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EFL Pronunciation and Spelling Competence at the Crossroads in the AI-Era Education

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ABSTRACT

Pronunciation and spelling are undervalued and dissociated skills in English as a Foreign Language (EFL) education. While the discrepancy between English spelling and pronunciation hinders the improvement of EFL learners' speaking proficiency, limited attention has been granted to the cognitive connection between these two skills in EFL pedagogy and academic research. Misrepresenting spelling and pronunciation among EFL learners indicates a deep learning difficulty that requires serious attention and innovative pedagogic interventions. The present study explores Arabic-speaking EFL learners' perceptions about the dichotomy between pronunciation and spelling in EFL education and their awareness about the impact of this morpho-phonemic association on improving their pronunciation skills for more accuracy, intelligibility, and fluency. The study investigates EFL learners' perceived experiences in spelling and pronunciation, and the role teachers and technological resources can play in improving their pronunciation and spelling concurrently. The study adopts a qualitative method approach for data collection using a cross-sectional survey. The subjects comprise 147 EFL students from an Omani university. The data were analysed quantitatively with descriptive statistics. The study's outcomes focused on an exploration of learners' awareness, perceptions, and learning patterns and an investigative analysis of relevant instructors' approaches and practices while providing a normative description of effective pedagogic strategies.

Keywords: Spelling-sound Correlation; EFL Education; Pronunciation; Arabic-speaking Learners; AI Tools

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1. Introduction

Over the last three decades, the importance of pronunciation has experienced a continuous decline in language teaching and research due to the growing trends that emphasized "meaning over form"[1]. Derwing and Munro[2] remarked that the topic of pronunciation instruction received little attention in applied linguistics research, and that L2 instructors received humble pedagogic guidance on teaching pronunciation. In a connected global community, the role of English as an international lingua franca that facilitates interlingual and intercultural communication continues to expand worldwide[3]. As a cross-linguistic communication medium, spoken English started to have precedence over written English, giving rise to a renewed focus on pronunciation in EFL education and research[4]. Pronunciation is an essential aspect of speaking proficiency[5] which is in high demand in today's globalized English settings on the academic and professional levels and beyond[6].

Despite the consensus on the centrality of pronunciation in language curriculum and the steady growth in research on pronunciation instruction, investigating the effectiveness of various educational approaches and technological resources in improving pronunciation continues to be underexplored. Pennington[1] clarified that teaching pronunciation has been affected by several factors including social and psychological trends, multilingual factors, prioritizing communication over correctness as well as the constant developments in technological resources used in improving pronunciation. Derwing and Munro[2] called for teaching-research nexus to explore relevant practices in the classroom, emphasizing that the main consideration behind pronunciation instruction and the use of pronunciation improvement resources is achieving language users' intelligibility when they communicate using a foreign language. According to Jarosz[4], the purpose behind teaching pronunciation in EFL contexts is to be understood by others.

Pronunciation instruction comprises several aspects of word pronunciation mechanisms: the first level is related to producing segmental components such as consonants, vowels, diphthongs, etc.; and the second level is relevant to suprasegmental features like stress, intonation, rhythm[7], tone and juncture in producing words or longer utterances[4]. While the segmental aspect is associated with precision and accuracy of spoken communication, the suprasegmental level is associated with general fluency and proficiency. One of the basic pronunciation issues that EFL learners encounter at their A1-B2 levels is the tendency to mispronounce segmental components, such as vowels, consonants, and silent sounds, which leaves a detrimental impact on the clarity and intelligibility of their spoken language and, thus, hampers effective communication.

An overlooked aspect of pronunciation improvement obstacles is related to the inherent relationship between the two skills of pronunciation and spelling. The correlation between spelling and pronunciation in English is intricate for several reasons related to inconsistencies and divergence between English spelling and pronunciation, leading to morphological and phonological confusion among EFL learners, as English words are not spelled the way they are spoken and vice versa. The source of such anomalies is that "English pronunciation has changed over the centuries while the spelling has remained basically the same"[8]. English words exhibit morpho-phonemic irregularities that influence EFL learners' oral and writing communication skills. Brown[9] remarked that "English spelling is, for various reasons, a poor representation of how words are pronounced". This implies that English words lack correspondence between their spelling and their pronunciation[10], and this creates diverse challenges for EFL/ESL students in improving their pronunciation skills. Similarly, the discrepancy between English spelling and pronunciation adds a further dimension to English Language Teaching (ELT) to be observed by EFL/ESL instructors.

Teaching or learning pronunciation takes place on the level of individual words, and the same applies to learning spelling, which also happens on the level of words. To put it differently, spelling and pronunciation are two aspects of vocabulary acquisition, and this implies that they need to be correlated whenever necessary for better educational outcomes. This study is significant as it investigates a rising phenomenon and an overlooked area of EFL education. The potential of improving EFL learners' spelling competence and pronunciation accuracy is encountering multiple challenges related to the spelling/speaking inconsistencies innate in the English language coupled with the interference of L1 in L2 production, and the impact of continuous reliance on technological resources among learners.

2. Literature Review

2.1. Pronunciation Improvement Hindrances Among EFL Learners

Recently, EFL learners' pronunciation skills have begun to receive growing attention as evident in several studies that tackled the role of instructors in improving learners' pronunciation, the vital role of pronunciation in communicative competence and the value of improved pronunciation for listening skills [11–15]. Brown[9] defines pronunciation instruction as the "practical process of using phonetic and phonological knowledge to identify (potential) problems for learners and produce sound activities for the classroom and outside" so that learners can gradually acquire an appropriate and clear pronunciation of the language. Pronunciation teaching also requires an understanding of good language teaching practices relevant to learners' attitudes and motivation.

In an exploratory study that investigated teachers' and learners' perceptions about teaching pronunciation in tertiary EFL education, Nguyen et al.[16] remarked that pronunciation instruction is a necessary aspect that EFL teachers need to focus on. The main purpose of teaching native-speaker pronunciation is for language learners to use their second/foreign language intelligibly and clearly (see also Qian and Farahan[15]). Deterding and Mohamad[17] pointed out the importance of accommodating the diversity and variation of English worldwide and the continuous evolution of English pronunciation while emphasizing that EFL learners "need to be made aware of when their pronunciation deviates from both native-speaker norms and their local norms to the point where they risk becoming unintelligible in some situations".

