

The Effects of Explicit Instruction on the Acquisition and Retention of Orthographic Cues to Pronunciation by Spanish EFL Learners

MA in English Studies: Linguistic, Literary, and Sociocultural Perspectives

Supervisor: Juli Cebrian Puyuelo

Lali Nibladze Kandiasvili

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UAB
Universitat Autònoma
de Barcelona

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Student's name: Lali Nibladze Kandiashvili

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Table of Content

1. Introduction	1
2. Literature Review.....	6
2.1 Pronunciation in Second Language Acquisition (SLA)/FLL Context.....	6
2.2 Lexical Stress and Vowel Quality in English Pronunciation	9
2.2.1 Lexical Stress	9
2.2.2 English Vowel Quality.....	11
2.3 Orthography and ESL/EFL Pronunciation.....	13
2.3.1 Orthographic Influence on Phonological Representation	13
2.3.2 Orthographic Regularities in English	14
2.4 Explicit Instruction Using Orthographic Cues	16
3. Methodology.....	18
3.1 Participants	18
3.2 Research Design.....	19
3.3 Instructional Treatment.....	20
3.3.1 Stress Instruction	21
3.3.2. Vowel Instruction	22
3.4 Materials and Instruments.....	22
3.4.1 Background Questionnaire.....	22
3.4.2 Production Task.....	23
3.4.3 Prediction Task.....	23
3.5 Procedure	24
3.6 Data Coding and Scoring.....	25
3.7 Statistical Analysis	26
3.8 Ethical Considerations.....	26
4. Results	27
4.1 Production Task	27
4.1.1 Results at the Group Level	27
4.1.2 Results at the Participant Level	29
4.1.3 Inferential Analysis.....	31
4.2. Prediction Task	33
4.2.1 Results at the Group Level.....	33
4.2.2 Results at the Participant Level	35
4.2.3 Inferential Analysis.....	37
5. Discussion	39
5.1 Effects of Explicit Instruction on Pronunciation Performance	39
5.2 Transfer to Untaught Features.....	40

5.3 Retention of Learning Over Time	42
5.4 Individual Variation in Learning Outcomes	44
5.5 Limitations	46
5.6 Pedagogical Implications and Future Research	47
6. Conclusion.....	49
References	53
Appendix A. Background Questionnaire and Consent Form (Adapted from Cebrian, 2019).....	58
Appendix B. Stress Training Materials	60
Appendix C. Vowel Training Materials	62
Appendix D. Production Test	65
Appendix E. Prediction Test.....	66

Index of Table

Table 4.1 Production task: Mean accuracy scores and standard deviation	28
Table 4.2 Production task: Accuracy scores at the participant level	30
Table 4.3 Mixed-design ANOVA results for the production task by stimulus type	32
Table 4.4 Prediction task: Mean accuracy scores and standard deviations.....	34
Table 4.5 Prediction task: Accuracy scores at the participant level	35
Table 4.6 Mixed-design ANOVA results for the prediction task by stimulus type.....	37

1. Introduction

Pronunciation plays a central role in successful spoken communication. Regardless of a learner's grammatical knowledge or lexical repertoire, communication may be hindered if speech requires too much conscious effort for listeners to process. Historically, the nativeness principle (Levis, 2005) held that achieving native-like pronunciation was the ultimate goal for a learner of a foreign language (FL). However, experience has demonstrated that such a standard is rarely feasible or achieved within an FL context (Levis, 2005; Derwing & Munro, 2005). For this reason, contemporary approaches to pronunciation teaching have moved away from the pursuit of native-like speech, focusing instead on intelligibility and comprehensibility (Levis, 2020). Within this perspective, the main aim of the instruction is not the elimination of a foreign accent, but rather the ability to communicate effectively and be comfortably understood by interlocutors.

Previous research has established that successful speech perception and production depend on more than the accurate articulation of individual segments. Listeners make use of multiple sources of information during spoken language processing, including prosodic features such as stress, rhythm and intonation (Cutler, 2005). Among these suprasegmental features, lexical stress occupies a prominent position in English (Levis, 2018). Studies have shown that listeners rely heavily on stress patterns during spoken word recognition and that misplaced stress can impede intelligibility, even when segmental features are produced accurately (Field, 2005; Field, 2008).

Segmental features, particularly vowels (Nishi & Kewley-Port, 2008), are equally important for successful spoken communication. English has a considerably larger and more complex vowel inventory than many other languages, including

Spanish, and distinctions in vowel quality often contribute to differences in lexical meaning (Munro & Derwing, 1995). As a result, Spanish learners of English frequently experience difficulties perceiving and producing English vowel contrasts that are absent from their native language, which may lead to misunderstandings even when other aspects of pronunciation are accurate (Barrios, Jiang, & Idsardi, 2016). Because English vowel quality is often only weakly reflected in its orthography, learners may also find it difficult to predict pronunciation from spelling alone.

While the processing of suprasegmental features is driven by auditory input, pronunciation learning in classroom settings is also shaped by exposure to written language. In educational environments, pronunciation is often acquired alongside orthographic representations, meaning that spelling becomes a primary source of information during language learning. This interaction between orthography and phonology has attracted considerable attention within second language (L2) acquisition research, particularly as studies have revealed that written forms can influence how learners perceive, store, retrieve, and produce spoken language (Hayes-Harb and Barrios, 2021).

Orthography can shape phonological development in both beneficial and problematic ways. On the one hand, spelling can lead to inaccurate assumptions about sound patterns, particularly in languages where the relationship between written and spoken forms is not transparent. On the other hand, orthographic information may facilitate learning by providing learners with additional cues that support pronunciation (Hayes-Harb and Barrios, 2021). Therefore, orthography constitutes an integral component of the linguistic input available to learners and plays a prominent role in the development of L2/FL pronunciation.

The relationship between orthography and pronunciation is particularly important in the case of English. English orthography is frequently characterized as inconsistent due to the absence of a one-to-one correspondence between graphemes and phonemes. Thus, learners often perceive English pronunciation as unpredictable and dependent on lexical learning. However, despite the complexity of the writing system, English spelling is not entirely arbitrary. A number of orthographic patterns provide information about pronunciation and can serve as useful cues for learners. These patterns may be related to stress placement, vowel quality, morphological structure, or specific combination of letters that tend to be associated with a particular pronunciation. Among the most prominent examples are suffixes, which often determine the location of lexical stress within a word. Similarly, certain spelling patterns can help predict vowel pronunciation. For instance, patterns such as consonant-vowel-consonant-e (CVCe) and consonant-vowel-consonant-consonant (CVCC) provide information about vowel quality. Such regularities highlight the role of orthographic information in guiding learners' pronunciation.

The possibility that learners can use written forms to guide their pronunciation has important implications for language teaching. Pronunciation instruction has traditionally heavily relied on listening, imitation, and repetition. While these techniques undoubtedly play a valuable role in FL learning (FLL), they may not always encourage learners to internalise broader patterns that extend beyond individual lexical items. Hence, explicit attention to orthographic regularities may make learners better equipped to anticipate how unfamiliar words sound rather than depending solely on memorized pronunciation.

The use of orthographic information may be of significant value to Spanish learners of English. Although the two languages share the Roman alphabet, the

relationship between spelling and pronunciation differs considerably. Spanish orthography is generally characterized by a relatively transparent correspondence between written and spoken forms, whereas English exhibits a much less consistent relationship. However, these differences are not restricted to segmental elements. More specifically, Spanish is described as a syllable-timed language, while English is stress-timed (Nespor, Shukla & Mehler, 2011). Furthermore, stress is often marked explicitly in Spanish through the use of the written accent mark (the acute accent ‘’), making stress placement more apparent than in English. What play more central role in English speech are prominence, vowel reduction, and rhythm. These differences may contribute to difficulties in the acquisition of English pronunciation.

Although the link between orthography and pronunciation has received increasing attention in L2/FL acquisition research, some areas remain open to further investigation. For instance, less attention has been devoted to how orthographic cues can be incorporated into pronunciation instruction among Spanish learners of English, particularly when both lexical stress and vowel pronunciation are considered. Considering the effectiveness of pronunciation instruction cannot be solely assessed through immediate post-test performance, training studies often include measures of retention and generalization to determine whether learning is maintained over time and transferred to new words (e.g., Logan & Pruitt, 1995; Thomson, 2018). However, relatively few studies have examined whether any gains associated with such instruction are maintained beyond the immediate instructional context (Thomson, 2018). These issues are of central importance in educational contexts, where the ultimate objective of instruction is often limited to short-term improvement, but the development of knowledge that can be transferred to

unfamiliar lexical items and retained beyond the classroom.

The present study aims to address these gaps by examining the effects of explicit instruction on orthographic cues to pronunciation among adult Spanish learners of English. More specifically, it investigates the acquisition and retention of patterns with lexical stress and vowel quality, as well as learners' ability to apply this knowledge in both production and prediction tasks. By combining these different dimensions within single research, this thesis seeks to provide a more comprehensive account on how written forms interface with L2/FL phonological development.

The study addressed the following research questions:

1. Does explicit instruction on orthographic cues to pronunciation improve Spanish EFL learners' acquisition and production of lexical stress and vowel quality?
2. Are any instructional gains retained over time?
3. To what extent are learners able to generalise this knowledge to unfamiliar lexical items?

To address these questions, the study examines the effects of a brief instructional intervention focusing on orthographic cues to pronunciation among Spanish learners of English. In particular, it explores whether explicit attention to regularities associated with lexical stress and vowel quality leads to better performance in oral production and prediction tasks. It also assesses whether the gains are maintained over time and whether learners are able to extend this knowledge to unfamiliar items. It is anticipated that participants will demonstrate higher levels of accuracy following the intervention than at the pre-test. It is also expected that a portion of these gains will be retained in the delayed post-test.

Finally, given that the instructional intervention focuses on raising learners' awareness of recurring orthographic and phonological patterns rather than memorizing individual lexical items, it is predicted that participants will show some ability to extend this understanding to unfamiliar words.

