5. Saudi Interpreters:

   For the purposes of this study, this term refers to individuals of Saudi nationality who practice or have been trained in interpretation, either professionally or academically.

6. Cognitive Load:

   The mental effort required to perform simultaneous interpretation, including processing the source message, translating it, and producing the target output while listening to the next segment.

7. L1 / L2:

   "L1" refers to the interpreter's first language or mother tongue, while "L2" denotes the second language or any additional language learned later. This study does not focus on any specific language direction.

8. Self-Reported Data:

   Information provided directly by participants based on their personal experiences and perceptions, rather than through observational or experimental methods.

2. Literature Review

Numerous studies have addressed the cognitive and linguistic demands of simultaneous interpreting, though relatively few have directly examined the influence of pronunciation clarity. Gile's Effort Model (2009) remains foundational in this area, proposing that interpreting involves the simultaneous coordination of listening, memory, and production efforts. Any increase in difficulty in one of these areas—such as processing unclear speech—can overload

the interpreter's cognitive resources and affect performance. Gile (2009) emphasized that pronunciation clarity can significantly reduce the cognitive load during simultaneous interpretation. His effort model explains that interpreters allocate limited mental resources among listening, processing, and speaking tasks. When speech is unclear, more effort is spent on decoding, reducing attention available for accurate translation. This study supports the current research's hypothesis that pronunciation clarity can influence interpreting performance by affecting mental effort distribution.

The research by Gile (2009) suggests that unclear pronunciation may increase the listening effort, thereby reducing the capacity available for accurate reformulation. This hypothesis is supported by Collard and Defrancq (2019), who found that challenging input features, including mumbling and unfamiliar accents, led to increased omissions and reformulations among student interpreters.

One early contribution came from Pöchhacker (1995), who looked at how interpreters should focus on meaning rather than translating every single word. He pointed out the importance of fluency and coherence, especially when interpreters deal with different accents. Although pronunciation was not his main focus, his ideas helped set the stage for understanding how speech clarity supports interpretation.

While Pöchhacker (1995) centered his work on the importance of meaning over word-for-word translation, he emphasized fluency and coherence, especially when interpreters encounter different accents. These two elements — fluency and dealing with accented speech — are closely linked to pronunciation clarity, which is the focus of the current study. Although pronunciation clarity was not the explicit subject of his work, his findings laid conceptual groundwork for recognizing that speech delivery features (like pronunciation, accent, and fluency) directly impact the interpreter's ability to comprehend, process, and deliver accurate and timely interpretations.

Shlesinger (1997) continued this work by exploring what makes interpreting high in quality. He found that when speech is unclear because of fast talking, poor articulation, or strong accents, it adds more pressure on the interpreter. This extra mental effort can cause delays or mistakes, showing a direct link between pronunciation and interpretation quality.

A deeper look into the interpreter's mental process was offered by Christoffels, De Groot, and Waldorp (2003). They focused on how memory and word recall are involved in interpreting. Their findings suggested that clearly spoken words are easier for the brain to process and remember. On the other hand, unclear or accented speech can interrupt this process, making it harder to deliver the message smoothly.

Further attention was given to fluency by Macías (2006), who studied silent pauses during interpretation. Her research showed that when interpreters hesitate a lot, it often means they are experiencing mental overload. One reason for this overload is unclear pronunciation in the original speech. Clear input, by contrast, helps interpreters speak more smoothly, with fewer pauses.

The role of pronunciation was also highlighted by Wu (2010), who studied how interpreters are assessed. She observed that when the speaker's words are not clear, even experienced interpreters can struggle, leading to lower scores. This finding points to the importance of having clear speech when evaluating interpreter performance fairly.

Rennert (2010) added more insights by focusing on fluency and how it affects how interpreters are perceived. He found that interpreters who speak confidently and smoothly are rated more positively—even if they make small mistakes. This kind of fluency often depends on how well they understand the source speech, which again depends on pronunciation clarity.