One overlooked aspect of pronunciation instruction is the spelling-sound connection, which is hardly consistent in the English language, and thus poses challenges for EFL learners' pronunciation competence as it makes written English "a source of error for spoken English"[18]. In other words, the pronunciation of words sometimes goes contrary to learners' expectations about their spelling, and this inability of EFL learners to predict the correct pronunciation of words is evident in their practice of reading and use of vocabulary. But it is also manifested in their speaking as well as spelling practice since the spelling-pronunciation anomalies can be easily misleading and disruptive for EFL learners. According to Mauroux[18], spelling-sound issues can be re-

solved via a thorough understanding of the "rules, subrules and exceptions" of the spelling-sound system. Although this type of understanding covers a complex set of rules and irregularities that can be mastered only by specialists, EFL instructors can support their learners in the A2-B2 level by exposing them to regularities while bringing some irregularities in the spelling-sound code to their attention every while and then. Learners' understanding of key patterns and exceptions in this code will gradually facilitate their mastery of pronunciation skills.

Another hindrance that EFL learners encounters while improving their pronunciation and spelling competencies is related to the increased and ubiquitous use of technology[19] which has left a durable impact on their productive language skills such as writing and speaking proficiency. There is no doubt that technology yields a multifaceted positive impact on EFL learners by virtue of its affordances in the form of interactive learning apps in addition to vocabulary and grammar checkers and writing tools that reinforce spelling competence and help learners identify and correct spelling errors. Nonetheless, these affordances are limited when it comes to the improvement of certain productive skills such as pronunciation and spelling (when working offline). This is the result of learners' overreliance on autocorrect features that make them overly dependent rather than involved in active learning.

With the growing demand on technological resources in EFL teaching and learning, traditional educational methods are becoming less popular, and EFL/ESL instructors are becoming less involved in highlighting the irregularities in the pronunciation versus spelling of certain words or correcting students' pronunciation of words. Balancing technology and traditional learning methods is crucial for diversifying learning styles and effective language acquisition. This requires utilizing blended learning approaches that combine face-to-face instruction with technology-mediated activities. A meta-analysis of the impact of traditional teaching versus technology-based instruction on EFL learners proved that the use of traditional instruction yielded the same effect of technology-based instruction[20].

Adara et al.[21] highlighted the challenges associated with pronunciation competence in L2 acquisition and posited that L2 teachers and researchers can develop effective approaches to improve learners' pronunciation skills and in-

crease their motivation to learn EFL by correcting pronunciation errors and analysing them. The authors underscored the need to train EFL instructors "in pronunciation instruction" and remarked that challenges facing EFL learners in improving their pronunciation are irrelevant to "the time spent learning English or the educational level of the learner". Rather, they are related to a set of extrinsic factors, including the role played by teachers in correcting pronunciation mistakes. Barry and Yuan[22] researched the perceptions and practices of EFL teachers about pronunciation instruction and highlighted ineffective teaching practices due to inadequate training and sociocultural considerations that influence teachers' confidence and leave an impact on their relevant pedagogies.

2.2. Spelling-Pronunciation Correspondence among Arabic-speaking Learners

The third barrier that obstructs pronunciation improvement among EFL learners is related to the contrastive gaps between L1 and L2 linguistic components and structures. According to contrastive analysis theories, "learning pronunciation features of the L2 is easier when the L2 and L1 are similar"[4]. EFL Arabic-speaking students encounter compounded challenges in their efforts to improve their English spelling and pronunciation skills due to several factors. For a start, Arabic and English have distinct orthographic and pronunciation rules[10]. Richards and Schmidt[23] defined 'orthography' as the "correct or standard spelling of words... Like the term 'spelling' itself, the term 'orthography' is more likely to be used of alphabetic writing than of syllabic writing and is unlikely to be used of character-based writing systems". On the other hand, 'pronunciation' refers to how sounds are produced and "perceived by the hearer... and often relates the spoken word to its written form, e.g.: In the word 'knife', the 'k' is not pronounced".

The structural differences between Arabic and English, coupled with insufficient emphasis on pronunciation and spelling skills, contribute to poor pronunciation competence among EFL Arab students. One reason behind the difficulties faced by EFL Arab students concerning English spelling and pronunciation is attributed to L1 interference[24]; "as Arab students will transfer the relationship of orthography and pronunciation of Arabic to that of English"[10]. In a contrastive study about the orthography and pronunciation systems of English and Arabic, Dhayef and Al-Aassam[10] highlighted the challenges encountered by EFL Arabic-speaking learners when pronouncing English words. The authors attributed the mispronunciation of English words by EFL Arab learners to the correspondence between sound and letter in Arabic that propels learners to copy this L1 habit in their processing of L2 lexical units and, as a result, "provide a spelling pronunciation of the English words".

EFL Arabic-speaking learners may fail to identify phonemic elements in English words because Arabic is phonetically consistent, while English has silent sounds and complex spelling patterns that make the transition from Arabic to English spelling confusing. As a result, this compromises their pronunciation of English words, and they end up omitting or misrepresenting certain morphological and phonemic elements in their written or spoken output, respectively. Khalifa[25] conducted a contrastive study "of English and Arabic sound systems and stress" to identify and analyse the diverse types of pronunciation errors by EFL Arabic speakers. The author maintained that contrastive analysis provides instructors with guidance on appropriate pedagogic strategies and teaching materials to use in addressing curriculum-related shortcomings. Furthermore, the discrepancy between English spelling and pronunciation is one of the factors that confuses Arabic-speaking learners of English when pronouncing English words[26].

According to Rehman et al.[27], "sound–spelling connections are a challenge for Arabic speakers because of the opaque orthography of English". Joshi and Aaron[28] hypothesized that the correspondence between orthography and phonology is a factor that influences literacy skills acquisition. Jahara and Abdelrady[29] clarified that EFL Arab learners lacked pronunciation competence as "they gave importance to spelling rather than sound". The researchers highlighted the role of intelligible pronunciation for optimal L2 listening and speaking and the key role of training EFL learners in phonetic and phonological articulation. Although pronunciation challenges facing EFL learners emerge because of the gaps or mismatch between English orthographic and phonological patterns[25], the correlation between EFL learners' spelling skills and pronunciation competence has not received adequate attention in academic research[10].