This master's thesis is structured into six chapters. Following the introduction, Chapter 2 reviews the literature review, focusing specifically on orthographic influences on spoken language processing and explicit pronunciation instruction. Chapter 3 presents the methodology, including a description of the participants, materials, procedures, and analytical frameworks. Chapter 4 reports the findings obtained from the production and prediction tasks. Chapter 5 discusses these outcomes in relation to the research questions. Finally, Chapter 6 summarises the principal findings of the study, acknowledges its limitations, and outlines possible directions for future research.

2. Literature Review

2.1 Pronunciation in Second Language Acquisition (SLA)/FLL Context

Pronunciation has received different degrees of attention throughout the history of second and foreign language teaching. While it was once regarded as a fundamental component of language instruction (Celce-Murcia, Brinton, & Goodwin, 1996), its importance considerably declined during the second half of the twentieth century before experiencing a renewed interest in recent decades (Levis, 2005). These shifts shaped contemporary views on the goals of pronunciation teaching and the role it should play within SLA/FLL context.

Early language teaching approaches generally considered accurate pronunciation to be an essential component for successful language learning. As Celce-Murcia et al. (1996) explain, the Reform Movement introduced the systematic

teaching of phonetics and promoted spoken language as the foundation of language instruction. The Direct Method relied primarily on imitation and extensive oral exposure, the Audiolingual Method placed pronunciation at the centre of classroom practice through drills, repetition, articulatory explanations, minimal pairs and the use of International Phonetic Alphabet (IPA), among others. During this period, pronunciation was viewed as an indispensable component of language learning, with accuracy constituting one of the principal instructional goals (Morley, 1991).

A shift in the teaching paradigm began during the 1960s with the emergence of cognitive approaches and became more evident with the rise of Communicative Language Teaching (CLT). As communicative competence gradually replaced accuracy as the primary objective of language teaching, pronunciation lost much of its prominence within the curriculum (Morley, 1991; Levis, 2005). Traditional pronunciation practice, often associated with decontextualised drills and repetition, come to be regarded as incompatible with communicative methodologies, and many language programmes considerably reduced or even eliminated explicit pronunciation instruction (Morley, 1991). As a result, pronunciation became what Kelly (1969, as cited in Celce-Murcia et al, 1996, p.2) described as the “Cinderella” of language teaching.

Despite this period of marginalisation, research conducted over the last three decades has challenged the assumption that pronunciation plays only a minor role in successful communication. Contemporary research argues that pronunciation constitutes an integral component of communicative competence (Derwing & Munro, 2005; Pennington, 2021). It influences not only whether speech is understood but also the amount of effort required by listeners to process spoken language. Learners with a noticeably foreign accent may still communicate

successfully, whereas speech containing certain pronunciation difficulties can lead to misunderstandings even when grammatical and lexical knowledge are well developed (Derwing & Munro, 1997, 2005; Munro, 2018). As Celce-Murcia et al. (1996) argue, there is a “threshold level of pronunciation” (p. 7) below which communication becomes considerably more difficult regardless of learners’ competence in other linguistic domains.

The renewed interest in pronunciation has also been accompanied by an important change in instructional goal. Historically, pronunciation teaching was largely guided by the Nativeness Principle (Levis, 2005) according to which learners were expected to have native-like pronunciation. Yet, research has questioned both the feasibility and the desirability of this objective. Studies have shown that adult learners rarely achieve native-like pronunciation, even after many years of exposure to the target language (Derwing & Munro, 2005; Levis, 2020). More importantly, empirical evidence demonstrated that accentedness, intelligibility and comprehensibility represent related but distinct constructs. Speech may sound strongly accented while remaining highly intelligible, and listeners often understand speakers with noticeable foreign accent with relatively little difficulty (Derwing & Munro 1995, 1997; Isaacs & Trofimovich, 2012). As a consequence, pronunciation has gradually shifted towards the Intelligibility Principle, which prioritises successful communication over native-like speech (Levis, 2005, 2020).

This transition has broadened the objectives of pronunciation teaching. Rather than attempting to eliminate every trace of a learner’s first language (L1) accent, current approaches aim to develop pronunciation that enables effective communication across different contexts, including interactions between multilingual speakers for whom English represents an international language (Levis,

2020; Pennington, 2021). Within this perspective, pronunciation is viewed as one component of communicative competence, interacting with grammatical and lexical features to make communication successful (Isaacs & Trofimovich, 2012, Pennington, 2021).

Contemporary research has also challenged the traditional belief that pronunciation development is largely unattained in adulthood. Although age undoubtedly influences ultimate attainment, adult learners remain capable of making significant improvements, particularly when instruction draws their attention to relevant phonological patterns and provides opportunities for focused practice (Pennington, 2021).

2.2 Lexical Stress and Vowel Quality in English Pronunciation

2.2.1 Lexical Stress

Lexical stress refers to the relative prominence assigned to one syllable within a word and constitutes an inherent component of a word's phonological representation (Fudge, 1984, Roach, 2009). Unlike sentence stress, which varies according to discourse context and communicative objective, lexical stress is generally fixed and forms part of a word's identity. Although stress has traditionally been associated with greater loudness, phonetic research has emphasized that it is a multi-dimensional phenomenon realised through the interaction of several acoustic cues, particularly pitch, duration, intensity and vowel quality, with pitch and duration generally regarded as the most reliable indicators of prominence (Hayes, 1995; Roach, 2009).

English is characterised by a variable stress system in which stress placement depends on the interaction of several phonological and morphological factors. Although general tendencies exist, such as influence of syllable weight, lexical

category and morphological structure, numerous exceptions prevent stress assignment from being entirely predictable (Fudge, 1984; Roach, 2009; Guion et al, 2005). Nevertheless, lexical stress is far from arbitrary. Speakers gradually internalise regularities that enable them to assign stress according to phonological principles and by analogy with previously encountered words (Guion et al., 2005).

Lexical stress in English is closely intertwined with vowel reduction. Stressed syllables typically contain full vowels, whereas unstressed syllables frequently undergo reduction, most commonly to schwa /ə/ (Cutler 2015). This interaction contributes to the characteristic stress-timed rhythm of English and distinguishes it from many other languages in which prominence is distributed more evenly across syllables (Munro, 2021).

Beyond its structural role, lexical stress plays an important part in spoken communication. Stressed syllables facilitate lexical access and spoken word recognition by providing listeners with reliable cues during speech processing (Cutler & Carter, 1987; Field, 2005). Since most English content words begin with a stressed syllable, listeners exploit stress patterns to segment speech and identify potential lexical items. Thus, inaccurate stress placement may interfere with word recognition and increase processing time, even when individual consonants and vowels are produced accurately (Field, 2005), which underlines that lexical stress greatly contributes to intelligibility and comprehensibility.

However, for ESL/EFL learners, acquiring lexical stress is often challenging. For example, in the case of Spanish speaking learners, English stress patterns differ substantially from those of Spanish, whose stress system is more regular and whose rhythm is commonly described as more syllable-timed than that of English (Dauer, 1983). The presence of Cognates may also complicate stress

acquisition, as learners often transfer familiar L1 stress patterns to English words that are orthographically similar but differ in their stress placement. These differences frequently result in L1 transfer, leading learners to overgeneralise Spanish stress patterns when speaking English (Guion, et al, 2004).

2.2.2 English Vowel Quality

English possesses a considerably larger and more complex vowel inventory than many other languages, including Spanish. English distinguishes a wide range of vowel phonemes that differ both in quantity and quality, which makes vowel production one of the most challenging aspects of English pronunciation for ESL/EFL learners (Cruttenden, 2014; Roach, 2009). Vowels are defined as speech sounds produced without significant obstruction of the airflow through the vocal tract. Their classification is primarily based on tongue height, tongue advancement, and lip rounding, although acoustic properties also play a crucial role in distinguishing vowel categories (Ladefoged & Johnson, 2015; Roach, 2009). These articulatory and acoustic dimensions define the English vowel system, which consists of monophthongs and diphthongs and is foundational for lexical distinctions.

One of the defining characteristics of English vowels is the distinction between tense and lax vowel pairs, such as /i:/ - /ɪ/ and /u:/ - /ʊ/, to name a few. Although these contrasts are often described as differences in vowel length, several authors argue that duration alone does not adequately distinguish them. Tense and lax vowels differ simultaneously in their articulatory positions, acoustic properties and vowel quality (Ladefoged & Johnson, 2015; Roach, 2009). Thus, learners who focus solely on vowel length are unlikely to produce these contrasts accurately.

The complexity of the English vowel system is further increased by its

inconsistent orthography. Unlike languages, such as Spanish, where there is one to one correspondence between graphemes and phonemes, English spelling is often an unreliable guide to pronunciation. The same grapheme may represent several different phonemes, while identical vowel phonemes may be realised through multiple spelling patterns. These challenges are particularly relevant for Spanish speaking learners because Spanish has a comparatively small vowel system consisting of five vowels, which leads learners to assimilate several English vowels into a single native vowel category (Flege, 1995). According to the Speech Learning Model (SLM) (Flege, 1995), learners initially interpret unfamiliar L2 vowels through existing L1 phonetic categories and sounds perceived as similar to native language vowels are especially difficult to acquire because they tend to be assimilated rather than represented as new categories. Empirical studies support this assumption and demonstrate that Spanish learners, for instance, experience persistent difficulties distinguishing contrasts such as /i:/ - /ɪ/ as /i:/ is frequently assimilated to the Spanish vowel /i/, whereas /ɪ/ has been reported to be assimilated either to /i/ or /e/ (Cebrian, 2019; Cebrian, Gorba, Gavalda, 2021). Likewise, other English contrasts, including /æ/ - /ɛ/, remain problematic because they lack direct equivalent in the Spanish vowel inventory and they are often assimilated to the Spanish /a/ and /e/ (Cebrian, 2019). Although learners gradually refine these categories through increased exposure to English, development is often slow and varies across vowel contrasts and individuals (Morrison, 2009; Munro & Derwing, 2008).