Váňová (2014) examined the details of pronunciation itself. She looked at both the individual sounds and broader patterns like tone, stress, and rhythm. Her study found that when these features follow natural patterns, they help interpreters understand better. But if the

pronunciation is strange or inconsistent, it can slow down the interpreter and lead to mistakes.

Cheung (2013) brought attention to non-native accents and how they affect understanding. She found that strong accents make interpreting harder and slower, and they can even affect how the audience sees the interpreter. This shows that pronunciation does not only affect the interpreter's work, but also the listener's impression.

To address these challenges, Yenkimaleki and Heuven (2013) tested how training interpreters in rhythm and tone could help. Their study showed that when interpreters learn to notice patterns in speech, they handle unclear or accented input better. This proves that training in pronunciation features can lead to better performance.

A similar focus on training was seen in the work of Anisimova, Fedotova, and Fomina (2021). They noticed that new interpreting students often struggled with unclear speech. Because of this, they recommended that training programs include many different pronunciation styles so that students can be ready for real-life situations.

The link between pronunciation and pauses was also explored by Dayter (2021). She found that when speech is too fast or mumbled, interpreters tend to pause more and make more false starts. This leads to less smooth delivery, showing once again how clarity in pronunciation supports fluency.

Ostonova (2023) looked at the general challenges of simultaneous interpretation, including the need for speed and accuracy. She explained that unclear pronunciation adds more pressure, often causing slower or less accurate interpretation. Her work showed that pronunciation problems are not small issues—they are central to the task.

Lim and Fan (2023) studied interpretation in Taiwan and found similar results. When Mandarin was spoken clearly, interpreters performed better. But when accents changed the way words were pronounced, it caused more misunderstandings. This shows how clear pronunciation is important not just for understanding, but for overall quality in multilingual

communication.

Further support for this view came from Ержан and Йлмаз (2024), who explored how unclear speech affects both listening and speaking during interpretation. They found that when words were not clearly pronounced, interpreters often missed parts of the message, paused more, or slowed down. This made it clear that pronunciation clarity has a direct effect on interpreter performance.

Colina (2024) added a theoretical perspective by connecting interpretation with phonetics and phonology. She pointed out that interpreters must quickly recognize many types of sounds, especially in different languages. Her work showed that understanding speech patterns is not just helpful it is necessary for doing the job well.

Despite these contributions, there remains a notable gap in empirical research that directly isolates and tests the impact of pronunciation clarity on interpreting accuracy and speed. This study seeks to fill that gap by employing an experimental design to examine how interpreters perform when exposed to clearly versus unclearly pronounced speech in controlled conditions.

3. Method of Research

This study used a descriptive research design to explore the impact of pronunciation clarity on the accuracy and speed of simultaneous interpretation. The goal was to gather detailed information from professional Saudi interpreters about their real-life experiences, challenges, and strategies when dealing with unclear pronunciation during interpretation tasks.

A quantitative method was used, and the main tool for collecting data was a structured questionnaire. The questionnaire was carefully designed to include both closed-ended questions (like multiple-choice or rating scale questions) and open-ended questions. This mix of question types allowed the researchers to collect both numerical data and personal opinions from the participants.

3.1 Participants

The participants in this study were 33 individuals with different levels of education in the field of translation and interpretation. Their educational backgrounds varied and included Bachelor's, Master's, and PhD degrees. This variety helped the researchers gather insights from people with different levels of academic training and experience. All participants had studied interpretation and were familiar with the challenges of simultaneous interpreting. Their education ensured that they had the necessary knowledge of language skills and interpreting strategies, making their responses reliable and useful for the study.

3.2 Instrument

The questionnaire was the main instrument used in this study. It was designed by the researchers and reviewed by experts to make sure it was clear and related to the topic. The questionnaire had two parts:

- **Part 1** It collected background information about the participants, particularly their level of education.
- **Part 2** It focused on the core of the study questions related to pronunciation clarity, interpretation challenges, and strategies used by the interpreters.

