Impact of Explicit and Implicit Instruction on EFL Learners' Segmental Pronunciation Accuracy of Transparent and Non-Transparent Words

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Abstract

This study examines the impact of explicit and implicit pronunciation instruction on the segmental pronunciation accuracy of phonemes /s/ and /z/ in an EFL classroom of 11th-grade Spanish-speaking students. The research focuses on transparent and non-transparent words containing the grapheme <s> and the phonemes /s/ and /z/ and was conducted in a Chilean rural vocational high school over four weeks, using a quasi-experimental one-group repeated-measures design with convenience sampling. Four students participated in four 90-minute sessions with two different conditions: two sessions for the implicit instruction condition and two sessions for the explicit instruction condition, each followed by a segmental pronunciation accuracy post-test. The results showed that students consistently performed well with transparent words, benefiting from clear grapheme-phoneme correspondences aligned with their L1 orthography in both conditions. In contrast, non-transparent words posed greater challenges across conditions, indicating that the type of instruction does not play a role when it comes to grapheme-phoneme incongruencies. These findings imply that transparent words serve as effective foundational tools for pronunciation, while non-transparent words require tailored teaching approaches to address grapheme-phoneme incongruencies. The limitations and recommendations for pronunciation instruction of transparent and non-transparent words are also discussed in this article.

Keywords: English as a Foreign Language, Pronunciation Instruction, Non-Transparent Words, Pronunciation Accuracy.

Introduction

Over time, pronunciation instruction has either been brought to the forefront or relegated to the background of language teaching. According to Celce-Murcia, Brinton, & Goodwin (2010), the international language teaching profession has shifted its stance on teaching pronunciation several times. It is also observed that once a central focus in language teaching, pronunciation diminishes in importance, the Communicative

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Language Teaching (CLT) approach shifts the emphasis from form to meaning. Similarly, in Second Language Teaching (SLT), pronunciation was, for a time, considered largely irrelevant, with greater emphasis placed on vocabulary and grammar (Goodwin, 1996; Kelly, 1969; Nunan, 2015). Despite these shifts, understandable pronunciation is a challenging skill for foreign language learners to acquire, necessitating considerable practice and effort (Aliaga García, 2007; Gilakjani, 2016; Martínez-Flor, Usó-Juan, & Soler, 2006).

Pronunciation in foreign languages can be particularly challenging due to the differences in phonetic inventories and sound systems across languages (Nyarks & Owushi, 2022). Indeed, these differences often lead to difficulties for speakers of one language when trying to learn another, especially if the target language contains sounds do not present in their native language (Nyarks & Owushi, 2022). When students are presented with phonemes that are not used in their own language, they typically show performance that is not as good as a native speaker of the language from which the phonemes were selected (Bradlow et al., 1997; Munro, Flege, & Mackay, 1996; Rochet, 1995; Schmidt, 2001). Furthermore, pronunciation performance can also be modulated by the transparency of the target language. Some languages are deemed more transparent than others because there is a clear correspondence between the orthography of the language and its pronunciation (Bassetti, 2023; Hayes-Harb & Barrios, 2021; Levis, 2024). Spanish is a transparent language, while English is opaque or non-transparent (Fabra, 2022; Hayes-Harb & Barrios, 2021). Following the same logic, when it comes to words, they can also be operationalized as transparent and non-transparent (Castles et al., 2003). Transparent words are those with a clear grapheme-phoneme correspondence, such as words with correspondence of grapheme <s> and phoneme /s/, while non-transparent words are those without a clear grapheme-phoneme correspondence, such as words with grapheme <s> and phoneme /z/. An example of transparent and non-transparent words are the words his and is. In the word 'his', the grapheme <s> has a correspondence with the phoneme /s/; in the case of 'is', the grapheme <s> does not have a correspondence with the phoneme /s/ but with /z/, making it non-transparent.

This study aimed to examine the impact of pronunciation instruction on the segmental pronunciation accuracy of transparent and non-transparent words in an EFL classroom. Notably, the main objective was to examine the effect of explicit and implicit pronunciation instruction on the segmental pronunciation accuracy of transparent and non-transparent words with phonemes /s/ and /z in a group of high-school Spanish speakers, learners of English as a foreign language. The rationale behind this study was that EFL learners of native languages with transparent orthographies, such as Spanish, could experience difficulties in the acquisition of sounds from an opaque L2 orthographic system, such as English (Bassetti, 2023; Bradlow et al., 1997; Castles et al., 2003; Erdener & Burnham, 2005; Escudero & Wanrooij, 2010; Georgiou, 2021; Munro, 1993; Rochet, 1995; Schmidt, 2001; Werker, 1989).