Accurate vowel production plays a fundamental role in successful spoken communication because vowel contrasts contribute directly to lexical identification. Even relatively small deviations in vowel quality may alter lexical meaning and

hinder listeners' ability to recognize lexical items in speech (Field, 2005). Improvements in vowel production lead to greater intelligibility for listeners, which suggests that they have practical communicative benefits (Munro & Derwing, 2008). Although learners can continue to improve their vowel production through experience, particularly during the early stages of immersion, difficult vowel contrasts often remain challenging to acquire and may benefit from explicit pronunciation instruction.

2.3 Orthography and ESL/EFL Pronunciation

2.3.1 Orthographic Influence on Phonological Representation

Orthographic and phonological information can become integrated within lexical representations, allowing spelling to influence perception and production along with reading (Ehri, 2005). This perspective has important implications for SLA/FLL pronunciation because adult learners are typically exposed to written and spoken forms simultaneously, which makes orthographic knowledge an integral part of vocabulary acquisition. According to Ehri (2005), familiar written words are integrated lexical representations linking orthographic, phonological, semantic, and grammatical information. Through repeated exposure, learners establish systematic connections between graphemes and phonemes, enabling written forms to activate their corresponding pronunciation automatically.

Share's (1995) self-teaching hypothesis provides a complementary explanation of how these integrated representations are formed. According to the author, phonological recording, which is the process of converting print into speech, serves as the primary mechanism through which readers acquire stable orthographic representations. Each successful decoding strengthens the relationship between spelling and pronunciation and gradually enables learners to recognise written

words automatically.

Empirical research aligns with this viewpoint by demonstrating that orthographic information is automatically activated during speech perception. Escudero et al. (2008) found that native language orthography influences learners' perception of non-native vowel contrasts, even when participants are processing isolated speech sounds. Their findings indicated that Spanish learners transfer the relationship between graphemes and phonemes from their L1 when perceiving unfamiliar L2 vowels, resulting in both facilitative and interfering effects depending on the relationship between the two orthographic systems.

The close interaction between orthography and phonology also has important pedagogical implications. Although English orthography is often regarded as inconsistent, Dickerson (2015) argues that it contains numerous systematic regularities that learners can employ to predict pronunciation. Spelling should not be regarded as an obstacle to pronunciation learning but as a valuable source of phonological information. In addition, Dickerson (2015) proposes that pronunciation instruction should develop learners' abilities to predict, perceive and produce spoken forms. By learning orthographic regularities explicitly, learners can anticipate the pronunciation of unfamiliar words, monitor their own speech, and gradually develop autonomy in pronunciation learning.

2.3.2 Orthographic Regularities in English

Many apparent inconsistencies in English spelling follow systematic principles that become evident when words are analysed beyond individual letter and sound relationship (Frost, 2012; Templeton, 2000; Kessler & Treiman, 2001). Letters interact with larger orthographic patterns that provide valuable information about pronunciation. This means that, despite its complexity, English orthography

contains numerous regularities that readers can use to predict how unfamiliar words are likely to be pronounced.

Pronunciation is often determined by orthographic context rather than by individual graphemes. Kessler and Treiman (2019) provided evidence that pronunciation becomes considerably more predictable when surrounding letters are taken into account, particularly those forming the rime, that is, the vowel and the following consonant(s). Their analyses showed that the coda is a much stronger predictor of vowel pronunciation than the onset, which indicates that English spelling is organised around larger orthographic units. Similarly, Templeton (2000) argues that readers recognise recurring spelling patterns instead of memorising isolated rules. This allows them to interpret unfamiliar words through orthographic knowledge.

English Spelling also preserves important morphological information, which makes morphology another valuable source of pronunciation cues. According to Dickerson (2015), English orthography follows a meaning-first principle, whereby spelling remains relatively stable across morphologically related words even when pronunciation changes. As a consequence, suffixes frequently provide reliable information about pronunciation, particularly regarding lexical stress. Many derivational suffixes attract or shift primary stress, enabling learners to predict stress placement once the morphology structure of a word has been identified (Ladefoged & Johnson, 2015). Therefore, stress assignment follows systematic tendencies, which makes morphological awareness an important component of pronunciation prediction.

Orthographic regularities likewise provide cue to English vowel quality. Among the most productive patterns is the CVCe structure, in which a final silent *e*

signals that the preceding vowel is realised as tense (e.g., hop - hope, kit - kite). On the other hand, consonant doubling generally indicates that the preceding vowel remains lax (e.g., hoping - hopping, filing - filling). Although exceptions exist, these conventions occur frequently enough to constitute spelling patterns (Kessler & Treiman, 2001; Treiman & Boland, 2017).

The existence of these regularities is important for pronunciation instruction. Explicit instruction can draw attention to orthographic patterns that facilitate pronunciation prediction. As it has already been mentioned previously, Dickerson (2015) argues that recognising such regularities enables learners to develop strategies for decoding unfamiliar words, which in turn fosters learner autonomy. The instructional materials developed for the present study were based on this assumption. Specifically, participants were taught two sets of orthographic regularities. The tests contained derivational suffixes associated with lexical stress and spelling patterns involving CVCe and consonant doubling that provide cues to English vowel quality. By making these regularities explicit, the intervention aimed to determine whether learners could use orthographic information to improve both pronunciation prediction and production.

2.4 Explicit Instruction Using Orthographic Cues

Based on the research in the field, pronunciation can be effectively improved through instruction. Lee & Plonsky (2015) conducted a meta-analysis of 86 reports and found a large effect of pronunciation instruction, indicating that longer interventions, feedback and more controlled outcome measures provide additional evidence for effectiveness of pronunciation instruction in L2 classroom. Moreover, they found that instruction targeting both segmental and suprasegmental features yields positive learning outcomes, which suggests that pronunciation teaching can

successfully address multiple aspects of spoken language.

Other than relying on communicative exposure, pronunciation research widely advocated explicit, form-focused instruction, particularly for adult learners, who are more likely to benefit from explicit instruction because they make greater use of explicit learning mechanisms in classroom settings (DeKeyser, 2003a). Instruction aims to increase adult learners' conscious awareness of pronunciation patterns through explanation, practice and corrective feedback. Saito (2011) illustrated that explicit phonetic instruction improved learners' comprehensibility, especially in sentence reading, while Saito & Lyster (2012) revealed that combining explicit instruction based on form with corrective feedback led to stronger pronunciation gains.

Several methodological factors have been identified that influence the effectiveness of pronunciation instruction. Instructional gains are greatest when learning is assessed through controlled production tasks targeting specific pronunciation features (Saito & Plonsky, 2019). Similarly, longer instructional treatment and the inclusion of corrective feedback are associated with stronger learning outcomes (Lee & Plonsky, 2015). However, relatively few pronunciation studies include delayed post-test, which makes it difficult to determine whether observed improvements reflect lasting phonological learning or only short-term instructional effects. Longitudinal research suggests that pronunciation development is gradual and uneven, with some phonological features continuing to improve while others plateau over time (Munro & Derwing, 2008). Thus, there is a need to evaluate not only immediate instructional gains but also their retention.

Although it has often been reported previously that explicit pronunciation instruction is effective and that orthographic information can facilitate

pronunciation learning (Dickerson, 2015), several important gaps remain. Existing intervention studies have generally focused on either segmental or suprasegmental features in isolation, while relatively little research has examined instruction targeting both lexical stress and vowel quality within the same experimental framework. Furthermore, comparatively few studies have investigated whether pronunciation training based on orthography leads to sustained improvements over time, particularly among Spanish EFL learners. The present study addresses these gaps by examining the effects of explicit instruction based on English orthographic regularities for both lexical stress and vowel quality by evaluating learning through pre-, post- and delayed post-test measures.

3. Methodology

3.1 Participants

A total of eight learners participated in the study. Participants ranged in age from 18 to 24 years and consisted of six females and two males. All participants reported advanced levels of English proficiency, ranging from B2 to C1 according to self-assessments. Participants had substantial experience learning English, reporting between 12 and 18 years of exposure to the language.

The sample was linguistically relatively homogeneous. Either Catalan, Spanish or both were reported L1s. Several participants also reported knowledge of additional languages such as French. Participants were either university students or recent university graduates enrolled in a variety of degree programs, including English Studies, English and French Studies, English and Spanish Studies, English and Classical Studies, Economics and Computer Science.

The questionnaire revealed that participants were regularly exposed to English through a variety of informal channels. However, only one participant

reported previous pronunciation instruction, and none of the participants had lived abroad in an English-speaking environment. Therefore, although participants had extensive experience learning English, their pronunciation development had largely taken place in a FLL context. To guarantee participants' confidentiality, all individuals were assigned identification codes (P01-P08), which were used throughout the analysis and reporting of the results.

3.2 Research Design

The present study employed a quasi-experimental, between-subjects design to investigate the effect of short explicit pronunciation instruction on the acquisition and retention of orthographic cues to pronunciation. As the primary objective was to examine changes in learners' performance following instruction, a quantitative research approach was adopted. The study compared two types of instructional treatment: one focusing on orthographic cues to lexical stress placement and another focusing on orthographic cues to vowel pronunciation.

Participants were divided into two instructional groups. The Stress Group ($n = 4$) received explicit instruction on orthographic cues to lexical stress, whereas the Vowel Group ($n = 4$) received explicit instruction on orthographic cues to vowel pronunciation. All participants completed both the lexical stress and vowel pronunciation assessments. In this way, each group acted as a control group for the other. In other words, the performance of the Stress Group on stress items could be compared with that of the Vowel Group and vice versa. This design reduced the likelihood that improvements could be attributed solely to repeated exposure to the testing materials and allowed for a more direct evaluation of instructional effects.