Since English pronunciation and spelling are intertwined in one way or another, the question remains whether

EFL/ESL instructors should teach pronunciation and spelling individually or concurrently. EFL instructors have a general tendency to prioritize grammar[22] over pronunciation and spelling, both of which tend to receive little attention from pedagogues, particularly during advanced phases of language acquisition (the tertiary level). Ibrahim[30] remarked that the deficiencies in articulation and spelling are connected, and it is important to pay "more attention ... to an integrated approach in foreign-language teaching rather than to a compartmentalised approach which divides hours devoted to language teaching into grammar lessons, spelling or dictation hours, and pronunciation periods". Kay[31] investigated the impact of pronunciation errors on spelling and found that the two skills of pronunciation and spelling are closely related, whereby an improvement in learners' pronunciation leaves a positive impact on their spelling competence and vice versa. The author also concluded that drilling learners on pronouncing words correctly should occur before they are taught the correct spelling of these words.

2.3. The Role of Technology in Improving Pronunciation and Spelling

Technological resources offer vast potential to EFL learners who wish to improve their speaking proficiency. Whether via the affordances of multimedia technological resources, CALL tools or AI applications, EFL education can harness in diverse technological resources to improve learners' speaking skills[6]. Recently, Artificial Intelligence has begun to transform the landscape of second and foreign language education as AI language learning applications started to be introduced in language education[32]. AI-powered technological resources can play a vital role in foreign language education via multiple platforms like Chatbots, Intelligent Tutoring Systems (ITSs), and Automatic Speech Recognition (ASRs).

ITSs are interactive self-learning platforms that can be used by learners to enhance their foreign language education without the supervision of instructors[32]. These tools function like personalized instructors[5] capable of assessing learners' competence, detecting their errors, providing them with corrective feedback, and designing appropriate activities commensurate with learners' needs and levels. These features allow them to improve EFL learners' grammar, vocabulary, and pronunciation. ASR platforms are tools that process spoken input into written output. Such tools are effective in improving learners' pronunciation as they provide instant feedback and allow learners to practice the accurate pronunciation of words. They also help improve learners' spelling competence by prompting them to learn the correct spelling of words that they mispronounce. As a result, learners who use these platforms can also improve their vocabulary[32].

The use of ITs and ASR tools enhances EFL learners' recognition of regular and irregular morpho-phonemic features as patterns, whereas the excessive reliance on the technological features of autocorrection deactivates learners' ability to develop an organized and systematic knowledge of such features. Other advantages of technological resources and AI pronunciation training tools are psychologically oriented. For instance, such tools can reduce speaking anxiety levels associated normally with human-managed training, increase learners' motivation levels to engage in more training[5], and boost their self-confidence[6].

Despite the affordances of AI-powered systems in EFL education, they are still marginalized in language pedagogy and language enhancement practices. In some cases, AI applications are used to develop foreign language learners' grammar and vocabulary competence while neglecting the improvement of learners' pronunciation and spelling competence, and this can be motivated by several reasons, including their commercial nature and lack of popularity, as opposed to free-of-charge Intelligent Personal Assistants (IPAs) and chatbots[5]. The financial challenges associated with integrating AI tools into education exceed the cost of availability and accessibility, as they incur additional costs related to instructors' professional training. Although there are apps that are designed to help students become more aware of their spelling mistakes while improving their pronunciation skills such Duolingo, Spelling Shed and SpellQuiz which target students of all ages; however, these apps are not popular among EFL learners or instructors, and the opportunities they provide for synchronized educational activities in traditional educational environments are quite limited.

Qian and Farahan[15] reviewed the evolution of pronunciation teaching over the years and listed numerous approaches to pronunciation instruction including the direct reform method, the international phonetic alphabet method, the use of transcription, the audiolingual strategy, the use of

minimal pairs, computer-assisted pronunciation training and corpus-based pronunciation instruction. Reviewed studies showed lack of association between L2 learners' spelling competence and pronunciation skills. The current study is significant as it investigates an overlooked area in EFL/ESL instruction especially among Arabic-speaking EFL learners. The present study explores the implications of the argument that there is a direct relationship between misspelling and mispronunciation by EFL learners whereby an improvement in one skill leaves an impact on the other. As orthography influences the production of spoken output[33,34], phonetic transcription can be used as a strategy to bridge the gap between spelling and pronunciation.

The present study is set to highlight the importance of empowering EFL undergraduate learners to acquire English language skills for effective communication by investigating Omani EFL university students' perceptions about combining spelling practice with pronunciation drilling both as part of traditional instruction methods and the use of AI-powered applications. The study investigates a learning issue reflected in the students' performance in language and content courses. In addition to its pedagogic value, the study aligns with the national priorities of Oman Vision 2040 on quality education and capacity building which prioritize "National talents with dynamic capabilities and skills that are competitive locally and internationally", and "A high-quality educational system with societal partnership" as well as "A system that empowers human capabilities in the educational sector"[35].

The study is guided by the following research questions:

1. How do Arabic-speaking EFL learners perceive the correlation between English spelling and pronunciation?
2. What sources and aspects of difficulties do Arabic-speaking EFL learners experience in English spelling and pronunciation?
3. To what extent do Arabic-speaking EFL learners rely on technological resources to improve their speaking and spelling?
4. To what extent do EFL instructors' pedagogies support Arabic-speaking learners' pronunciation and spelling competence?

3. Methodology

3.1. Study Design

This study adopted an exploratory design, employing a qualitative method with limited statistical analysis to explore Omani EFL undergraduate students' perceived experiences in spelling and pronunciation of English words, with a particular focus on their perspectives on the correlation between the two systems and the impact of that on their competence and skills. This study aims to identify the perceived sources and dimensions of difficulty faced by learners as well as assess how pedagogical interventions and technological resources may facilitate linguistic competence development. In the present study, learners' perceptions are taken into consideration over linguistic production, considering their self-reported experiences rather than their performance-based assessments. To serve its objective, the study employed one instrument- a cross-sectional survey. The students' survey comprised forty items addressing students' perceived experiences in learning and using spelling and pronunciation in English in terms of aspects and sources of challenges, teachers' input and pedagogic strategies, and the use of technological resources.