3.3 Data Collection

The data for this study was collected using a structured questionnaire, which was designed to explore how the clarity of a speaker's pronunciation affects the accuracy and speed of simultaneous interpretation. The questionnaire included a mix of closed-ended questions (such as multiple-choice and Likert scale questions) and a few open-ended questions to allow participants to explain their experiences in their own words. Before distributing the questionnaire, the researchers made sure it was clear, relevant, and aligned with the study's goals.

The questionnaire was reviewed by experts in the field of translation and interpretation to

ensure that the questions were appropriate and easy to understand. After that, the questionnaire was shared online using digital platforms, which made it easy for participants to access and complete it at their convenience. The participants were given clear instructions on how to complete the questionnaire. They were also informed about the purpose of the study and assured that their responses would be kept private and confidential. Participation was completely voluntary, and they had the right to skip any questions or withdraw from the study at any time.

The data collection process took place over a specified period, giving the interpreters enough time to submit their responses. Once the questionnaires were returned, the researchers checked them to ensure that the responses were complete and ready for analysis. This step was important to make sure the data was reliable and useful for answering the study's research questions.

3.4 Data Analysis

The data collected through the questionnaire was analyzed using quantitative methods to understand how pronunciation clarity affects the accuracy and speed of simultaneous interpretation. The main aim was to explore how Saudi interpreters with different education levels (Bachelor's, Master's, and PhD) deal with challenges caused by unclear pronunciation.

The questionnaire included several Likert scale items. Participants rated their answers on a 5-point scale that measured how much they agreed with a statement (from "Strongly Agree" to "Strongly Disagree"). Each answer was given a number from 1 to 5. This made it easy to calculate frequencies (how many participants chose each option), percentages, and mean scores (averages).

After collecting the responses, the data was organized based on the participants' level of education. This allowed the researchers to compare the experiences of each group. For example, the analysis looked at whether PhD holders faced fewer problems with pronunciation clarity or used different strategies compared to those with a bachelor's or master's degree.

The results were presented using tables to make the information clearer. This helped highlight common issues, such as dealing with strong accents, fast speech, or poor microphone quality. The researchers also examined which strategies were most commonly used to overcome these problems, such as training in phonetic awareness or practicing with different speech styles.

4. Results

Section 1: Challenges Related to Pronunciation Clarity in Simultaneous Interpretation

This section investigates the difficulties interpreters face when dealing with unclear pronunciation, including issues like fast-paced speech, strong accents, poor articulation, and technical limitations (e.g., microphone quality). The results are analyzed based on participants' educational backgrounds (Bachelor's, Master's, and PhD) to determine whether academic level influences perceptions of these challenges. The results are presented in table 1 below.

Table 1

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		F	Sig.
					Lower Bound	Upper Bound		
Bachelor	11	3.5598	.72482	.21854	3.0729	4.0467	.873	.428
Master	12	3.5658	.77128	.22265	3.0757	4.0558		
PhD	10	3.9211	.62975	.19914	3.4706	4.3715		
Total	33	3.6715	.71284	.12409	3.4187	3.9242		

A one-way analysis of variance (ANOVA) was conducted to examine differences in Challenges Related to Pronunciation Clarity in Simultaneous Interpretation across three educational levels (Bachelor's, Master's, and PhD). A one-way ANOVA revealed no statistically significant differences in perceived challenges among the three educational groups, $F(2, 30) = 0.873$, $p = .428$. The mean scores were similar across the Bachelor's degree group (M = 3.56, SD = 0.72, 95% CI [3.07, 4.05]), Master's degree group (M = 3.57, SD = 0.77, 95% CI [3.08, 4.06]), and PhD group (M = 3.92, SD = 0.63, 95% CI [3.47, 4.37]). While the PhD group demonstrated a slightly higher mean score compared to the other two groups, this

difference did not reach statistical significance. The total sample (N = 33) had an overall mean of 3.67 (SD = 0.71), with a 95% confidence interval ranging from 3.42 to 3.92.

Section 2: **Strategies for Overcoming Pronunciation Clarity Challenges in Simultaneous Interpretation**

This section explores various techniques interpreters use to manage pronunciation-related difficulties, such as active listening, exposure to different accents, and training in phonetic awareness. Like the first section, the data is analyzed across different educational levels to assess variations in strategy effectiveness. The results are presented in table 2 below.