In addition, unlike English, the phoneme /z/ is not part of the Spanish phonological inventory, and the correspondence between the grapheme <s> and the phoneme /s/ is consistent. To test the difficulty associated with transparency and pronunciation in the English foreign language classroom (hereinafter, EFL), the study used implicit and explicit instruction to teach the pronunciation of transparent (words with grapheme <s> and phoneme /s/) and non-transparent words (words with grapheme <s> and phoneme /z/) to Spanish-speaking EFL learners. The hypothesis was that the method of instruction would influence the segmental pronunciation accuracy of non-transparent words. For this purpose, this study analysed key topics like L2 pronunciation, EFL pronunciation instruction within the context of foreign language teaching and learning, explicit and implicit instruction, L2 orthographic input, transparent and non-transparent languages and their link to EFL instruction, Spanish and English as transparent and non-transparent languages and segmental pronunciation accuracy. Thus, our premise in this study is that explicit instruction should facilitate the segmental pronunciation of linguistic units, such as non-transparent words, that are particularly challenging for native speakers of Spanish in the EFL classroom.

Literature Review

Pronunciation in Foreign Languages

Yates (2002) defines pronunciation as the production of sounds used to convey meaning. It covers segmentals, which are sounds of a language, and suprasegmentals, which go beyond the level of individual sounds (word stress, rhythm, sentence stress, intonation). Otlowski (1998) and Richards & Schmidt (2013) indicate that pronunciation refers to the customary way words are spoken and involves the production of specific sounds. Pronunciation in foreign languages can be particularly challenging due to the differences in phonetic inventories and sound systems across languages (Nyarks & Owushi, 2022). Most languages have differences in segmental and suprasegmental aspects, and that is why teaching pronunciation at early stages of language acquisition is vital, and the focus should be on these differences (Kráľová, Nemčoková, & Datko, 2021). Indeed, these differences often lead to difficulties for speakers of one language when trying to learn another, especially if the target language contains sounds not present in their native language (Nyarks & Owushi, 2022).

Furthermore, there are many factors influencing successful pronunciation learning. Kenworthy (1987) names the most prominent factors that have a significant impact on pronunciation: (a) native language of the

learner; (b) age of the learner; (c) exposure to the target language; (d) phonic ability of the learner; (e) attitude of the learner, and (f) motivation of the learner. These factors are crucial in determining the ease or difficulty with which learners can improve their pronunciation skills (Kráľová et al., 2021). Understanding these elements is essential for effectively addressing pronunciation challenges in language learning (Kenworthy, 1987). In the case of the study, we will focus on learners' first language and its influence on pronunciation; notably, we are working under the premise that language learners draw on the patterns of their first language and apply them in the foreign language (Kráľová, 2011).

Pronunciation Instruction Within the Context of Foreign Language Teaching and Learning

Even though it is generally known that pronunciation plays a vital role in foreign language communication, there is not enough emphasis on teaching and practicing correct pronunciation (Kráľová, 2011). Research suggests that teachers often neglect pronunciation and are reluctant to teach it, relying on their intuitions without clear guidance (Derwing & Munro, 2005). Morley (1991) insisted that it is necessary to teach English pronunciation in the ESL or EFL classroom because the teaching of pronunciation is neglected or ignored at many universities and colleges worldwide. Scrivener (2011) believes that many teachers avoid teaching pronunciation because they are not confident enough about their pronunciation or claim they do not have enough time. Gilbert (2008) agrees that teachers avoid pronunciation practice for various reasons, and if they teach pronunciation, they usually bring boring and unrelated topics for language learners. According to Kelly (2000), effective pronunciation teaching helps students produce accurate and intelligible sounds across different social contexts. Instruction methods can include explicit teaching, where rules and patterns are explained, and implicit learning, where students develop pronunciation skills through exposure and practice. The Council of Europe (2001) also recommends teaching and practicing pronunciation from the initial stages of foreign language learning, especially from an early age. According to the Council of Europe (2001), pronunciation is a key concept of communicative competence (Canale & Swain, 1980; Hymes, 1972). Tench (1985) emphasizes the need to create correct pronunciation habits from the start of foreign language learning because corrections at later stages can be frustrating and exhausting if the pronunciation is learned badly. It is problematic to unlearn automatically learned mispronunciations, as it requires a lot of effort for speakers to focus not only on the content but also on correcting their bad pronunciation habits.