Two different tasks were used to assess participants' pronunciation knowledge before and after the intervention. The first was a production task

consisting of a controlled word reading activity. The second was a prediction task designed to measure learners' explicit awareness of the correspondences between orthography and pronunciation. Both tasks were completed across three testing sessions consisting of a pre-test, an immediate post-test and a delayed post-test conducted one week after instruction allowing for the examination of both immediate learning gains and longer-term retention.

3.3 Instructional Treatment

The instructional treatment consisted of a brief, explicit training session intended to raise learners' awareness of the target orthographic cues. It lasted approximately 20 minutes and was delivered in individual or small group settings. Group sizes varied according to participants' availability. The aim was not to provide extensive pronunciation training but rather to examine whether a brief instructional intervention could facilitate improvements in learners' ability to produce and predict familiar and unfamiliar English words.

The instructional materials were specifically developed for the purpose of the study and focused on relatively regular orthographic patterns that could be explained through simple rules. The instruction emphasized practical application rather than theoretical phonological terminology, allowing participants to immediately apply the rules during subsequent testing sessions. Given the participants L1 (Spanish and Catalan), the instructional materials for the Stress Group built on their familiarity with written accent mark. Thus, to make English lexical stress visually clear, target syllables were presented in capital letters with an explicit stress mark on the stressed vowel (e.g., acCÚmulate). As for the Vowel Group, because Spanish does not have a natural distinction between tense and lax vowels, the training started with a simple explanation. Participants learned that tense

vowels in English are longer, louder and clearer, often sounding just like the name of the alphabet letters, while lax vowels are shorter, softer, and with a more relaxed mouth.

3.3.1 Stress Instruction

Participants assigned to the Stress Group received instruction on orthographic cues to lexical stress placement. The instructional materials focused on three derivational suffixes: *-ate*, *-ize*, and *-ify*. These suffixes were selected because they are relatively productive in English and exhibit predictable stress patterns. What is more, these suffixes might be challenging for Spanish and Catalan learners of English due to L1 transfer from cognate verbs (e.g. *-ar*, *-izar*, *-ificar*). While their L1 system assigns lexical stress to the final or penultimate syllable, English shifts the stress leftward, away from the suffix.

The instructional session introduced participants to the concept of syllable structure in English and explained how certain suffixes influence the location of primary stress within a word. More specifically, following Dickerson's (2015) system, the instruction taught participants to look for two specific positions in the word, namely the "Key Syllable" (the one right before the suffix) and the "Left Syllable" (the one immediately before the Key Syllable). Participants were taught that words ending in *-ify* are usually stressed on the Key Syllable, (e.g. *iDÉntify*), while words ending in *-ize* and *-ate* shift the stress back to the Left Syllable (e.g. *ÓRganize*, *MÓtivate*). Finally, participants were guided through several examples and completed brief practice activities before proceeding to the post-test phase. Examples of the training activities are provided in Appendix B.

3.3.2. Vowel Instruction

Participants assigned to the Vowel Group received instruction on orthographic cues to vowel pronunciation. The instructional treatment focused primarily on contrasts involving syllable structure, particularly the distinction between CVCe and CVCC patterns to demonstrate how spelling predicts whether a vowel sound is tense or lax. Participants learnt that the CVCe pattern, which features a single consonant followed by a final silent *e*, typically signals a tense vowel that often sounds like its letter name (e.g. *diner*, *hoping*), whereas the CVCC pattern uses consonant doubling to indicate a lax vowel sound (e.g. *dinner*, *hopping*). Because participants were not expected to possess phonetic knowledge, explanations relied on familiar word comparisons and practical examples rather than phonetic transcription. As with the stress instruction, participants completed practice activities that required them to identify and apply the target orthographic patterns prior to the post-test. Examples of these activities are presented in Appendix C.

3.4 Materials and Instruments

Three main instruments were used to collect data analyzed in the study: a background questionnaire, a production task, and a prediction task. These instruments provided information about participants' linguistic backgrounds and their performance across the different stages of the study.

3.4.1 Background Questionnaire

Participants completed a background questionnaire prior to the study. It collected information about participants' individual profiles and linguistic backgrounds. The questionnaire included questions about language exposure, as

well as a self-assessment scale ranging from one to five through which participants evaluated their language skills. It served two purposes. First, it was used to verify that participants met the eligibility criteria established for the study, particularly regarding residence in countries where English is spoken as an L1. Second, it provided information about participants' linguistic profiles and previous experience with English, which helped ensure a relatively homogeneous sample.

3.4.2 Production Task

The production task consisted of a controlled word reading activity. Participants were asked to read a list of 30 target words aloud. Half of the items targeted lexical stress patterns and the remaining half targeted vowel pronunciation patterns. The production materials included both real words and nonwords. The complete production test is provided in Appendix D. The inclusion of nonwords allowed for a more direct assessment of learners' ability to apply orthographic rules rather than relying solely on previously stored lexical knowledge. The target items were selected to represent the orthographic patterns addressed during instruction while also including untrained items that shared similar structural characteristics. This made it possible to examine both learning of the specific patterns introduced during instruction and learners' ability to generalise their knowledge to unfamiliar words. All production data were audio recorded for subsequent analysis. To ensure high-quality recordings, the responses were recorded in Praat using professional headsets, providing sufficient audio quality suitable for later spectrographic analysis.

3.4.3 Prediction Task

A prediction task was developed to assess learners' explicit awareness of the

relationship between orthography and phonology. The task consisted of 18 items, divided equally between stress and vowel targets. Participants were required to predict the pronunciation of words on the basis of their orthographic form. The complete prediction test is presented in Appendix E.

For the stress items, participants were presented with a target word and three possible stress patterns. Their task was to identify and circle the option representing the correct primary stress. For example, in an item such as *develop*, they had to choose whether primary stress fell on the first, second, or third syllable (*DÉvelop*, *deVÉlop*, or *develÓP*). For the vowel items, each target word was paired with two keyword options. Participants were asked to predict the pronunciation of the target vowel by selecting the keyword whose vowel sound most closely matched that of the target word. For instance, in an item such as *hopping*, they had to choose whether the vowel sound was closer to that in *hot* or *home*. As in the production task, the prediction task included both real words and nonwords selected from the production task stimuli.

3.5 Procedure

Data collection was carried out over three testing sessions: a pre-test, an immediate post-test and a delayed post-test session conducted one week later. At the very beginning of the study, participants completed the background questionnaire and provided informed consent. They then completed the pre-test, which consisted of both the production and prediction task. The content as well as the order of the tasks were identical for all participants. Following completion of the pre-test, participants received the instructional treatment corresponding to their assigned group. Members of the Stress Group received explicit instruction on orthographic cues to lexical stress placement, whereas members of the Vowel Group

received instruction on orthographic cues to vowel pronunciation. The instructional session lasted approximately 20 minutes and was conducted in small group settings.

Immediately after the instructional phase, participants completed the post-test. The post-test employed the same structure as the pre-test and included both the production and predictions tasks, which allowed to measure immediate learning gains following instruction. One week later, participants completed a delayed post-test. The delayed post-test was identical in structure to the previous testing sessions and was designed to examine whether any gains observed immediately after instruction were retained over time. The overall procedure captured both the immediate effects of instruction and the extent to which learning was maintained beyond the instructional session.

3.6 Data Coding and Scoring

Data from both the production and prediction tasks were coded quantitatively in order to facilitate statistical analysis. The production task was scored using a binary system. Productions that matched the target stress pattern or vowel pronunciation received a score of 1, whereas incorrect productions received a score of 0. All recordings were analyzed through a combination of auditory judgment. When a response was unclear, spectrographic analysis in Praat was used in order to ensure consistency and reliability in the scoring process. Mean scores were calculated for each participant and testing session to examine changes in performance over time.

The prediction task was also scored dichotomously. Correct responses received a score of 1, whereas incorrect responses received a score of 0. Mean scores were then calculated for each participant across the three testing sessions. Following the coding process, the data were organized according to several analytical

categories. In addition to the distinction between stress and vowel items, items were classified according to lexicality (real words vs. nonwords) and training status (items used during instruction vs. items appearing only in the testing materials). By this classification, it was possible to investigate performance from multiple perspectives and to examine whether instructional effects differed across item type.

3.7 Statistical Analysis

All statistical analyses were conducted using RStudio. The production data were analyzed first. Descriptive statistics were calculated in order to examine overall patterns of performance across participants, groups, and testing sessions. Mean scores were calculated from the pre-test, post-test, and delayed post-test. To investigate the effects of Group, Test, and their interaction on participants' performance in both the production and prediction tasks, analyses of variance (ANOVA) were conducted separately for the Stress Group and the Vowel Group. These analyses were used to determine whether changes over time differed according to the type of instructional treatment received. Statistical significance was evaluated using a conventional alpha level (α) of .05.

3.8 Ethical Considerations

Ethical considerations were taken into account throughout all stages of the study. Prior to participation, all individuals completed a questionnaire that included an informed consent form. Participants were informed about the aims of the study, the nature of the tasks they would be asked to complete, and the use of audio recordings for research purposes.

Participation was entirely voluntary, and participants were informed that they could withdraw from the study at any time without any negative consequences.

Before providing consent, participants were informed that all responses and recordings would be treated confidentially and used exclusively for academic research purposes.

To ensure anonymity, all participants were assigned identification codes (P01-P08), which were used throughout the analysis and reporting of the results. Audio recordings obtained during the production task were used solely for scoring and analysis purposes. All recordings and questionnaire responses were stored securely and were not shared outside the scope of the present study.

4. Results

4.1 Production Task

4.1.1 Results at the Group Level

Table 4.1 presents the mean production scores (M) and standard deviations (SD) obtained by the Stress Group and the Vowel Group across the three testing sessions. Results are reported separately for stress and vowel items in order to compare performance on the feature that received instruction with performance on the feature that did not.