Table 2

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		F	Sig.
					Lower Bound	Upper Bound		
Bachelor	11	3.8136	.58013	.17491	3.4239	4.2034	.438	.650
Master	12	3.7080	.45385	.13102	3.4196	3.9964		
PhD	10	3.9250	.59500	.18816	3.4994	4.3506		
Total	33	3.8090	.53253	.09270	3.6201	3.9978		

A one-way analysis of variance (ANOVA) was conducted to examine differences in strategies for overcoming pronunciation clarity challenges in simultaneous interpretation across three educational levels (Bachelor's, Master's, and PhD). Results indicated no statistically significant differences among the three groups, F(2, 30) = 0.438, p = .650. The mean scores were comparable across the Bachelor's degree group (M = 3.81, SD = 0.58, 95% CI [3.42, 4.20]), Master's degree group (M = 3.71, SD = 0.45, 95% CI [3.42, 4.00]), and PhD group (M = 3.93, SD = 0.60, 95% CI [3.50, 4.35]). Although the PhD group showed a slightly higher mean score than the other groups, and the Master's group showed the lowest mean score, these differences did not reach statistical significance. The total sample (N = 33) had an overall mean of 3.81 (SD = 0.53), with a 95% confidence interval ranging from 3.62 to 4.00.

Section 3: **Interpreters' Responses of the Challenges Related to Pronunciation Clarity in**

Simultaneous Interpretation

A detailed summary of interpreters' responses regarding the specific challenges they face in simultaneous interpretation is presented in Table 3: Interpreters' Perceptions of Challenges Related to Pronunciation Clarity.

Table 3

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Mean	SD
Poor pronunciation clarity significantly reduces the accuracy of simultaneous interpretation.	18.2	48.5	15.2	12.1	6.1	3.60	1.116
Unclear articulation by speakers leads to frequent misinterpretations.	21.2	54.5	9.1	9.1	6.1	3.7576	1.09059
Accents and dialectal variations in pronunciation slow down my interpretation speed.	18.2	51.5	12.1	9.1	9.1	3.6061	1.17099
Fast-paced speech with unclear pronunciation makes it difficult to keep up while interpreting.	30.3	36.4	21.2	6.1	6.1	3.7879	1.13901
Mumbling and low voice projection by speakers create comprehension difficulties.	27.3	33.3	30.3	3.0	6.1	3.7273	1.09752
Pronunciation errors in names, numbers, and technical terms cause major interpretation challenges.	15.2	45.5	27.3	6.1	6.1	3.57576	1.031695
Overlapping speech with unclear pronunciation makes simultaneous interpretation overwhelming.	18.2	48.5	21.2	6.1	6.1	3.6667	1.05079
Poor microphone quality during remote interpretation affects pronunciation clarity and accuracy.	27.3	30.3	33.3	6.1	3.0	3.7273	1.03901

Strong regional accents increase cognitive load and affect real-time interpretation.	27.3	42.4	15.2	12.1	3.0	3.7879	1.08275
Lack of prior exposure to a speaker's pronunciation style negatively impacts my performance.	21.2	51.5	12.1	9.1	6.1	3.7273	1.09752
Slurred speech and poor enunciation in live events make interpretation challenging.	9.1	60.6	24.2	6.1	0.0	3.7273	.71906
Speakers who do not pause between sentences make it harder to adjust to pronunciation issues.	15.2	48.5	30.3	3.0	3.0	3.6970	.88335
Background noise can obscure pronunciation clarity, affecting interpretation quality.	18.2	48.5	21.2	9.1	3.0	3.6970	.98377
Lack of phonetic awareness training in interpreter education limits my ability to handle unclear pronunciation.	21.2	39.4	18.2	15.2	6.1	3.5455	1.17502
Sudden shifts in pronunciation speed create difficulties in maintaining interpretation accuracy.	6.1	51.5	18.2	12.1	12.1	3.2727	1.15306
Inconsistent pronunciation of loanwords and borrowed terms disrupts the flow of interpretation.	21.2	36.4	27.3	6.1	9.1	3.5455	1.17502
Medical or legal terminology with unclear pronunciation is particularly difficult to interpret accurately.	24.2	42.4	21.2	12.1	0.0	3.7879	.96039
Lack of visual cues, such as lip movements, makes unclear pronunciation	24.2	42.4	21.2	9.1	3.0	3.7576	1.03169