EFL Pronunciation Instruction

Mastering English pronunciation is a challenging skill that demands significant time and effort from learners (Aliaga García, 2007; Gilakjani, 2016; Martínez-Flor et al., 2006). Accurate pronunciation is essential, requiring learners to focus on specific aspects of speech sound production (Harlika, Saifuddin, & Fauziyah, 2018). In English, there are three primary aspects of speech sound production: voicing, place of articulation, and manner of articulation, all of which play a critical role in developing clear and precise pronunciation (Ogden, 2024). Further, research highlights that these phonetic details are often difficult for EFL learners, especially those whose native languages do not share similar phonological structures with English (Mouquet & Mairano, 2023; Saito, 2013). As a result, pronunciation instruction in EFL settings is particularly beneficial when it includes explicit guidance on articulating sounds unfamiliar to learners. This is supported by studies showing that explicit instruction can improve learners' awareness and control of these specific articulatory features (Gilakjani & Sabouri, 2016; Pennington & Rogerson-Revell, 2019). The significance of explicit pronunciation instruction is particularly pronounced when addressing specific sounds that present additional challenges due to their varied orthographic representations in English (Pardede, 2018). Research indicates that learners often struggle with sounds that do not have direct equivalents in their native languages, leading to mispronunciations that can hinder communication (Derwing & Munro, 2005).

Explicit and Implicit Instruction

Instruction refers to the activities of teaching, which involve guiding learners in acquiring knowledge or skills (Richards & Renandya, 2002). In pronunciation teaching, instruction can take various forms, such as implicit or explicit approaches, each influencing learners' ability to acquire accurate pronunciation in distinct ways. It is implied that implicit instruction closely resembles the process of first language acquisition, where learning occurs unconsciously and automatically. Namely, implicit instruction refers to the unconscious acquisition of language structures through natural exposure, without direct grammar instruction (Ellis, 2009a). In this approach, learners are placed in an environment where they absorb the rules and patterns of the target language without conscious effort, allowing them to infer underlying grammatical structures without explicit awareness (Ellis, 2009b). In implicit instruction, learners are not explicitly taught rules or directed to focus on specific language forms. Instead, they are exposed to the language in context, often through communication or interaction, and they acquire knowledge of language structures more naturally, without conscious awareness of the underlying rules. In a classroom with an implicit pronunciation approach, teaching is naturally integrated into language use without explicitly directing students' attention to specific sound forms. Students learn to pronounce sounds correctly through exposure and practice in authentic communicative contexts without receiving explicit instructions or technical details on producing the sound. Correction and teaching of pronunciation occur spontaneously during interaction, avoiding interruptions in

communication to focus on the target form. There is no use of technical terminology to explain pronunciation; instead, natural and free use of the language is encouraged (Peltekov, 2020; Stratton, 2023a).

Explicit instruction involves the conscious learning of language rules through formal instruction, where learners are aware of the language features being taught (Ellis, 2009b). In this approach, learners are taught rules and encouraged to develop a metalinguistic awareness of these rules (Ellis, 2009b). Archer & Hughes (2010) and Rosenshine (1987) describe explicit instruction as a systematic and organized teaching method, including small steps, checking for understanding, and achieving active and successful participation by all students. Explicit instruction, therefore, serves as a valuable tool that increases students' academic knowledge and promotes active engagement in the learning process. In a classroom with an explicit approach, pronunciation is taught in a planned and detailed manner. The teacher directs students' attention to specific sounds, explaining how they are produced, including articulatory and phonetic aspects. Pronunciation practice is controlled and structured, with exercises designed to perfect accuracy in sound production. This approach may interrupt the natural flow of conversation to focus on correction and refinement of pronunciation, and technical terminology is used to describe sound production, providing students with a conscious and detailed understanding of the technical aspects of pronunciation (Peltekov, 2020; Stratton, 2023b).