3.2. Participants

A total of 147 EFL undergraduate students, (105 females, 42 males), at an Omani higher learning institution were selected randomly to participate in this study by responding to the survey instrument. The subjects (N = 147) were selected from among the researcher's students who were specialising in English language and literature, and their age ranged between 19 to 23. The subjects' demographic background is shown in **Table 1** below. Regarding linguistic background, most students were native Arabic speakers, besides some who spoke other local languages. In addition, 93 students, (63.2%) of the subjects, had 15–18 years of EFL learning, while 30 students, (20.4%), had between 19–20 years of experience, and 24 students, (16.3%), had experience of 21–23 years. In terms of language proficiency, 24 students, (16.3%), reported to be at the beginner level, compared to the majority, 102 students (69.4%), who were at the intermediate level, and 21 students, (14.4%), who were at an advanced level.

Table 1. Respondents' demographic characteristics.

Characteristic	Frequency	%
Gender		
Female	105	71.4
Male	42	28.6
Age		
19–21	42	28.6
21–23	105	71.4
Language use		
Arabic	105	71.4
Other	39	26.5
English	3	2
Degree		
Bachelor	147	100
Major		
English Language and Literature	147	100
Learning experience in EFL		
< 10	0	0
15–18	93	63.2
19–20	30	20.4
21–23	24	16.3
Proficiency		
Beginner	24	16.3
Intermediate	102	69.4
Advanced	21	14.3

3.3. Instruments and Analysis Procedures

As mentioned earlier, the present study investigated how EFL students manage English spelling and pronunciation. To achieve this objective, the study utilized a structured survey which was designed and distributed to a selected group of participants. In alignment with established research methodologies and practices [36–44], the use of a sample survey enables researchers to draw generalizations about a broader population based on data collected from a representative subset. The survey was designed to elicit the participants' perspectives on their experiences with learning and applying English spelling and pronunciation, the interrelationship between these two linguistic systems, and the pedagogical role of instructors in enhancing learning outcomes and competence development. Furthermore, the survey aimed to gather insights into students' perceived experiences with technological tools and online resources in supporting their acquisition of spelling and pronunciation skills. It is expected that a random selection of respondents, accompanied by an accurate data collection instrument, will enhance the consistency of the results. Further, the University's Research Department (URD) approved the researchers' request to collect data without requiring written consent from subjects.

Additionally, to ensure the reliability and validity of the instrument, the survey underwent a pilot phase and was reviewed by four expert researchers before being administered. Feedback from these reviewers was incorporated into the final version, which featured clear instructions and a focused structure. The participants were contacted for their consent before playing the role of sources of data. Following this, the researchers asked respondents to complete the surveys and return them. The participants in data collection were informed that their responses would remain confidential and received a clear explanation of the research topics and purpose. The subjects' responses were systematically grouped and analyzed to extract insights about each survey item. Descriptive statistical analysis was employed to report frequency and percentage distributions for each item in the survey. Specifically, the analysis focused on EFL learners' perceptions of their ability to manage English spelling and pronunciation, their challenges in these areas, and the extent to which instructional support and technological resources contribute to their learning and skill development.

4. Results and Discussion

The following section introduces the analysis and discussion of the findings concerning the questions raised in the study. The survey consisted of four parts. The first part focuses on the subjects' competence and skills in English spelling and pronunciation, the second part explores the correlation between the two linguistic systems and the impact of

that on the subjects' learning experiences, the third part examines the learning strategies and teachers' pedagogic choices in fostering learning, while the fourth part explores the various learning and teaching aspects and domains of the two systems. A four-fold analysis and discussion of the results is presented under four main themes, which include: perceived spelling and pronunciation competences, the relationship between spelling and pronunciation, learning strategies, and how instructors and classroom strategies contribute to developing spelling and pronunciation proficiency.

4.1. Perceived Spelling Competence

The data analysis, as shown in **Figure 1**, revealed that a majority of the students, 59.1%, agreed and 32.7% disagreed that they have confidence in their spelling skills. Results also showed that nearly 45% of the participants agreed, and 26.6% disagreed that they rarely make errors in spelling, compared to 28.6% of the respondents who recorded uncertainty. This finding is significant because the subjects recorded high disagreement in this item, which was obvious in comparison to the other items in this section. Such a result

indicates that the subjects' views implied their awareness of the lack of accuracy in spelling. This result conforms with the research that explored factors which impede learning English spelling[10,18]. Thus, more effective instructional intervention is needed to help students improve their spelling competence, overcome the inaccuracies, and develop a better linguistic repertoire. As **Figure 1** reveals, 61.2% of the respondents agreed and 12.2% disagreed that they can remember the spelling of the words they learned, while 28.6% expressed doubt. In the same vein, the analysis revealed that 71.4% of the respondents agreed, and 28.6% expressed uncertainty about the ability to recall the spelling of newly acquired words. This result implied the significance of enhancing the students' active vocabulary and exposing them to more effective teaching strategies that encourage deep learning of spelling skills. On the other hand, the study's findings showed that 59.2% of the respondents agreed and 12.2% disagreed that they can understand English spelling rules, while 28.6% remained uncertain. Results also showed that 75.5% of the respondents viewed spelling accuracy as essential to effective writing, while 22.4% expressed uncertainty.
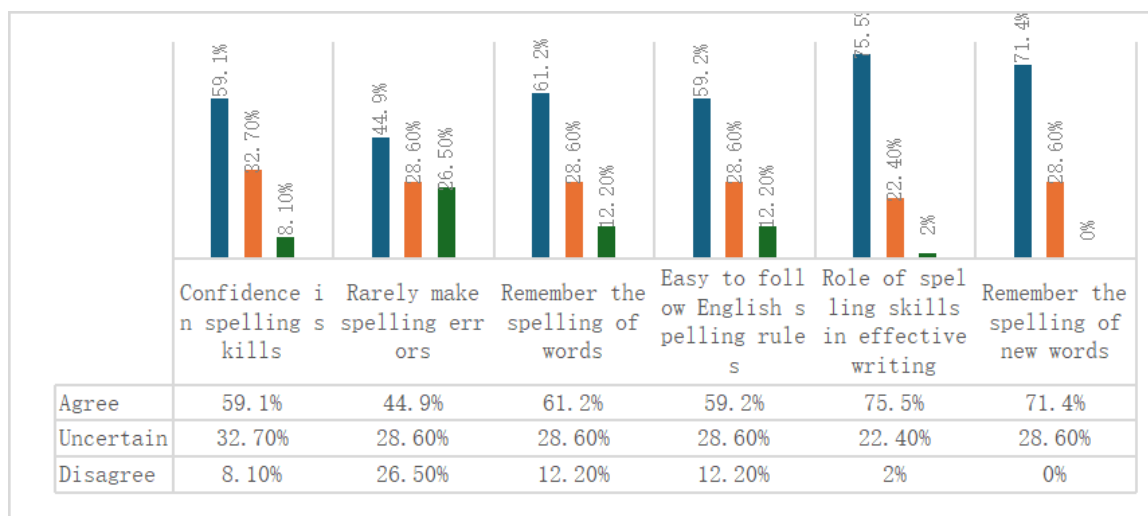