Table 4.1

Production task: Mean accuracy scores and standard deviations by group, stimulus type, and testing session

Stimulus Type	Group	Pretest M (SD)	Posttest M (SD)	Delayed M (SD)
Stress	Stress-trained	0.82 (0.39)	1.00 (0.00)	1.00 (0.00)
	Vowel-trained	0.42 (0.50)	0.78 (0.42)	0.68 (0.47)
Vowel	Stress-trained	0.65 (0.48)	0.67 (0.48)	0.68 (0.47)
	Vowel-trained	0.55 (0.50)	0.75 (0.44)	0.80 (0.40)

For stress items, the Stress Group achieved the highest levels of accuracy throughout the study. Mean scores increased from 0.82 in the pre-test to 1.00 in the post-test and remained at 1.00 in the delayed post-test. The corresponding standard deviations decreased from 0.39 in the pre-test to 0.00 in both subsequent testing sessions, indicating that there was no variability in participants' performance following instruction.

The Vowel Group obtained lower scores on stress items overall. Mean accuracy increased from 0.42 in the pre-test to 0.78 in the post-test before decreasing slightly to 0.68 in the delayed post-test. This improvement was greater than that observed in the Stress Group, likely because the Vowel Group started with lower pre-test scores and had more room for improvement. Standard deviations remained relatively stable across the three testing sessions, ranging from 0.42 to 0.50, which indicates substantial variability among participants.

A different pattern emerged for vowel items. The Stress Group showed relatively stable performance, with mean score of 0.65, 0.67 and 0.68 across the pre-test, post-test and delayed post-test. Standard deviations remained similar across testing sessions, suggesting that the degree of variability within the group changed little over time. Although the group means suggested relatively stable performance, individual participants demonstrated different patterns of change. The Vowel Group demonstrated higher levels of improvement on vowel items. Mean scores increased from 0.55 in the pre-test to 0.75 in the post-test and further increased to 0.80 in the delayed post-test. At the same time, standard deviations decreased from 0.50 in the pre-test to 0.44 in the post-test and 0.40 in the delayed post-test, reflecting greater consistency among participants over time.

Overall, higher mean scores were observed in the post-test and delayed post-test than in the pre-test across all conditions, although improvement for the Stress Group on vowel items was minimal. The largest increases were observed for stress items in the Vowel Group. However, the most consistent improvements in the trained production feature were observed for stress items in the Stress Group and vowel items in the Vowel Group. In contrast, performance on the production feature that did not receive instruction generally showed smaller changes across testing sessions.

4.1.2 Results at the Participant Level

Table 4.2 displays accuracy scores at the participant level for stress and vowel items in the production task across the three testing sessions. The table provides a more detailed view of individual performance patterns and complements the results at the group level results reported in the previous section.

Table 4.2*Participant level accuracy scores for stress and vowel items in the production task*

Group	Participant	Stress			Vowel		
		T1	T2	T3	T1	T2	T3
Stress	P01	1.00	1.00	1.00	0.73	0.80	0.73
	P02	1.00	1.00	1.00	0.47	0.53	0.67
	P03	1.00	1.00	1.00	0.87	1.00	0.93
	P04	0.27	1.00	1.00	0.53	0.33	0.47
Vowel	P05	0.73	0.93	1.00	0.67	1.00	1.00
	P06	0.00	0.20	0.00	0.60	0.87	0.87
	P07	0.00	1.00	0.80	0.47	0.73	0.87
	P08	0.93	1.00	0.93	0.47	0.40	0.47

Note: T1 = pre-test; T2 = post-test; T3 = delayed post-test. Scores represent mean accuracy for each participant by stimulus type and testing session.

For stress items, participants in the Stress Group generally achieved high level of accuracy throughout the study. Participants P01, P02, and P03 obtained perfect scores across all three testing sessions, indicating consistently accurate production of the target stress patterns. In contrast, P04 demonstrated substantially lower performance in the pre-test (0.27), but achieved ceiling performance in both the post-test and delayed post-test, suggesting a marked increase in accuracy following the instructional session.

Within the Vowel Group, greater variability was observed for stress items. Participant P05 demonstrated gradual improvement across testing sessions, increasing from 0.73 in the pretest to 0.93 in the post-test and 1.00 in the delayed post-test. Participant P06 obtained comparatively low scores throughout the study recording 0.00 in the pre-test, 0.20 in the post-test and 0.00 in the delayed post-test. Participant P07 exhibited a notable increase between the pre-test and post-test improving from 0.00 to 1.00, although a slight decline was observed in the delayed

post-test (0.80). Participant P08 maintained relatively high levels of performance across all three testing sessions, scoring 0.93 in the pre-test, 1.00 in the post-test, and 0.93 in the delayed post-test.

The results for vowel items revealed a different pattern. Among participants in the Stress Group, performance remained relatively stable across testing sessions. Participants P01 and P03 obtained consistently high scores, while P02 showed a modest increase over time. Participant P04 showed some fluctuation in performance, with lower accuracy in the post-test compared to the pre-test.

Participants in the Vowel Group generally demonstrated stronger gains on vowel items. Participant P05 improved from 0.67 in the pre-test to 1.00 in both the post-test and delayed post-test. Similarly, P06 increased from 0.60 to 0.87 and maintained this level of performance one week later. Participant P07 showed progressive improvement across testing sessions, rising from 0.47 in the pre-test to 0.87 in the delayed post-test. In contrast, P08 exhibited relatively stable performance throughout the study, with only minor fluctuations across the three testing sessions.

The results at the participant level revealed considerable individual variation. While several participants demonstrated substantial improvements over time. Others showed relatively stable performance across testing sessions. This variation may reflect individual differences in factors such as initial proficiency, previous pronunciation instruction, or prior exposure to English. Nevertheless, the general patterns observed at the participant level were broadly consistent with the trends identified in the analysis at the group level presented in section 4.1.1.

4.1.3 Inferential Analysis

In order to determine whether the differences observed in the production task were statistically significant, mixed-design analyses of variance (ANOVA) were

conducted separately for stress and vowel items. The analyses examined the effect of Group (Stress Group vs. Vowel Group), Test Session (pre-test, post-test and delayed post-test), and the interaction between these variables. The results are presented in Table 4.3.

Table 4.3

Mixed-design ANOVA results for the production task by stimulus type

Effect	Stress F (p)	Vowel F (p)
Group	65.99 (<.001)	0.47 (.494)
Test Session	19.51 (<.001)	3.08 (.047)
Group $\times$ Test Session	1.92 (.149)	1.91 (.150)

For stress items, the ANOVA revealed a significant main effect of Group, F (1, 3) = 65.99, p < .001, indicating overall differences between the Stress Group and the Vowel Group. A significant main effect of Test Session was also observed, F (2,3) = 19.51, p < .001, suggesting that participants' performance changed across the three testing sessions. However, the interaction between Group and Test Session did not reach statistical significance, F (2, 3) = 1.92, p = .149. This finding indicates that although performance differed between groups and across testing sessions, the pattern of change over time was not significantly different between the two groups.

For vowel items, no significant main effect of Group was found, F (1, 3) = 0.47, p = .494, indicating that the two instructional groups achieved comparable levels of overall performance. Nevertheless, a significant main effect of Test Session was observed, F = 3.08, p = .047, illustrating that performance changed across the three testing sessions. The interaction between Group and Test Session was not significant, F (2, 3) = 1.91, p = .150, indicating that the trajectory of change across testing sessions did not differ significantly between the Stress Group and the

Vowel Group.

The ANOVA results confirm that participants' production accuracy improved over time for both stimulus type. For stress items, significant differences were observed both between groups and across testing sessions, whereas for vowel items improvement across testing sessions was observed irrespective of instructional group. No significant Group x Test Session interactions were found for either stimulus type, suggesting that the extent of change across testing sessions was broadly comparable across groups. Although the group means for vowel items appeared to show greater improvement in the Vowel Group than in the Stress Group, substantial individual variability within both groups likely contributed to the absence of a significant interaction.

4.2. Prediction Task

4.2.1 Results at the Group Level

Descriptive statistics for the prediction task are presented in Table 4.4. The table provides mean accuracy scores and standard deviations for each group across the three testing sessions, distinguishing between stress and vowel items.

Table 4.4

Prediction task: Mean accuracy scores and standard deviations by group, stimulus type, and testing session

Stimulus Type	Group	Pretest M (SD)	Posttest M (SD)	Delayed M (SD)
Stress	Stress-trained	1.00 (0.00)	0.89 (0.32)	0.94 (0.23)
	Vowel-trained	0.67 (0.48)	0.86 (0.35)	0.97 (0.17)
Vowel	Stress-trained	0.53 (0.51)	0.64 (0.49)	0.58 (0.50)
	Vowel-trained	0.67 (0.48)	0.83 (0.38)	0.89 (0.32)

For stress items, contrasting patterns emerged across the two instructional groups. The Stress Group began the study at ceiling level ($M=1.00$, $SD=0.00$), followed by a slight decline in the post-test ($M=0.89$, $SD=0.23$). In contrast, the Vowel Group showed a progressive increase in performance across testing sessions, with mean scores rising from 0.67 ($SD=0.48$) in the pre-test to 0.86 ($SD=0.35$) in the post-test and 0.97 ($SD=0.17$) in the delayed post-test.

Performance on vowel items followed a somewhat different pattern. Whereas the Stress Group showed only modest fluctuations across testing sessions (Pretest: $M=0.53$, $SD=0.51$, Post-test: $M=0.64$, $SD=0.49$, Delayed Post-test: $M=0.58$, $SD=0.50$), the Vowel Group demonstrated a more sustained upward trend. Mean accuracy increased from 0.67 ($SD=0.48$) in the pre-test to 0.83 ($SD=0.38$) in the post-test and reached 0.89 ($SD=0.32$) in the delayed post-test.