In recent decades, the efficiency of implicit and explicit instruction methods has been a significant area of scholarly research, particularly in language acquisition. Research consistently points to the superiority of explicit instruction over implicit instruction in various aspects of language learning. For example, it has been widely demonstrated that explicit instruction leads to better outcomes than implicit instruction by providing learners with clear, structured guidance on pronunciation features, which enhances their accuracy and confidence in producing these sounds (Luo, Shao, & Wareewanich, 2022) Additionally, the majority of research comparing the effects of implicit and explicit instruction on the pronunciation and listening comprehension of learners of English indicates that explicit teaching methods are generally more effective than implicit methods (Abdi, 2010; Couper, 2003; Derwing, Munro, & Wiebe, 1998; Doan, 2013; Ghorbani, Neissari, & Kargozari, 2016; Gordon & Darcy, 2022; Gordon, Darcy, & Ewert, 2013; Khaghaninejad & Maleki, 2015; Khanbeiki & Abdolmanafi-Rokni, 2015; Koike, 2014; Mohseni, 2011; Saito, 2013; Stratton, 2023b).

L2 Orthographic and L2 Pronunciation

Many language teachers are aware of the effects of L2 orthography on L2 pronunciation; this happens because written representations provide a visual analysis of language. For instance, the English writing system represents phonemes as individual letters and words as strings of letters separated by spaces, although neither phonemes nor words are isolated units in the spoken language. Writing systems also vary along a continuum of phonological transparency, with some writing systems showing a highly regular correspondence between the written symbols and the sounds of the language and other writing systems having much less regular correspondence between orthography and phonology. While orthographic input can help L2 learners produce target L2 pronunciations, it can also lead to some non-target-like pronunciations, which would probably never occur if learners were only exposed to acoustic input. This is because the L2 orthographic input interacts with the acoustic input, thus affecting L2 learners' mental representations of L2 phonology. Pennington (1996) proposed that orthography might cause L2 learners to mistakenly equate L2 sounds with L1 sounds, suggesting that the written form of a language could create misleading associations between sounds in the two languages. For instance, Spanish learners of English can add a vowel before 'Spain', pronouncing it as *'Espain'; this is due to their L1 syllable structure, which does not allow the sequence /sp/ in word-initial position (asterisks denote non-target-like pronunciations). This phenomenon indicates that, unlike native speakers—where orthography primarily affects phonological awareness tasks—L2 learners may have their pronunciation influenced by orthographic input. This effect may occur because L2 learners often have not fully mastered the target phonology before being exposed to orthographic cues. This also shows that orthographic input can be an important factor in the acquisition of second language phonology (Norris & Ortega, 2000). In this regard, we believe that the consistency of the grapheme-phoneme mappings in Spanish, such as the grapheme <s> and the phoneme /s/, should influence the pronunciation of incongruent grapheme mappings in English, such as the grapheme <s> and the phoneme /z/.

Transparent and Non-Transparent Languages and Their Link to EFL Pronunciation Instruction

It is widely recognized that languages vary in complexity regarding phonology, spelling, and grammar. More complex language systems tend to pose greater challenges for acquisition, particularly in the context of foreign language learners. Writing systems also vary along a continuum of phonological transparency, with some writing systems showing a highly regular correspondence between the written symbols and the sounds of the language and other writing systems having much less regular correspondences between orthography and phonology. In this regard, transparent languages exemplify an efficient spelling system characterized by a direct one-to-one correspondence between phonemes and graphemes, where each sound is represented by a single letter with no alternative spellings (Spencer, 2000).

In contrast, non-transparent languages can impose greater challenges due to their complex phoneme-grapheme mappings, which may hinder fluency among learners. Transparent languages exhibit clear and

predictable mappings between linguistic forms and their meanings. This transparency facilitates understanding and acquisition, making them easier for learners to grasp. For example, in transparent languages, each letter or letter combination typically represents a single phoneme, simplifying the decoding of written words into their spoken forms (Bassetti, 2008). As an illustration, the Italian writing system is much more phonologically transparent than English because in Italian, each letter or letter cluster corresponds to one phoneme.

Non-transparent languages also feature more complex relationships between form and meaning, often involving ambiguity and irregularities. This complexity can hinder language acquisition and comprehension (Hengeveld & Leufkens, 2018). The degree of phonological transparency can significantly affect foreign language acquisition, as learners from transparent language backgrounds may rely more on orthographic input when learning a new language than those from opaque language backgrounds (Coulmas, 2003). In the case of our study, we believe that Spanish learners of English will rely on orthographic input in their target language, which will affect the segmental pronunciation accuracy of non-transparent words in the EFL classroom.