	Confidence in spelling skills	Rarely make spelling errors	Remember the spelling of words	Easy to follow English spelling rules	Role of spelling skills in effective writing	Remember the spelling of new words
Agree	59.1%	44.9%	61.2%	59.2%	75.5%	71.4%
Uncertain	32.70%	28.60%	28.60%	28.60%	22.40%	28.60%
Disagree	8.10%	26.50%	12.20%	12.20%	2%	0%

Figure 1. Students' Perceptions about Spelling Competence.

It is worth mentioning that the subjects expressed high agreement for the role of spelling skills in effective writing, followed by recalling the spelling of newly acquired words, remembering the spelling of words, understanding spelling rules, confidence in spelling rules, and rarely making spelling errors. Although most students expressed confidence in their spelling abilities, including recalling spellings, understand-

ing orthographic rules, and recognizing how spelling plays a significant role in effective writing, they appeared to be aware of their inconsistencies based on their varied perceptions of the frequency of errors. In other words, many students acknowledged the challenges of maintaining accurate spelling. These findings confirm the previous studies[4,25,27,29] which reported the challenges EFL Arabic-speaking learners faced

in spelling and pronunciation.

4.2. Perceived Pronunciation Competence

As **Figure 2** shows, most subjects, 78%, reported confidence in their pronunciation skills, while 20.4% expressed uncertainty. The analysis also revealed that almost 83.7% of the subjects agreed to have confidence in remembering the pronunciations of newly acquired words, while only 12.3% expressed uncertainty. Additionally, 70.6% of respondents reported ability to handle silent letters and 28.6% expressed uncertainty. The analysis also revealed that 53% of the respondents agreed while 36.7% disagreed that they rarely make pronunciation errors. Based on **Figures 1** and **2**, only fewer students expressed uncertainty in pronunciation than in spelling, and disagreement cases score minimally. As far

as the perceived competence in spelling and pronunciation is concerned, the respondents expressed greater confidence in their pronunciation than in spelling. The auditory learning and classroom interaction contribute to the stronger level of competence in pronunciation than in spelling. This observation aligns with the findings of Pennington[1], and Derwing and Munro[2]. Moreover, in contrast to visual spelling patterns, subjects seemed more confident handling silent letters and recalling sounds. The result suggests that students have more learning and practice spaces for speaking and pronunciation than for writing. In most EFL learning contexts, students' performance in the four skills varies according to factors related to learning and teaching. Thus, more focused teaching input that targets integrating the four skills is imperative.
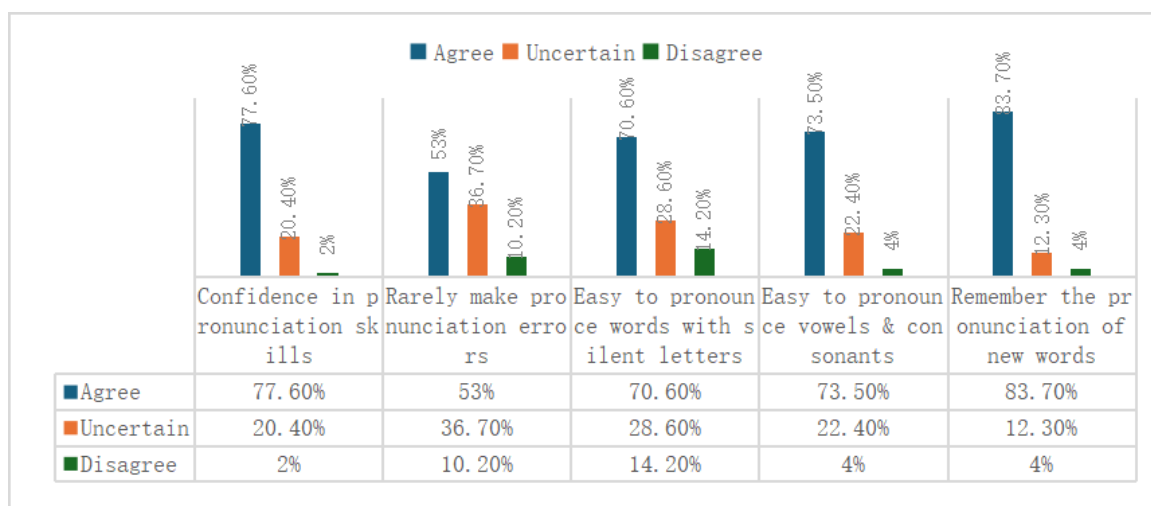

	Confidence in pronunciation skills	Rarely make pronunciation errors	Easy to pronounce words with silent letters	Easy to pronounce vowels & consonants	Remember the pronunciation of new words
■Agree	77. 60%	53%	70. 60%	73. 50%	83. 70%
■Uncertain	20. 40%	36. 70%	28. 60%	22. 40%	12. 30%
■Disagree	2%	10. 20%	14. 20%	4%	4%

Figure 2. Students' Perceptions About Pronunciation Competence.