harder to understand.							
Cognitive overload due to frequent pronunciation errors affects overall interpretation efficiency.	21.2	48.5	18.2	9.1	3.0	3.7576	1.00095
Listeners often misjudge the interpreter's skill when pronunciation issues originate from the speaker.	21.2	48.5	18.2	9.1	3.0	3.7576	1.00095
Total						3.67	.712

Analysis of the Results of Section 3

The results in table 3 highlight several challenges that interpreters face when dealing with unclear pronunciation during simultaneous interpretation. The overall mean score of 3.67 shows that participants generally view pronunciation-related issues as significant obstacles to effective interpreting. In this study, we will explore the most important findings, moving from the most critical challenges to the less severe ones, while also discussing some important statistical observations.

To begin with, the study found that certain challenges were perceived by interpreters as particularly significant and impactful on the interpreting process. One major difficulty was fast-paced speech with unclear pronunciation, which had a high mean score of 3.78. Interpreters reported struggling to keep up when speakers talked quickly without pronouncing words clearly. Similarly, medical or legal terminology with unclear pronunciation also caused major difficulties, especially because technical terms need to be translated with precision. Strong regional accents also posed significant challenges, increasing cognitive load and reducing processing speed during interpretation.

Moreover, unclear articulation often led to frequent misinterpretations, while the lack of visual cues such as the inability to see the speaker’s lips or facial expressions—made the interpreter’s job even harder, especially in remote settings. Finally, cognitive overload caused

by frequent pronunciation errors was another major challenge, leading to fatigue and lower performance during interpreting tasks.

Although the above challenges were the most significant, the study also identified a set of moderately serious challenges. For example, overlapping speech with unclear pronunciation made it very difficult for interpreters to focus, especially during live events with multiple speakers. Background noise was another issue, as it often masked important parts of the speaker's message. Furthermore, interpreters noted that not being familiar with a speaker's pronunciation style and poor microphone quality in remote settings made their job harder. Notably, some interpreters pointed out that listeners sometimes misjudge the interpreter's skill because of a speaker's poor pronunciation, which can be both frustrating and unfair for professionals doing their best in difficult conditions.

Moving to the less critical challenges, the findings showed that some issues, while still present, were not as pressing. For instance, sudden shifts in pronunciation speed were challenging, but interpreters appeared to adapt to these shifts better than to other problems like accents or unclear articulation. Similarly, concerns about the lack of phonetic awareness training during interpreter education varied among participants, suggesting that while some felt unprepared, others may have received better training. Another minor challenge was the inconsistent pronunciation of loanwords and borrowed terms, although interpreters generally managed these cases better than others.

Looking more closely at the statistical patterns, some interesting observations emerged. Challenges like fast-paced speech and strong regional accents showed higher standard deviations, meaning participants had more varied opinions about how difficult these issues were. On the other hand, slurred speech and poor enunciation had a lower standard deviation, showing strong agreement among interpreters that this issue is indeed a major obstacle. Overall, since most challenges had mean scores above 3.5, it is clear that pronunciation issues are widely

recognized as a significant barrier in simultaneous interpretation.

The findings clearly show that fast speech, unclear articulation, strong accents, and poor audio quality are the biggest pronunciation-related challenges for interpreters. While issues like loanword inconsistencies and changing speech speeds are less critical, they still matter. The study also underlines the importance of visual cues, better phonetic training, and exposure to speakers' pronunciation styles to help interpreters perform more effectively. Addressing these challenges can lead to better interpretation quality, less stress for interpreters, and smoother communication in settings where every word matters.