Spanish and English: Transparent and Non-Transparent Languages

The transparency of Spanish refers to the clear relationship between its orthography and pronunciation. In Spanish, each letter or combination of letters generally represents only one sound, making it a phonologically transparent language. This transparency allows speakers to read and pronounce new words relatively easily based on consistent phonetic rules (Bassetti, 2008, 2023; Escudero & Wanrooij, 2010; Georgiou, 2021). According to Seymour, Aro, & Erskine (2003), this regularity in Spanish's grapheme-phoneme correspondence simplifies decoding for learners, leading to faster acquisition of reading and writing skills compared to languages with opaque orthographic systems. Similarly, Cuetos & SuÁRez-Coalla (2009) argue that the consistent grapheme-phoneme rules in Spanish allow for early and rapid reading acquisition, as readers encounter few exceptions to these phonetic principles.

On the contrary, English, as an example of an opaque or non-transparent language, presents significant challenges in the relationship between orthography and phonology due to its inconsistent grapheme-phoneme correspondences. Unlike languages with transparent orthographies like Spanish, English features a complex system with multiple pronunciations for the same letter combinations and varied spellings for similar sounds. According to Ziegler & Goswami (2005), this inconsistency requires English learners to memorize more irregular word patterns, as phonetic decoding alone is often insufficient for accurate pronunciation. For example, the English orthographic system allows the grapheme <a> to stand for either phoneme /æ/, as in <cat>, or phoneme /ɑ:/, as in <hard>. Thus, the English orthographic system can be described as opaque (Escudero & Wanrooij, 2010).

Erdener & Burnham (2005) suggest that speakers with transparent L1 orthographies cannot easily learn new L2 words when there is no straightforward relationship between orthography and phonology, as in the case of languages with an opaque orthographic system. Escudero, Hayes-Harb, & Mitterer (2014) argue that the effect of L1 orthography depends on the similarity of the L1-L2 grapheme-phoneme correspondences. In their study, when the grapheme-phoneme correspondences between Spanish and Dutch were congruent, Spanish learners of Dutch were facilitated in the learning of Dutch words, whereas when the grapheme-phoneme correspondences were incongruent, the learning of Dutch words was hindered. In the case of Spanish and English, Vokic (2011) studied the production of the English flap by native Spanish speakers. In Spanish, the flap is represented by grapheme <r>, and in English, by graphemes <t>, <d>, <tt>, and <dd>. She found L1 transfer in participants of the Spanish flap when pronouncing English flaps.

Bassetti (2023) found an effect of native language orthography on Italian speakers' production of English sounds. Thus, the literature reports a relationship between L1 grapheme-phoneme correspondence and pronunciation accuracy in the target language. Concerning transparency and instruction, Bassetti (2023) also found no positive effects of explicit instruction in the pronunciation accuracy of non-transparent words in tasks of word repetition and rhyme judgment tasks in Italian learners of English. These findings suggest that the type of instruction does not play a role in pronunciation accuracy when it comes to non-transparent languages. Even so, there is a lack of studies regarding this topic, which makes it important to assess if instruction plays a role in teaching pronunciation for opaque languages, such as English.

Segmental Pronunciation Accuracy

Segmental pronunciation accuracy is defined as the degree to which an individual's spoken words align with the standard pronunciation of a language. This concept encompasses the precision with which sounds are articulated, reflecting how closely the pronunciation matches expected norms. Accuracy in the pronunciation of consonant sounds is influenced by various aspects of sound production, such as voicing, place of articulation, and manner of articulation (Cruttenden, 2001). This study defines segmental pronunciation accuracy as the correct articulation of a sound corresponding to a phoneme, which will include voicing, place of articulation and manner of articulation for phonemes /s/ and /z/ in English.