The descriptive statistics indicate that the most consistent gains were

observed in the Vowel Group, which demonstrated improvements across both stimulus types over time. By comparison, performance in the Stress Group remained relatively stable, particularly for stress items, where accuracy was already high at the outset of the study. Although changes were observed across several conditions, the magnitude and direction of these changes varied according to both instructional group and stimulus type.

4.2.2 Results at the Participant Level

Performance at the participant level in the prediction task is presented in Table 4.5. The table reports individual accuracy scores for stress and vowel items across the pre-test, post-test and delayed post-test, allowing for a more detailed examination of variation within and across instructional groups.

Table 4.5

Participant level accuracy scores for stress and vowel items in the prediction task

Group	Participant	Stress			Vowel		
		T1	T2	T3	T1	T2	T3
Stress	P01	0.72	0.94	0.78	0.44	0.89	0.56
	P02	0.67	0.50	0.61	0.33	0.22	0.33
	P03	0.94	0.78	0.94	0.89	0.78	1.00
	P04	0.72	0.83	0.72	0.44	0.67	0.44
Vowel	P05	0.78	0.94	1.00	0.67	1.00	1.00
	P06	0.67	0.89	0.94	0.56	1.00	1.00
	P07	0.44	0.89	1.00	0.78	1.00	1.00
	P08	0.78	0.67	0.78	0.67	0.33	0.56

Note: T1 = pre-test; T2 = post-test; T3 = delayed post-test. Scores represent mean accuracy for each participant by stimulus type and testing session.

For stress items, participants in the Stress Group displayed different trajectories over time. P01 improved from 0.72 in the pre-test to 0.94 in the post-test before declining slightly to 0.78 in the delayed post-test. P02 showed a decrease from 0.67 to 0.50, followed by a partial recovery to 0.61. P03 maintained relatively high performance throughout the study, obtaining scores of 0.94, 0.78, and 0.94 across the three testing sessions. P04 showed only limited variation, with scores of 0.72, 0.83, and 0.72. Within the Vowel Group, improvement was generally more pronounced. P05 increased from 0.78 in the pre-test to 0.94 in the post-test and reached 1.00 in the delayed post-test. P06 followed a similar pattern, progressing from 0.67 to 0.89 and subsequently to 0.94. P07 demonstrated substantial gains, rising from 0.44 in the pretest to 0.89 in the post-test and 1.00 in the delayed post-test. In contrast P08 showed little overall change, obtaining scores of 0.78, 0.67, and 0.78..

A somewhat different pattern emerged for vowel items. In the Stress Group, P01 improved from 0.44 to 0.89 between the pre-test and post-test. Although performance decreased to 0.59 in the delayed post-test. P02 remained at comparatively low levels throughout the study, with scores of 0.33, 0.22, and 0.33. P03 maintained high performance across all testing sessions, increasing from 0.89 in the pre-test to 1.00 in the delayed post-test. P04 showed moderate fluctuations, moving from 0.44 to 0.67 before returning to 0.44 in the delayed post-test. Among participants in the Vowel Group, P05 demonstrated consistent improvement, increasing from 0.67 to 1.00 and maintaining this level in the delayed post-test. P06 also improved substantially, progressing from 0.56 in the pre-test to 1.00 in both subsequent testing sessions. P07 began with a relatively high score of 0.78 and reached ceiling performance in the post-test and delayed post-test. P08 displayed a

less stable pattern, declining from 0.67 in the pre-test to 0.33 in the post-test before partially recovering to 0.56 in the delayed post-test.

The results at the participation level suggest considerable individual variation in the prediction task. Nevertheless, several participants, particularly within the Vowel Group, exhibited substantial gains across testing sessions. Improvements were observed not only for vowel items but also for stress items, indicating that some participants were able to extend their knowledge beyond the specific examples encountered during instruction. At the same time, a number of participants showed fluctuating performance across testing sessions, which suggests that gains were not uniform across individuals or stimulus types. This variability may again be attributed to differences in learners' initial proficiency, previous pronunciation training, or prior exposure to English.

4.2.3 Inferential Analysis

To examine whether performance in the prediction task varied according to instructional group and testing session, mixed-designed ANOVA were conducted separately for stress and vowel items. The analyses assessed the effects of Group (Stress Group vs. Vowel Group), Test Session (Pre-test, Post-test, and Delayed Post-test), and the interaction between these two factors. The results are presented in Table 4.6.

Table 4.6
Mixed-design ANOVA results for the prediction task by stimulus type

Effect	Stress <i>F</i> (<i>p</i>)	Vowel <i>F</i> (<i>p</i>)
Group	7.48 (.007)	12.08 (<.001)
Test Session	3.27 (.040)	2.28 (.104)
Group × Test Session	7.63 (<.001)	0.64 (.529)

For stress items, the analysis revealed a significant main effect of Group $F(1, 3) = 7.48, p = .007$, indicating overall differences in performance between the Stress Group and the Vowel Group. A significant main effect of Test Session was also observed, $F(2, 3) = 3.27, p = .040$, suggesting that participants' performance changed across testing sessions. Furthermore, a significant interaction between Group and Test Session was found, $F(2, 3) = 7.63, p < .001$. This interaction indicates that the two groups followed different patterns of development over time, with changes in performance varying according to instructional group.

A different pattern emerged for vowel items. The main effect of Group was significant, $F(1, 3) = 12.08, p < .001$, demonstrating overall differences in performance between the Stress Group and the Vowel Group. However, neither the main effect of Test Session, $F(2, 3) = 2.28, p = .104$, nor the interaction between Group and Test Session, $F(2, 3) = 0.64, p = .529$, reached statistical significance. Although descriptive statistics suggested some improvement over time, the variability within the groups may have reduced the likelihood of detecting statistically significant effects.

The ANOVA results indicate that instructional group played a significant role in prediction task performance for both stress and vowel items. However, the effect of testing session differed according to stimulus type. For stress items, performance changed significantly across testing sessions with the pattern of change differing between groups. While the stress group remained relatively stable due to its high initial performance, the Vowel Group showed a more marked improvement over time.

5. Discussion

5.1 Effects of Explicit Instruction on Pronunciation Performance

The primary aim of this study was to examine whether a brief instructional intervention could improve learners' ability to produce and predict English pronunciation patterns from orthographic information. The findings suggest that explicit instruction had a positive effect on participants' performance, although the extent of improvement varied across tasks, target features, and individual learners.

The results obtained from the production task indicate that participants generally performed better following instruction than they had during the pre-test. This tendency was evident for the pronunciation features targeted during instruction. Participants in the Stress Group showed improvements on stress items, while members of the Vowel Group demonstrated gains on vowel items. Although improvements were not uniform across all participants, the general pattern suggest that learners were able to make use of the orthographic cues introduced during the instructional session when producing the target words.

A similar tendency emerged in the prediction task. In several cases, participants achieved higher accuracy scores in the post-test and delayed post-test than in the pre-test, indicating an increased ability to infer pronunciation from spelling patterns. The fact that improvements were observed not only in production but also in prediction is meaningful, since it suggests that learners were developing an awareness of the relationship between orthography and pronunciation rather than simply imitating previously encountered examples. In other words, instruction appears to have influenced both the practical application of pronunciation rules and learners' ability to recognize those patterns when exposed to unfamiliar lexical items.

The statistical analyses overall support these observations. Significant effects of testing session were identified in several of the analyses, indicating that performance changed over time. Furthermore, analyses at the participant level revealed that many learners achieved their highest scores in either the post-test or delayed post-test. Thus, these findings provide evidence that even a relatively short instructional intervention can contribute to measurable improvements in learners' pronunciation related performance.

At the same time, the results suggest that the effectiveness of instruction was not identical for all participants. Some learners demonstrated substantial gains following instruction, whereas others show more modest changes. This variation is perhaps not surprising given the complexity of pronunciation learning and the range of factors that can influence individual development, such as phonological awareness, overall proficiency and learners' ability to notice and apply the instructional content and so on. Consequently, while the findings support the value of explicit pronunciation instruction, they also highlight the importance of considering individual differences when evaluation instructional outcomes, particularly in studies involving small samples, where individual participant performance can exert a substantial influence on the overall patterns.

5.2 Transfer to Untaught Features

One of the most interesting aspects of the present study concerns the extent to which learning transferred beyond the specific pronunciation feature targeted during instruction. Because each instructional group served as a control group for the feature taught to the other group, it was possible to examine not only whether participants improved on the feature they were explicitly taught, but also whether any gains extended to pronunciation patterns that received no direct instruction.

In general, the findings reveal that improvements were generally more pronounced for the feature targeted during instruction. In the production task, participants in the Stress Group tended to show stronger gains on stress items, whereas participants of the Vowel Group demonstrated greater improvement on vowel items. A similar tendency was observed in the prediction task, where participants generally achieved their highest scores on the pronunciation feature that had been the focus of instruction. However, the Vowel Group also showed noticeable improvement on stress items, which may reflect increased familiarity with the task rather than an effect specific to the instructional treatment. These findings indicate that learners were able to make use of the orthographic cues presented during the instructional session and apply them to the target feature in subsequent testing sessions.

At the same time, the results do not suggest a complete absence of transfer. Some participants demonstrated improvements on the non-instructed feature, particularly in the prediction task. Although these gains were generally smaller and less consistent than those observed for the instructed feature, they raise the possibility that explicit attention to relationship between orthography and phonology may have fostered a broader awareness of English spelling to sound correspondences. In other words, learners may have become more attentive to pronunciation patterns in general rather than focusing exclusively on the specific rules presented during instruction.

Several explanations may account for this pattern. First, both instructional conditions encouraged participants to analyze words. As a consequence, learners may have approached subsequent testing tasks with a greater awareness of the relationship between spelling and pronunciation, even when dealing with features

that had not been explicitly taught. Second, repeated exposure to the testing materials may have contributed to minor improvements across some conditions. Since participants completed the same testing procedures on three occasions, a certain degree of familiarity with the tasks cannot be excluded.