4.3. Perceived Spelling-Pronunciation Correlation

To further examine learners' competence in the grapheme-phoneme correspondence, the students were asked to express their views on the interdependence of spelling and pronunciation. The subjects' perceived correlation between the linguistic systems is presented in **Figure 3** below. The analysis revealed that an overwhelming majority, 87.8% of the respondents, agreed that both spelling and pronunciation are essential to language use. The analysis also revealed that 85.7% of the respondents confirmed that spelling and pronunciation are closely related, indicating such a relationship

to language learning and competence development. In the same vein, 83.6% of the subjects agreed that it is essential to connect the spelling and pronunciation of newly learned words. Results also showed that 81.6% of the respondents agreed that correct pronunciation helps spelling, and 79.7% agreed that correct spelling helps correct pronunciation. In addition, 79.6% confirmed that learning spelling rules improves pronunciation. This finding implies that developing skills in one aspect benefits the other[33,34]. Furthermore, this result is crucial because it indicates that students have an awareness of the significance of addressing the discrepancy between orthography and the sounds of English.
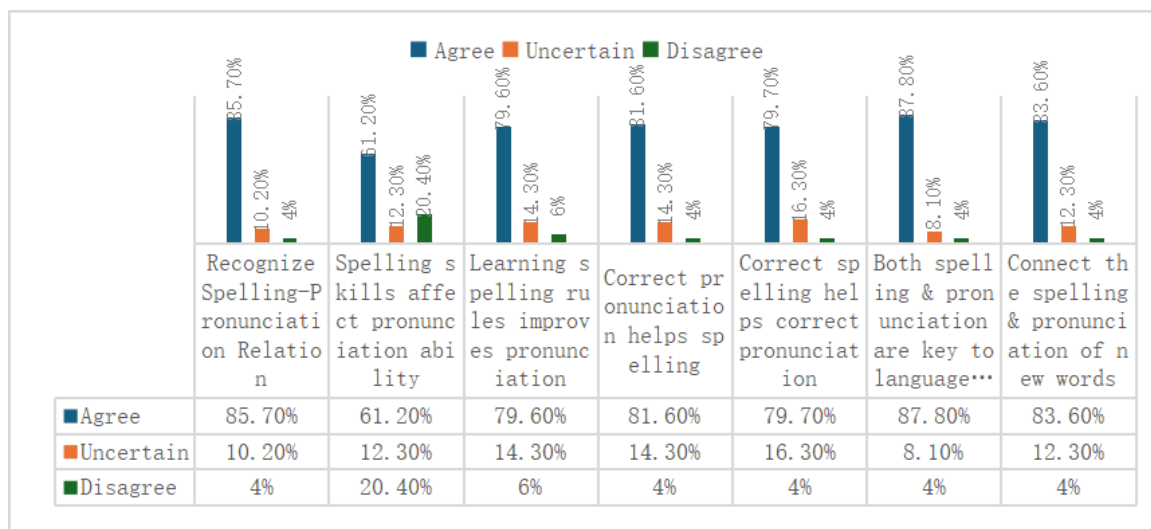
	Recognize Spelling-Pronunciation Relation	Spelling skills affect pronunciation ability	Learning spelling rules improves pronunciation	Correct pronunciation helps spelling	Correct spelling helps correct pronunciation	Both spelling & pronunciation are key to language…	Connect the spelling & pronunciation of new words
■ Agree	85.70%	61.20%	79.60%	81.60%	79.70%	87.80%	83.60%
■ Uncertain	10.20%	12.30%	14.30%	14.30%	16.30%	8.10%	12.30%
■ Disagree	4%	20.40%	6%	4%	4%	4%	4%

Figure 3. Students' Perceptions on Spelling-pronunciation Correlation.

It is worth mentioning that there was an interdependence between spelling and pronunciation among students, with each skill reinforced by the improvement of the other. In addition, a comparison between **Figure 1**, **Figure 2**, and **Figure 3** revealed that uncertainty was negligible, as it did not show statistical significance, and there was an extremely low disagreement level, except for the case of spelling skills that affect pronunciation (20.4%).

4.4. Perceived Instructors' Strategies

The perception of participants about instructors' teaching strategies in pronunciation and spelling instruction is presented in **Figure 4** below. The analysis revealed that 85.6% of the respondents agreed that instructors pronounced words clearly, underscoring the critical role of clear articulation in effective language teaching and learning. Similarly, 81.6% of respondents endorsed both the provision of guidance on sounds and the correction of spelling errors, reflecting a strong preference for practical and corrective instructional approaches. In contrast, while 71.4% acknowledged that instructors corrected pronunciation errors, a notable 20.4% expressed uncertainty regarding this strategy, suggesting a degree of discomfort or hesitation among learners toward immediate or direct corrective feedback. It is worth mentioning that the strategy with the lowest level of agreement (67.3%) was the explanation of the correlation between spelling and pronunciation, which also recorded the highest level of uncertainty (24.5%). This

finding may point to learners' difficulties in engaging with more abstract linguistic concepts compared to concrete, observable teaching practices.

Overall, the data suggest that learners tend to favour instructional strategies that are clear, corrective, and oriented over those that are theoretical. Specifically, the findings carry several pedagogical implications for the EFL teaching context, especially in pronunciation and spelling skills. The significant inclination of learners towards strategies like clear pronunciation and corrective feedback indicates that teachers need to focus on practical, observable techniques that directly enhance learners' communicative and interactional abilities. On the other hand, the lower agreement and greater uncertainty regarding the correction of pronunciation errors suggest that, while feedback is appreciated, it should be given in a way that is nurturing and attuned to the emotional needs of learners. Also, the little support for strategies that involve explaining how spelling relates to pronunciation shows that learners may have poor engagement with complex or abstract linguistic ideas.

Language instructors need to embrace more effective teaching practices and frame theoretical concepts through tangible examples and interactive approaches to improve comprehension and relevance. These observations can inform both language pedagogical practices and teacher training and professional development programs, stressing the necessity of aligning instructional methods with students' preferences and cognitive preparedness.

Moreover, the respondents were asked about their

views on different self-directed approaches to learning spelling and pronunciation. **Figure 5** below illustrates the respondents' perceived learning strategies employed in learning English spelling and pronunciation.