Hypothesis and Predictions

This study explored the effect of transparent and non-transparent words on the segmental pronunciation

accuracy of phonemes /s/ and /z/ through two different types of pronunciation instruction. Notably, based on the extant literature, we hypothesized that segmental pronunciation accuracy would be higher when the grapheme <s> corresponds to the phoneme /s/ (transparent words) and lower when the grapheme <s> does not correspond to the phoneme /s/ but the phoneme /z/ (non-transparent words) (Cuetos & SuÁRez-Coalla, 2009; Erdener & Burnham, 2005; Escudero et al., 2014; Escudero & Wanrooij, 2010; Seymour et al., 2003; Ziegler & Goswami, 2005). To assess the role of instruction, we used implicit and explicit instruction. We posited that explicit instruction would have an impact on segmental pronunciation accuracy for non-transparent words due to the transparency challenges faced by EFL learners (Abdi, 2010; Couper, 2003; Derwing et al., 1998; Doan, 2013; Ghorbani et al., 2016; Khaghaninejad & Maleki, 2015; Khanbeiki & Abdolmanafi-Rokni, 2015; Koike, 2014; Mohseni, 2011; Saito, 2013).

Methods and Materials

Research Design

The study's design was a quasi-experimental one-group repeated-measures design with convenience sampling. It consisted of four 90-minute sessions with two different conditions: two sessions for the implicit instruction condition and two for the explicit instruction condition, each followed by segmental pronunciation accuracy tests. During the implicit instruction condition, students were taught the different pronunciations of two-syllable words containing the grapheme <s>, focusing on their pronunciation as /s/ and /z/, in transparent words, where the phoneme /s/ corresponds to the grapheme <s> (e.g., "sister", "secret") and non-transparent two-syllable words, where the grapheme s corresponds to the phoneme /z/ (e.g., "visit", "prison"). The following two sessions, equivalent to the explicit instruction condition, again incorporated transparent and non-transparent words with grapheme <s> and phonemes /s/ and /z/.

Population and Sampling

The participants were four students in 11th grade, aged 16 to 18, all Spanish speakers, specializing in Introduction to Welding in a Chilean rural vocational high school. The sample was a convenience sample since the participants were part of a high-school EFL classroom. This study was conducted following the research policies of Universidad de Talca and the Chilean National Research and Development Agency. Participants gave written informed consent and were informed that they could withdraw from the study without any consequences. All data were stored anonymously.

Instruments and Procedures

Data was collected through a reading-aloud test at the end of each condition (implicit and explicit) to assess students' segmental pronunciation accuracy of phonemes /s/ and /z/ using two-syllable transparent and non-transparent words with the grapheme <s>. Namely, at the end of the second session of the implicit instruction condition, participants took a reading-aloud test composed of 30 items, 15 transparent and 15 non-transparent two-syllable words. Likewise, at the end of the fourth session, corresponding to the session of the explicit instruction condition, the students took a reading-aloud test composed of 30 items, 15 transparent and 15 non-transparent two-syllable words.

Data Analysis

Two English teachers recorded and transcribed the answers for the first and second reading-aloud tests. Each correct answer was marked with 1 point, meaning that for each test, the maximum score was 30 since the tests comprised 15 transparent and 15 non-transparent words. The experts compared their results and assigned a score of 1 point for each correct word. A t-test was used to compare the means of the post-test results for the implicit and explicit conditions and the segmental pronunciation accuracy of the transparent and non-transparent words.

Results and Discussion

With respect to segmental pronunciation accuracy, there was a significant difference in the segmental pronunciation accuracy for transparent ($M = 15.00$, $SD = 0$) and non-transparent words ($M = 1.50$, $SD = 1$) in the post-test results for the implicit instruction condition ($t(3) = 27.00$, $p= 0.0001$). Likewise, there was also a significant difference in the segmental pronunciation accuracy for transparent ($M = 15.00$, $SD = 0$) and non-transparent words ($M = 2.50$, $SD = 2.65$) in post-test results for the explicit instruction condition ($t(3) = 9.44$, $p = 0.0025$). Thus, both types of instruction showed significant differences in the post-test results.

When looking at overall results from the post-test between the implicit ($M = 16.75$, $SD = 1.50$) and explicit conditions ($M = 17.75$, $SD = 2.75$), a significant difference was not found ($t(3) = 1.09$, $p = 0.3534$). This means that the type of instruction did not play a role in the pronunciation accuracy of transparent and non-

transparent words. Furthermore, this indicates that segmental pronunciation accuracy is related to the type of word (transparent versus non-transparent) rather than the instruction type. This was also shown in the post-test comparison across conditions of the segmental pronunciation accuracy of transparent (M = 30, SD = 0) and non-transparent words (M = 4, SD = 3.56), which was also statistically significant (t(3) = 14.61, p = 0.0007), with transparent words being pronounced with 100% accuracy in both conditions.