If improvements had occurred to the same extent across all conditions, it would be difficult to attribute them to the instructional intervention. Instead, the general pattern indicates that instruction played a meaningful role in shaping learners' performance, while also allowing for a certain degree of transfer in some cases beyond the specific feature that was taught. This finding might be promising from a pedagogical perspective, as it suggests that even brief pronunciation instruction may contribute not only to the acquisition of particular pronunciation rules but also to the development of a more general sensitivity to orthographic patterns in relation to English phonology.

Nevertheless, the evidence for transfer should be interpreted cautiously. The small sample size and the variability observed across participants make it difficult to determine the extent to which transfer would occur in larger populations or under different instructional conditions. Future research involving larger groups of learners and longer instructional interventions may help clarify whether the gains observed on non-instructed features represent genuine transfer of learning or reflect broader increases in task familiarity and phonological awareness.

5.3 Retention of Learning Over Time

In addition to examining immediate gains following instruction, the study sought to determine whether any improvements would be maintained beyond the instructional session. For this reason, a delayed post-test was conducted one week after the intervention. The inclusion of a delayed measure was important to include

in a study of this nature, as improvements observed immediately after instruction do not necessarily indicate lasting learning (Logan & Pruitt, 1995; Thomson, 2018). Learners may perform well shortly after training because the material remains fresh in memory, yet these gains may diminish once the effects of recent exposure begin to fade.

The findings provide positive evidence for the retention of learning over time. In many cases, participants maintained the gains observed in the post-test, and some even achieved their highest levels of performance in the delayed post-test. This pattern was visible in both the production and prediction tasks, suggesting that the effects of instruction were not restricted to the immediate testing session. Although the delayed post-test was conducted only one week after the intervention, the results indicate that participants were able to retain at least part of the knowledge acquired during instruction.

The analyses at the participant level further support this interpretation. Several learners demonstrated stable performance between the post-test and delayed post-test, while others continued to improve over time. For example, some participants who showed noticeable gains immediately following instruction maintained these improvements one week later, which provide evidence that the instructional intervention resulted in more than short-term task familiarity. Noteworthy is the fact that some of the largest gains were observed among participants who initially obtained lower scores. For these learners, improvements often remained apparent in the delayed post-test, pointing to benefits of instruction were not entirely transient.

At the same time, retention was not uniform across all participants or conditions. Some learners exhibited slight decreases in performance between the

post-test and delayed post-test, while others showed fluctuations across testing sessions. Such variation is not unexpected yet again considering the small number of participants and the challenging nature of pronunciation learning. Factors such as attention, motivation, individual differences in phonological awareness and among others may influence the degree to which newly acquired pronunciation patterns are retained over time. Additional factors that may have contributed to this variability are discussed in the following section.

A delayed post-test conducted several weeks or months after instruction would provide a clear picture of the durability of learning and would help determine whether the gains observed in the present study reflect temporary improvement or more stable changes in learners' pronunciation knowledge. Nevertheless, the current findings offer preliminary evidence that explicit attention to orthographic and phonological patterns can lead to learning outcomes that remain observable beyond the instructional session itself.

5.4 Individual Variation in Learning Outcomes

One of the most notable findings of the study is the considerable variation observed across participants. While the analyses at the group level revealed overall patterns of improvement following instruction, the analyses at the participant level demonstrated that the extent of these gains differed substantially from one learner to another. This variability highlights the importance of examining individual performance alongside group means, particularly in small-scale studies where average scores may obscure meaningful differences between participants.

The results at the participant level suggest that learners who began the study with lower levels of accuracy often benefited most from the instructional intervention. The tendency was especially evident in the production task. Participant

P04, for example, showed a significant improvement on stress items, progressing from relatively low pre-test performance to ceiling levels in both post-test and delayed post-test. Similarly, participants P06 and P07 demonstrated noticeable gains on vowel items following instruction. These findings suggest that learners who initially experienced greater difficulty with the target pronunciation features had more opportunity for improvement and were therefore able to make larger gains over the course of the study.

In contrast, several participants consistently exhibited high levels of performance from the outset. Participants P01, P02 and P03, for instance, achieved very high scores on a number of measures during the pre-test and thus had limited room for further improvement. This pattern is characteristic of a ceiling effect, whereby participants begin study at or near maximum performance levels, making substantial gains difficult to observe regardless of the effectiveness of the instructional intervention. Hence, the presence of ceiling effects may help explain why some participants appeared to benefit less from instruction than others.

The variability observed in the study is perhaps reasonable given the complex nature of pronunciation learning. Unlike some aspects of language acquisition, pronunciation development is influenced by a wide range of cognitive, linguistic, and experiential factors (Trofimovich et al., 2015). Learners differ in their prior exposure to English, their familiarity with how spelling affects pronunciation, and their ability to notice and retain phonetic patterns. As a result, even when participants receive identical instruction, individual learning outcomes may vary considerably.

Another factor that may have contributed to the observed variation is the relatively brief nature of the instructional intervention. A single instructional session

is unlikely to affect all learners in the same way. Some participants may have immediately incorporated the information presented during instruction into their existing linguistic knowledge, whereas others may have required additional practice or repeated exposure before demonstrating measurable improvement.

In summary, these findings suggest that the effects of pronunciation instruction cannot be fully understood through analyses at the group level alone. Although the general results indicate that instruction was associated with improvements in performance, the analyses at the participant level demonstrate that learners responded to the intervention in different ways.

5.5 Limitations

Several limitations should be taken into account when interpreting the findings of the present study. Although the results provide preliminary evidence regarding the effectiveness of a brief explicit instruction on orthographic cues to pronunciation, a number of methodological factors restrict the extent to which the findings can be generalized.

The most important limitation concerns the size of the sample. Only eight participants took part in the study, with four learners assigned to each instructional group. While this made it possible to conduct detailed analyses at the participant level, the small number of participants limits the statistical power of the study and reduces its generalizability to broader populations of English language learners. In addition, individual performance had a considerable influence on group means, meaning that particularly strong or weak performances could affect the overall patterns observed in the data. Furthermore, some participants performed at or near ceiling level in the pre-test, leaving limited opportunity for improvement and reducing the likelihood of detecting the effects of the instructional intervention.

A second limitation is related to the retention interval used in the delayed post-test. Although the inclusion of a delayed measure constitutes a strength of the study, retention was assessed only one week after instruction. As a result, the study cannot determine whether the observed gains would remain stable over longer periods of time.

Another consideration concerns the characteristics of the participant sample. Participants were recruited on the basis of self-reported proficiency levels and previous language learning experience. Although background questionnaires were used to collect information about participants' previous experience with English, it is possible that individual differences influenced performance in ways that were not fully captured by the questionnaire. Such factors may have contributed to some of the variability observed across participants.

A further limitation concerns the assessment of pronunciation accuracy. Although all production data was analyzed using Praat and were evaluated through careful auditory analysis, the evaluation of pronunciation depends on the researcher's judgment. The use of acoustic analysis helped increase the reliability of the assessment procedure, however, future studies could further strengthen reliability by incorporating multiple raters.

Despite limitations, the study offers valuable insight into the role of explicit instruction in the development of awareness of the relationship between orthography and phonology. The combination of production and prediction tasks, the inclusion of a delayed post-test and the use of analyses conducted at the individual participant level provide a detailed perspective on learners' responses to instruction.

5.6 Pedagogical Implications and Future Research

The study offers several insights into the teaching and learning of English

pronunciation. Most importantly, the results suggest that even a relatively brief period of explicit instruction can contribute to improvements in learners' ability to interpret and produce pronunciation patterns from orthographic information. Although the intervention lasted only approximately twenty minutes, many participants demonstrated measurable gains in both the production and prediction tasks. This finding has important implications for language teachers, particularly in contexts where pronunciation receives limited classroom attention due to time constraints.

One implication of these findings is that pronunciation instruction does not necessarily need to focus exclusively on imitation and repetition. The study suggests that drawing learners' attention to systematic relationships between spelling and pronunciation may also be beneficial. By helping learners identify recurring orthographic patterns, teachers may provide them with tools that can be applied beyond individual words. Such an approach may promote greater learner autonomy to make decisions when encountering unfamiliar items.

At the same time, the analyses at the participant level indicate that learners do not respond to instruction in identical ways. Some participants demonstrated considerable improvements, whereas others showed more limited gains. The observation provides evidence that pronunciation instruction may be most effective when it accommodates individual learners needs and allows sufficient opportunities for practice. Teachers should be aware that learners may progress at different rates and that short-term gains may vary considerably across individuals.

The study also raises a number of questions that require further investigation. Future research could examine the effects of longer instructional interventions involving repeated practice over extended periods of time to determine whether the

gains observed in the present investigation can be strengthened through continued exposure. The retention of learning represents another area that could be explored. While the delayed post-test provided preliminary evidence that some gains were maintained over time, the retention interval was relatively short. Further studies incorporating delayed post-test several weeks or months after instruction would provide a clearer understanding of the long-term effectiveness of orthographic pronunciation training.

Future research could also explore the extent to which the findings can be extended to other pronunciation features and learner populations. The present study focused on specific orthographic cues related to stress placement and vowel pronunciation among adult learners of English. Future research could investigate whether similar instructional approaches lead to similar results among learners of different proficiency levels, age groups, or linguistic backgrounds.

6. Conclusion

The dissertation examined the effects of a brief explicit instruction on the acquisition and retention of orthographic cues to pronunciation among Spanish learners of English as a foreign language. More specifically, the study investigated whether instruction focusing on orthographic cues associated with lexical stress and vowel pronunciation could improve learners' performance in production and prediction tasks, whether any gains would be retained over time, and whether learners would be able to apply the acquired knowledge to unfamiliar items. By exploring these questions, the study aimed to contribute to a growing body of research examining the relationship between orthography and L2/FL phonological development.