The subsequent section addresses the strategies proposed to overcome challenges related to pronunciation clarity in simultaneous interpretation. The table below shows the interpreters' responses concerning the strategies that can help them overcome the challenges they encounter in simultaneous interpretation.

Section 4: Interpreters' Responses of the Strategies for Overcoming Pronunciation Clarity Challenges in Simultaneous Interpretation

Table 4

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)	Mean	SD
Pre-event exposure to speakers' voices and pronunciation styles improves interpretation accuracy.	9.1	42.4	42.4	3.0	3.0	3.5152	.83371
Regular training in phonetic awareness enhances my ability to handle unclear pronunciation.	24.2	45.5	21.2	6.1	3.0	3.8182	.98281
Anticipating pronunciation difficulties helps me adjust my interpretation strategies.	24.2	48.5	21.2	6.1	0.0	3.9091	.84275
Using context clues allows me to	21.2	51.5	18.2	6.1	3.0	3.8182	.95048

compensate for unclear pronunciation.							
Note-taking during interpretation helps manage pronunciation-related challenges.	18.2	42.4	24.2	6.1	9.1	3.5455	1.14812
Familiarity with specialized terminology reduces the impact of pronunciation issues.	12.1	57.6	21.2	9.1	0.0	3.7273	.80128
Practicing active listening improves my ability to interpret unclear speech accurately.	33.3	54.5	6.1	3.0	3.0	4.1212	.89294
Developing strategies to handle fast speech helps me mitigate pronunciation-related errors.	18.2	45.5	30.3	6.1	0.0	3.7576	.83030
Exposure to different accents and dialects increases my ability to interpret diverse speakers effectively.	24.2	48.5	24.2	3.0	0.0	3.9394	.78817
Repetition exercises improve my capacity to recognize words despite unclear pronunciation.	27.3	39.4	24.2	6.1	3.0	3.8182	1.01411
Mindfulness and stress management techniques help me stay focused despite pronunciation challenges.	21.2	54.5	12.1	3.0	9.1	3.7576	1.11888
Requesting pronunciation clarifications during preparation sessions enhances my interpretation accuracy.	24.2	54.5	18.2	3.0	0.0	4.0000	.75000
Using real-time monitoring tools (e.g., speech-to-text software) helps me catch mispronounced words.	21.2	48.5	27.3	0.0	3.0	3.8485	.87039
Working in pairs or teams allows interpreters to assist	25.0	53.1	18.8	0.0	3.1	3.9688	.86077

each other with pronunciation difficulties.							
Interpreting from written scripts (when available) minimizes pronunciation-related errors.	34.4	40.6	15.6	6.3	3.1	3.9688	1.03127
Practicing shadowing techniques with various speech samples strengthens my adaptation skills.	15.6	53.1	21.9	3.1	6.3	3.6875	.99798
Training in rapid decision-making improves my ability to quickly adjust to pronunciation issues.	18.8	62.5	9.4	3.1	6.3	3.8438	.98732
Focusing on meaning rather than exact wording helps overcome pronunciation barriers.	21.9	50.0	18.8	6.3	3.1	3.8125	.96512
Continuous professional development on speech clarity enhances my interpretation performance.	18.8	65.6	12.5	0.0	3.1	3.9687	.78224
Providing feedback to speakers on pronunciation clarity can improve overall interpretation quality.	18.8	40.6	28.1	3.1	9.4	3.5625	1.13415
Total						3.8090	.53253

Analysis of the results of Section 4

The results in table 4 shed light on the different strategies interpreters use to deal with pronunciation clarity challenges during simultaneous interpretation. With an overall mean score of 3.81, it's clear that interpreters generally view these strategies in a positive light. In the following paragraphs, we will walk through the most effective strategies, those considered moderately helpful, and others that received more mixed reactions.

To start, the results show that some strategies stand out as highly effective. Practicing active

listening was the top-rated strategy, with a mean score of 4.12. This highlights how important it is for interpreters to fully concentrate on the speaker, even when pronunciation is unclear. Another highly effective method was requesting pronunciation clarifications, which earned a mean score of 4.00. Many interpreters found it useful to seek clarification before the event starts, during preparation sessions, to avoid confusion later. Exposure to different accents and dialects was also seen as very helpful. With a mean score of 3.94, this strategy suggests that interpreters who are familiar with a wide range of speech styles are better equipped to manage pronunciation issues.