Pronunciation Instruction in the Context of Foreign Language Teaching and Learning

As mentioned in the previous literature, pronunciation can be particularly challenging due to the phonetic and phonological differences across languages (Nyarks & Owushi, 2022). Even so, the literature reports a low emphasis on teaching and practicing correct pronunciation in the EFL classroom (Kráľová, 2011; Morley, 1991). In addition to this, when pronunciation is taught, teachers often rely on their intuition without a clear structure or guidance for learners (Derwing & Munro, 2005). In the case of this study, pronunciation instruction had a significant effect across conditions, showing a clear effect of pronunciation instruction in the EFL language classroom, as reported by Stratton (2023a), Luo et al. (2022), Gordon & Darcy (2022), Pennington & Rogerson-Revell (2019), Ghorbani et al. (2016), Gilakjani & Sabouri (2016), Khaghaninejad & Maleki (2015), Khanbeiki & Abdolmanafi-Rokni (2015), Koike (2014), Doan (2013), Gordon et al. (2013), Saito & van Poeteren (2018), Mohseni (2011), Abdi (2010), and Couper (2003). In line with the previously mentioned studies, these findings underline the importance of teaching pronunciation in the EFL classroom to improve students' segmental pronunciation accuracy. Furthermore, they showed that guided and structured pronunciation instruction has a significant effect on students' pronunciation accuracy.

This study also proves that pronunciation instruction may be targeted and can focus on specific language units, like words. Thus, EFL teachers' reported arguments, such as lack of time or specific training for pronunciation teaching, can be avoided through specific and targeted pronunciation instruction (Derwing & Munro, 2005; Gilbert, 2008; Scrivener, 2011). The results show that allocating a short amount of time to teaching pronunciation may bring significant gains for EFL learners. In line with the previous argument, it is our reflection that the teaching of pronunciation should not be isolated within the EFL classroom, but rather, pronunciation teaching should be tailored in a way that is integrated into the EFL classroom, as the suggests (Council of Europe, 2001). This may be done through pronunciation instruction of everyday vocabulary instead of focusing on minimal pairs or specific pronunciation exercises, which are usually isolated and target vocabulary that serves the purpose of teaching pronunciation rather than developing vocabulary for everyday situations (Gilbert, 2008).

Explicit and Implicit Pronunciation Instruction

As previously discussed, this study intended to compare the effect of using explicit and implicit instruction for segmental pronunciation accuracy of transparent and non-transparent words. More specifically, the premise was that instructional effects would only play a significant role for non-transparent words. This prediction was made based on the literature reporting the superiority of explicit instruction over implicit instruction (Abdi, 2010; Couper, 2003; Doan, 2013; Ghorbani et al., 2016; Gordon & Darcy, 2022; Gordon et al., 2013; Khaghaninejad & Maleki, 2015; Khanbeiki & Abdolmanafi-Rokni, 2015; Koike, 2014; Mohseni, 2011; Saito & van Poeteren, 2018; Stratton, 2023a). Contrary to our expectations that learners would significantly improve in the explicit instruction condition when pronouncing non-transparent words, our results showed no significant differences for the pronunciation of non-transparent words across conditions. Notably, they showed that participants improved their performance on the post-test in both conditions and for both types of words and that overall results for the post-tests were not significant when comparing the implicit and explicit conditions for non-transparent words. Thus, our findings align with Bassetti (2023), indicating that the type of instruction does not play a role in segmental pronunciation accuracy for non-transparent words. In terms of explicit and implicit instructional approaches, the results indicate that explicit and implicit pronunciation instruction are both effective methods for pronunciation instruction in the EFL classroom. In this sense, the findings underscore the importance of pronunciation instruction in the EFL classroom beyond the chosen method of instruction (Kelly, 2000; Kráľová, 2011; Morley, 1991; Yates, 2002). Notably, the teaching of pronunciation should involve different approaches and methods to improve pronunciation accuracy for learners. For example, varied methods of implicit and explicit instruction or approaches combining explicit and implicit instruction within the same lesson, to provide enough opportunities for learners to learn and improve their pronunciation through instruction in the EFL classroom (Spada & Tomita, 2010).