The findings indicate that explicit attention to orthographic cues can support

pronunciation learning. Across both the production and prediction tasks, participants generally demonstrated improvements following instruction, although the extent of these gains varied according to instructional group, stimulus type, and individual learners' characteristics. In production task, participants tended to perform more successfully in the pronunciation features that had received direct instructional attention, suggesting that learners were able to make use of orthographic information presented during the intervention. Similar tendencies were observed in the prediction task, where participants were required to apply orthographic knowledge when making pronunciation judgments. These results suggest that explicit instruction may facilitate learners' awareness of relationship between written and spoken forms and may support the acquisition of pronunciation patterns that are not always readily apparent from exposure alone.

The findings also provide evidence regarding the retention of learning over time. Although some degree of variation was observed across participants and conditions, many of the improvements recorded in the post-test remained visible in the delayed post-test. In several cases, learners maintained the gains achieved immediately after instruction, while some participants demonstrated further improvements between the post-test and delayed post-test. These results suggest that the effect of the instructional intervention were not restricted exclusively to short-term performance and may reflect the development of more stable knowledge. Nevertheless, the retention findings should be considered in light of the relatively short interval between testing sessions. Longer-term investigation would be necessary to determine the extent to which these gains persist over extended periods.

An additional contribution of the study lies in its examination of both lexical stress and vowel pronunciation within a single instructional framework. While these

pronunciation features have often been investigated separately, the present study adopted a broader perspective by considering different types of orthographic cues to pronunciation. This approach made it possible to explore whether learners responded similarly to different kinds of orthographic information and provided a more comprehensive view of the relationship between spelling and pronunciation. Although the findings do not suggest identical patterns across all conditions, they indicate that orthographic information may support pronunciation learning in multiple domains.

The analyses at the participant level also revealed considerable individual variation. While some learners demonstrated substantial improvements following instruction, others exhibited more modest gains or maintained consistently high levels or performance throughout the study. In particular, participants who began the study with lower levels of accuracy frequently showed the greatest improvements, whereas those who performed at near-ceiling level in the pre-test had less opportunity to demonstrate measurable gains. These findings highlight the importance of considering individual differences among learners alongside the results at the group level and suggest that pronunciation development may be influenced by a range of factors specific to learners.

Nevertheless, the findings of the study should be interpreted cautiously. The relatively small sample size limits the extent to which the findings can be generalised to broader populations of English language learners. Furthermore, the instructional intervention was brief, and the delayed post-test was administered only one week after instruction. Therefore, the study cannot provide definitive evidence regarding the long-term effects of orthographic pronunciation instruction. It is also important to note that the research focused on a limited set of orthographic cues

associated with lexical stress and vowel pronunciation. Future studies involving larger samples, longer instructional periods, and a wider range of pronunciation features would help clarify the scope and durability of the effects observed in the present investigation.

Despite these limitations, the study contributes to current understanding of the role of orthographic information in foreign language pronunciation learning. The findings support the view that spelling may function not only as a source of interference but also as a potential valuable resource for learners. When learners develop awareness of the relationship between orthography and phonology, they may become better equipped to interpret pronunciation patterns and make informed judgements about unfamiliar words. Such findings are particularly relevant in educational contexts where learners frequently encounter written and spoken language simultaneously.

To sum up, the study suggests that explicit instruction on orthographic cues to pronunciation can contribute positively to pronunciation learning among Spanish upper-intermediate learners of English. Although further research is required to determine the extent to which these findings apply across different learner populations and instructional contexts, the results indicate that orthographic information represents a potentially useful component of pronunciation instruction. By drawing attention to systematic relationship between spelling and pronunciation, teachers may help learners develop greater awareness of English phonological patterns and foster skills that extend beyond the pronunciation of individual items.

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Appendix A. Background Questionnaire and Consent Form (Adapted from Cebrian, 2019)

Participant Name: _____

Date: _____

Part 1: Background Questionnaire Personal Information

Age: _____

Gender: _____

Occupation / Studies: _____

English Learning

How many years have you been learning English? _____

Self – assessment

(1 = very basic, 5 = very good)

Reading:	1	2	3	4	5
Listening:	1	2	3	4	5
Speaking:	1	2	3	4	5

Exposure to English

How often do you use or hear English outside class? _____

Music: ☐ Never ☐ Sometimes ☐ Often

TV/Series / Films: ☐ Never ☐ Sometimes ☐ Often

Social media / Internet: ☐ Never ☐ Sometimes ☐ Often

Speaking with friends: ☐ Never ☐ Sometimes ☐ Often

Additional Information

Have you ever lived in an English-speaking country?

☐ Yes ☐ No

If yes, where and for how long? _____

Have you taken any pronunciation or phonetics course?

☐ Yes ☐ No

If yes, which? _____

Statement of Confidentiality

All the information collected in this study will be treated confidentially. Your personal data will not appear in any report, publication, or presentation. All results will be analysed anonymously and used only for academic research purposes.

Part 2: Consent Form

I understand that I am being invited to participate in a research study on learning English pronunciation.

I understand that:

- 1) I will complete short language tasks.
- 2) My voice will be audio recorded for research purposes.
- 3) My participation is voluntary.
- 4) I can stop participating at any time without any negative consequences.
- 5) My recordings and responses will be kept confidential, stored securely and used only for academic analysis.

I agree to take part in this study.

Participants Name: _____

Signature: _____

Data: _____

Appendix B. Stress Training Materials

English Word Stress Patterns

Stress with –ify, -ize, and –ate Pronunciation Training Session

What Is Word Stress?

-One syllable is stronger than the others.

-Stressed syllables are:

-Longer

-Louder

-Clearer

-Stress helps listeners recognize words.

-Examples:

-CLÁrify

-acCÚmulate

-aPÓlogize

Syllables and Rhythm

Syllables in English

-A syllable usually contains one vowel sound.

-English rhythm depends on stressed vs unstressed syllables.

Examples:

e-lec-tri-fy

ex-ter-na-lize

co-mu-ni-cate

Note: Dividing words into syllables helps us predict stress placement.

The “Key” Rule (Dickerson, 2015)

Stress Patterns with Suffixes

-Key Syllable = Syllable before the suffix

-Left Syllable = Syllable before the Key syllable

General Pattern

-ify → stress usually on the Key Syllable

-ize / -ate → stress usually on the Left Syllable

Practice

-Stress with –ify

SÍMplify

iDÉntify

CLÁrify

perSÓNify

-Stress with –ate

Éstimate

CÚltivate

Móivate

Célebrate

-Stress with –ize

Órganize

Réalize

CRÍticize

MODernize

English Stress Is Often Predictable

English spelling is not completely irregular.

Suffixes help us predict pronunciation.

Stress patterns can generalize to new words.

Appendix C. Vowel Training Materials

English Vowel Patterns

Final -e and Consonant Doubling Pronunciation Training Session

Tense vs Lax Vowels English Vowel Contrasts

Tense Vowels

-longer and clearer

-often sound like the letter name

Examples:

/eɪ/ → face

/aɪ/ → five

/oʊ/ → home

Lax Vowels

-shorter and more relaxed

Examples:

/æ/ → cat

/ɪ/ → fish

/ɒ/ → hot

Final -e Pattern

When a vowel is followed by:

-one consonant

-final silent -e

-CVC - e

The vowel is usually tense.

Examples:

made

bike

note

cute

Note: the vowel often sounds like the name of the letter.

Consonant Doubling

Consonant Doubling Pattern

-Double consonants usually keep the vowel short (lax).

-CVCC

Examples:

matter → /æ/

dinner → /ɪ/

coffee → /ɒ/

running → /ʌ/

Practice

Compare Vowel Patterns

Tense Vowel

made

diner

hoping

rider

Lax Vowel

matter

dinner

hopping

ridden

Nonwords and Prediction

- English Spelling helps Predict Pronunciation
- Even invented words follow spelling patterns.

Examples:

dake

minner

stope

English spelling is not completely irregular.

Recognizing spelling patterns improves pronunciation and intelligibility.

Appendix D. Production Test

Please say your name and read the following 30 words out loud at a natural speed.

postulate
taping
depolarize
contibate
winner
exemplify
emblemize
rated
ameliorate
pantalize
hopping
electrify
externalize
shammer
filing
anticipate
justify
rattled
hoping
dancify
recognize
fanned
nodder
filling
certify
abdicate
winer
tapping
noter
siling

Appendix E. Prediction Test

- If the item contains **three answer options**, choose which syllable receives the main stress in English pronunciation.

Example:

- 1) develop
 a) DÉvelop
 b) deVÉlop
 c) develÓP

Correct answer: **b) deVÉlop**

- If the item contains **two answer options**, choose which word has the closest vowel sound.

Example:

- 2) cake
 a) cat
 b) face

Correct answer: **b) face**

- 1) ameliorate
 a) aMÉliorate
 b) amelioRÁTE
 c) ameLÍorate
- 2) taping
 a) cat
 b) face
- 3) depolarize
 a) depoLÁrize
 b) dePÓlarize
 c) DÉpolarize
- 4) winner
 a) fish
 b) five
- 5) dancify
 a) danCÍfy
 b) danciFY
 c) DÁNcify
- 6) shammer
 a) cat
 b) face
- 7) exemplify
 a) exÉMplify
 b) ÉXemplify
 c) exempliFY
- 8) hoping
 a) hot
 b) home
- 9) contibate
 a) CÓNtibate
 b) contiBÁTE

- c) conTÍbate
- 10) filing
a) fish
b) five
- 11) externalize
a) exTÉrnalize
b) externalÍZE
c) exterNÁlize
- 12) faned
a) map
b) name
- 13) diversify
a) diversiFY
b) diVÉrsify
c) DÍversify
- 14) hopping
a) hot
b) home
- 15) abdicate
a) ÁBdicate
b) abDÍcate
c) abdiCÁTE
- 16) rated
a) map
b) name
- 17) pantalize
a) pantaLÍZE
b) PÁNtalize
c) panTÁlize
- 18) siling
a) fish
b) five