Subsequently, the study also identified several strategies that, while still effective, received slightly lower evaluation scores. For example, using context clues was a common technique, helping interpreters figure out unclear words based on surrounding information. However, with a mean score of 3.82, it's clear that while helpful, it may not always be foolproof. Repetition exercises also scored similarly, indicating that practicing speech patterns and accents ahead of time can improve interpretation accuracy. Additionally, interpreters reported that developing strategies for fast speech was valuable, as it allowed them to better keep pace during rapid conversations. Finally, mindfulness and stress management techniques were mentioned as helpful for staying focused, though their effectiveness varied depending on the individual.

Not all strategies, however, were viewed equally. Some received lower scores, suggesting more mixed feelings among interpreters. For instance, providing feedback to speakers during or after interpretation was seen as somewhat controversial. While some interpreters believed it could help speakers improve their clarity, others felt it was impractical, especially during live sessions. Note-taking during interpretation was another strategy that received a lower mean score, showing that while it may help in some cases, it is not the most effective method for handling unclear pronunciation during fast-paced events.

When looking at the statistical observations, the variations in responses became even more

evident. Strategies like note-taking and providing feedback to speakers had higher standard deviations, which means interpreters had different opinions about their effectiveness. On the other hand, requesting pronunciation clarifications had a lower standard deviation, showing stronger agreement among interpreters about its effectiveness. Overall, most strategies had mean scores higher than 3.5, reflecting a generally positive perception of the tools interpreters use to tackle pronunciation problems.

Thus, based on the participants' responses, the study suggests that active listening, exposure to different accents, and pre-event clarifications are the most reliable strategies for interpreters dealing with unclear pronunciation. Other methods like context clues, repetition exercises, and mindfulness techniques are also helpful, but their success can vary from person to person. Meanwhile, strategies such as providing feedback to speakers and note-taking seem less universally effective, highlighting the need for interpreters to adapt their techniques based on the situation. Overall, while pronunciation challenges are tough, interpreters have a range of practical strategies to manage them successfully. Overall, fast-paced speech, unclear articulation, and strong accents were consistently rated as the most disruptive factors, underscoring the need for targeted training and environmental adjustments.

5. Discussion of the Results in Sections 1,2,3, and 4

Based on the results, it can be said that many parts of this research agree with earlier studies. For example, Yang (2019) and Gile (2009) explained how unclear pronunciation makes interpreters use more mental energy, which can slow them down and cause stress. This idea of "cognitive overload" came through strongly, especially when interpreters had to listen carefully, think fast, and speak all at the same time. Accents were another common issue. Consistent with the observations of Cheung (2013) and Lim and Fan (2023), strong regional accents were characterized as "mental speed bumps" that hindered the flow of interpretation and made it more challenging for interpreters to maintain pace.

At the same time, this study brought up new points. While Váňová (2014) emphasized rhythm and tone, this research showed that technical words especially in fields like medicine can cause serious problems if mispronounced. For example, a rushed or unclear version of a word like "anticoagulant" might be heard incorrectly, possibly leading to harmful mistakes. This shows how pronunciation problems can affect more than just speed they can have real-world consequences in high-stakes environments.

Remote interpretation added another layer of difficulty. While Fügen, Waibel, and Kolss (2007) discussed how audio quality affects understanding, interpreters in this study shared that not being able to see the speaker's mouth or facial expressions made their job much harder. Without visual cues, even simple words could be misunderstood. This connects with Macías (2006), who spoke about how speech pauses and fluency affect interpretation, but now this challenge extends to digital settings where online interpretation is common.