L2 Orthographic Input and L2 Pronunciation

The results for the segmental pronunciation accuracy of transparent words revealed that all participants excelled in pronouncing words where the grapheme <s> consistently represented the /s/ sound, regardless of the type of instruction. In contrast, the results for non-transparent words showed that participants had more difficulty pronouncing words where the grapheme <s> had a correspondence with the /z/ phoneme. These results align with our initial hypothesis that segmental pronunciation accuracy would be higher when the grapheme s corresponds to the phoneme /s/ (transparent words) and lower when the grapheme <s> does not

correspond to the phoneme /s/ but the phoneme /z/ (non-transparent words). They are also in line with studies suggesting that learners from transparent L1 orthographies, such as Spanish, may struggle more with opaque L2 orthographies due to incongruences in grapheme-phoneme mappings (Escudero et al., 2014; Escudero & Wanrooij, 2010). For example, while Spanish learners benefit from their L1's phonological transparency, their reliance on these predictable patterns can hinder their ability to process English's irregularities, as evidenced by lower performance on non-transparent words.

Furthermore, the results of both tests highlight the significant influence of L1 orthographic input on L2 segmental pronunciation accuracy, particularly when comparing transparent and non-transparent word types in English. Participants displayed higher segmental pronunciation accuracy with transparent words, aligning with findings that transparent orthographies, like Spanish, provide learners with predictable grapheme-phoneme relationships that facilitate decoding and pronunciation (Seymour et al., 2003). Conversely, the greater challenges observed with non-transparent words underline the complexity of languages with opaque orthography, which often require learners to navigate irregular grapheme-phoneme correspondences (Erdener & Burnham, 2005; Escudero et al., 2014; Escudero & Wanrooij, 2010; Vokic, 2011; Ziegler & Goswami, 2005). These findings also point to taking into consideration the key link between L2 orthographic input and L2 pronunciation in the EFL classroom. Notably, EFL instructors should contemplate the impact of orthographic input when teaching pronunciation to design materials that can help learners navigate the grapheme-phoneme incongruencies of their target language (s).

Differences in Transparency Between Spanish and English

In our study, the results for segmental pronunciation accuracy of non-transparent words were significantly different than for non-transparent words, as we hypothesized initially. This means that the differences in transparency between Spanish and English have significant implications for language instruction. Educators teaching English as a foreign language must implement specific strategies to address the challenges of English's opaque orthography. For instance, a focus on phonics instruction and explicit feedback on pronunciation can help learners overcome these difficulties (Wang et al., 2024). The stark contrast between Spanish and English spelling systems suggests that different teaching methods may be necessary in order to achieve pronunciation accuracy in the EFL classroom. It is important to note that English spelling occupies a unique position, falling between truly phonemic systems, such as Spanish or Finnish, and more complex morphological systems, such as Chinese or Korean. As a result, the English orthographic system is deep, intricate, and asymmetrical. Scholars such as Barry (1991), Goulandris (1992), and Seymour (1992) have noted that English lacks orthographic regularity, meaning that the spelling of many words does not reliably reflect their pronunciation. Consequently, learners must acquire additional knowledge of specific lexical items and develop an understanding of morphemic structures and the conventions that govern English orthography.

Conclusion

The results from this study highlight the importance of not only considering different types of instruction when teaching pronunciation in a foreign language but also bearing in mind the transparency of the target language. As shown, the pronunciation of non-transparent words was less accurate than that of transparent words. Thus, pronunciation instruction of non-transparent words requires focused, strategic teaching approaches, which should include both implicit and explicit instruction, as no type of instruction was found to be more beneficial than the other. Furthermore, in the case of English, the opaqueness of the language has proven to be a difficulty for learners of English as a foreign language, and the discrepancies found indicate the need for targeted pronunciation instruction that explicitly addresses the challenges posed by English's orthographic depth, as suggested by Wang et al. (2024). As per the limitations and recommendations of this study, even when the participant sample of this research was small (n=4) and the duration of the intervention was only four weeks, we believe that these findings contribute to the literature about the effect of instruction on segmental pronunciation accuracy of transparent and non-transparent words. This study also has implications for the EFL classroom because it emphasizes the importance of considering the opaqueness of English in the foreign language classroom when teaching pronunciation to improve segmental accuracy and avoid frustration for EFL learners of transparent languages. It also underscores the importance of using different instructional methods in order to improve pronunciation accuracy in the EFL classroom.

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