Figure 4. Students' Perceptions on Instructors' Strategies.
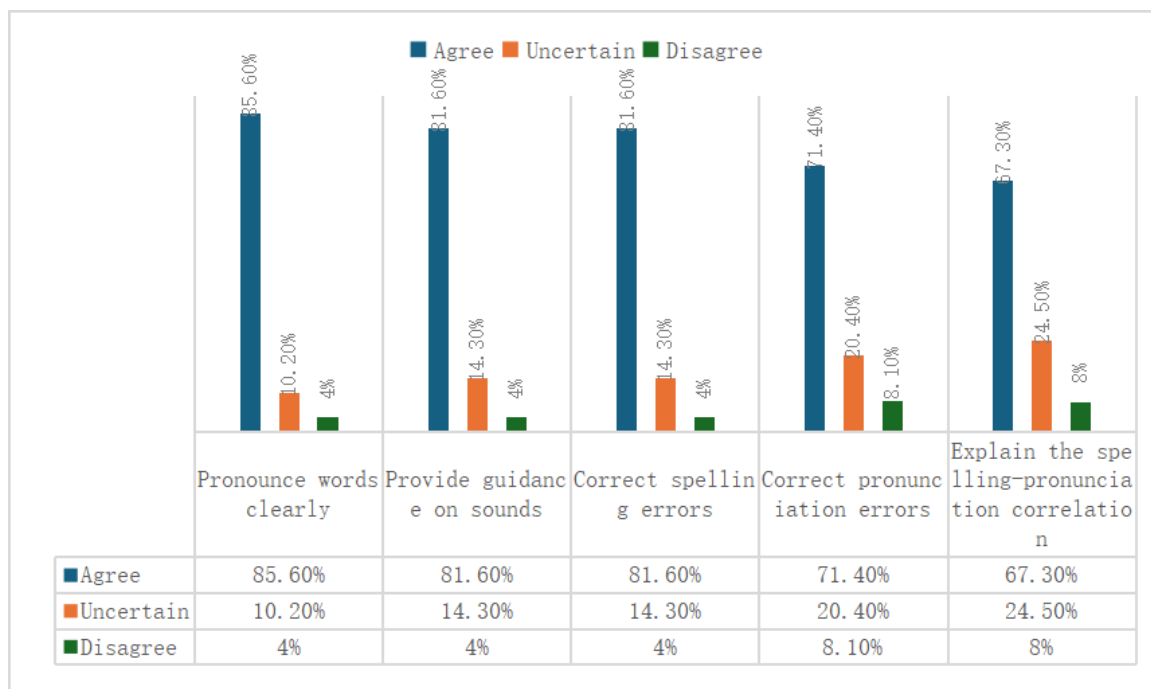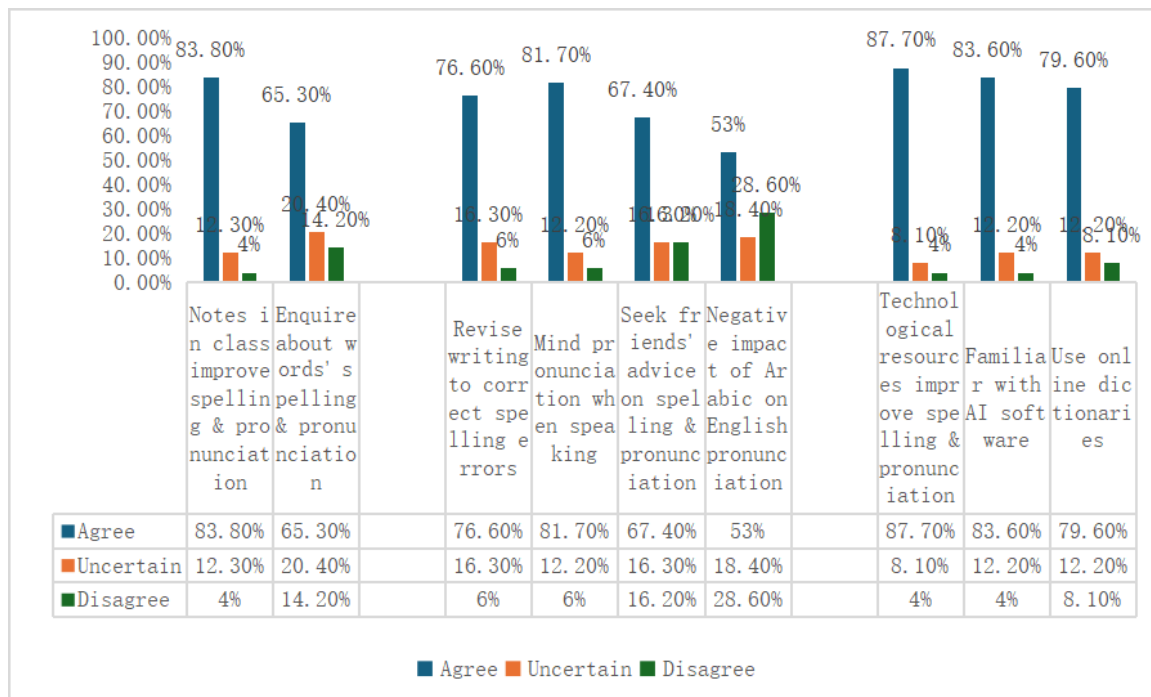
	Pronounce words clearly	Provide guidance on sounds	Correct spelling errors	Correct pronunciation errors	Explain the spelling-pronunciation correlation
■ Agree	85.60%	81.60%	81.60%	71.40%	67.30%
■ Uncertain	10.20%	14.30%	14.30%	20.40%	24.50%
■ Disagree	4%	4%	4%	8.10%	8%

Figure 5. Students' Perceptions on Learning Strategies.