Interpreters shared several strategies to deal with these problems. Active listening came up as the most effective approach, matching Shlesinger's (1997) views on the importance of careful listening. However, interpreters described it using more emotive language, such as "tuning into the speaker's heartbeat," which illustrates the intense level of concentration required. They also investigated preparing by watching movies or listening to podcasts with different accents, which adds a real-world touch to the idea of rhythm training mentioned by Yenkimaleki and Heuven (2013).

However, not every approach from past studies worked in practice. For instance, Xu (2015) focused on preparation before an event, but many interpreters said they often don't have the chance to ask questions while working. Instead, they guess meaning based on context, which can be risky. This supports Pöchhacker's (1995) idea that conveying meaning is sometimes more important than word-for-word accuracy, but also shows a gap between training and the reality interpreters face.

There are important lessons to take from this. Interpreter training programs should include more real-life challenges like fast speech, poor sound, and background noise—to better prepare future professionals. Speakers also have a role to play. As Ali (2014) suggested, speaking clearly and slowly, especially when using technical words, can make a huge difference. Technology can also help. Better microphones, noise-reducing tools, and visual aids can make remote interpretation smoother and less stressful.

Above all, this study reminds us that interpretation is a shared effort. It's not just about the interpreter's skill. Clear communication, good preparation, and mutual respect between speaker and interpreter are key. When a speaker takes time to pronounce their words clearly, or an interpreter leans in to understand a difficult term, they're doing more than just translating they're building a bridge between languages and people. In places where communication really matters, like hospitals or courtrooms, that bridge can make all the difference.

6. Limitations of the Study

Despite careful design, the study has certain limitations that should be acknowledged:

1. Self-Reported Data:

   The data relies on participants' self-assessments and recollections, which may be influenced by subjective bias or memory lapses.

2. Sample Size and Diversity:

   With a relatively small sample size (33 participants) drawn from a specific cultural and educational background, the findings may not be generalizable to interpreters from other regions or training systems.

3. Lack of Real-Time Observation:

   The study does not include live or recorded interpretation sessions to directly measure accuracy, speed, or coping mechanisms.

4. Uncontrolled Variables:

   The study does not control for other factors that may affect interpretation quality, such as background noise, interpreter fatigue, or topic complexity.

5. Technological and Environmental Factors:

   Although pronunciation clarity may be influenced by microphone quality, internet speed (in remote interpreting), or acoustic conditions, these were not accounted for in the questionnaire.

7. Conclusion

The findings of this study highlight the significant challenges that interpreters face during simultaneous interpretation when speaker pronunciation is unclear. The study revealed that poor pronunciation especially when combined with fast speech makes it difficult for interpreters to keep up, often resulting in misunderstandings. This issue ranked among the most pressing, with a high average score of 3.78, pointing to its strong impact on interpretation performance.

The findings also showed that unclear articulation of specialized terms, such as legal and medical vocabulary, increases the risk of serious errors. Strong regional accents and poor articulation further intensify the mental demands placed on interpreters, particularly in remote or online settings where visual cues are missing. These pronunciation issues often lead to fatigue and reduced performance over time due to cognitive overload.

Moderate challenges included overlapping speech, background noise, and poor audio equipment, which made it harder to follow the speaker's message. Less severe, but still noteworthy, were challenges like inconsistent pronunciation of foreign words and sudden speech rate changes. Some interpreters also expressed concern that their education did not fully prepare them to handle unclear pronunciation, although this view was not shared by all.

Importantly, the study found no major differences in the severity of challenges, or the effectiveness of strategies based on educational background. Interpreters across all levels

Bachelor's, Master's, and PhD reported facing similar issues and relying on similar strategies, such as active listening and phonetic training.

The findings strongly confirm that unclear pronunciation is a widespread and serious problem in simultaneous interpretation. While interpreters use several coping strategies, these do not fully eliminate the challenges. Therefore, the study suggests the need for enhanced interpreter training focused on managing unclear speech, different accents, and pronunciation styles to improve both accuracy and speed in real-time interpretation.

8. Acknowledgement

This research received grant no. (561/2024) from the Arab Observatory for Translation (an affiliate of ALECSO), which is supported by the Literature, Publishing & Translation Commission in Saudi Arabia.

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