	Notes in class improve spelling & pronunciation	Enquire about words' spelling & pronunciation		Revise writing to correct spelling errors	Mind pronunciation when speaking	Seek friends' advice on spelling & pronunciation	Negative impact of Arabic on English pronunciation		Technological resources improve spelling & pronunciation	Familiar with AI software	Use online dictionaries
■ Agree	83.80%	65.30%		76.60%	81.70%	67.40%	53%		87.70%	83.60%	79.60%
■ Uncertain	12.30%	20.40%		16.30%	12.20%	16.30%	18.40%		8.10%	12.20%	12.20%
■ Disagree	4%	14.20%		6%	6%	16.20%	28.60%		4%	4%	8.10%

4.5. Perceived Learning Strategies

As **Figure 5** above shows, the majority of the respondents, 87.7%, agreed, and only 4% disagreed that technological tools improve their spelling and pronunciation, demonstrating strong support for the use of digital resources. Similarly, there was a high level of agreement regarding note-taking in class, with 83.8% confirming its positive impact in improving their spelling and pronunciation. Results also revealed that 83.6% of the participants confirmed familiarity with AI software, while only 12.2% expressed uncertainty about this strategy. On the other hand, 81.7% of the respondents confirmed paying attention to pronunciation when speaking, while only 12.2% remained uncertain about the strategy. These results indicate that the students consider both traditional and contemporary strategies to be important for learning and improving spelling and pronunciation. Results also indicated that 79.6% of the respondents supported using online dictionaries, while 12.2% reported uncertainty about the strategy. This illustrates the importance of self-directed learning tools that are easy to access. Furthermore, 76.6% of the respondents regarded revising written work for spelling mistakes as important for language development, emphasizing the importance of reflective practices. The uncertain respondents scored 16.3%.

The analysis also revealed that 67.4% of the participants confirmed seeking peer support on spelling and pronunciation, compared to 16.3% and 16.2% who expressed uncertainty and disagreement, respectively. In addition, 65.3% of the respondents agreed with seek clarification on spelling and

pronunciation, while 20.4% were uncertain about their stand on the issue, and 14.2% expressed disagreement. It is interesting to note that by contrast, methods which involve interacting with peers, like getting advice from friends or seeking clarification on spelling and pronunciation, showed lower agreement and higher disagreement rates. This suggests that learners may depend less on peer support or have less confidence in it. Another interesting finding was about the influence of the participants' use of Arabic on learning and using English pronunciation. Results revealed that the statement about Arabic positively influencing English pronunciation met the least agreement (53%), while the statement about Arabic negatively affecting English pronunciation received the highest percentage of disagreement (28.6%), reflecting a divided view about how the first language influences pronunciation in the second language. There were 18.4% who expressed uncertainty about the issue. The results indicate that students prefer a variety of organized classroom activities and technology-driven methods, while their views about peer interactions and the influence of their native language vary across learners.

The subjects were also asked to identify the significance of various teaching and learning aspects related to pronunciation and spelling. **Table 2** below summarises the respondents' evaluation of several instructional and learning aspects, together with their domains in spelling and pronunciation. Each aspect is categorized by domain and rated on a 4-point Likert-type scale: 4 = Very important, 3 = Somewhat Important, 2 = Not too important, and 1 = Not important at all.

Table 2. Students' perceptions about the significance of different teaching and learning aspects.

Teaching/Learning Aspects	Domain	VI	SI	NTI	NIAA
Learning the spelling & pronunciation rules of new words	cognitive (learning)	126 (85.7%)	21 (14.3%)	0 (0%)	0 (0%)
Understanding other speakers' pronunciation	cogni-communicative (learning)	108 (73.5%)	33 (22.4%)	6 (4%)	0 (0%)
Instructors' correction of spelling & pronunciation errors	pedagogic (formative feedback)	84 (57.1%)	51 (34.7%)	3 (2%)	6 (4%)
Peers' correction of spelling & pronunciation errors	learner community (learners' collaborative approach)	78 (53%)	57 (38.8%)	12 (8.1%)	0 (0%)
Classroom activities on spelling-pronunciation correlation	pedagogic experiential	84 (57.1%)	54 (36.7%)	6 (4%)	3 (2%)
Tests on spelling & pronunciation	pedagogic (reinforced learning)	81 (55.1%)	57 (38.8%)	6 (4%)	3 (2%)
Marking spelling errors in written assessments	pedagogic (summative feedback)	87 (59.1%)	39 (26.5%)	15 (10.2%)	6 (4%)
Correcting pronunciation errors in oral assessments	Pedagogic (summative and formative feedback)	75 (51%)	57 (38.8%)	9 (6.1%)	6 (4%)

4 = Very important; 3 = Somewhat Important; 2 = Not too important; 1 = Not important at all.

4.6. Perceived Perceptions About the Significance of Different Teaching and Learning Aspects

As **Table 2** above shows, 85.7% of the respondents rated learning the spelling and pronunciation rules of newly acquired words and their "cognitive (learning)" domain as "very important", and the remaining 14.3% considered it "somewhat important". This result implies the significance of rule-based learning and students' preference for direct, cognitive teaching as effective for the development of language skills. Results also showed that 73.5% of the respondents rated understanding others' pronunciation as "very important," and 22.4% rated it as "somewhat important." Only 4% found it "not too important". The students' emphasis on this aspect and its "cogni-communicative (learning)" domain suggests the participants' recognition of the practical, receptive skills essential for effective comprehension and interaction in a diverse linguistic environment and settings. This observation supports the findings of Qian and Farahan[15]; Nguyen et al.[16]; and Deterding and Mohamad[17] on the necessity of effective instruction in spelling and pronunciation.

The analysis also focused on certain pedagogical strategies and feedback mechanisms, such as instructor feedback, peer correction, assessments, and classroom activities. Results revealed that 57.1% of the respondents rated instructors' correction of spelling and pronunciation errors (pedagogic formative feedback) as "very important," and 34.7% rated it as "somewhat important," while only 4% found it "not important at all". On the other hand, 53% found peer correction "very important", 38.8% "somewhat important", and 8.1% "not too important". When compared to instructor correction, peer correction is perceived as less effective than instructor correction. This implies that while some students expressed scepticism about its importance, the majority valued instructor feedback. Students perceive teachers as authoritative sources for correct information whose feedback is perceived as accurate, trustworthy, and essential for identifying and rectifying errors, thereby facilitating learning and skill development. However, the minority who find instructor correction unimportant could represent students who prefer self-correction, learn through trial and error, or find the feedback provided not sufficiently actionable or timely for their needs. This suggests that instructors should continue to provide clear, constructive, and timely feedback.

Results showed that 57.1% of the participants rated classroom activities integrating spelling and pronunciation (pedagogic experiential) as "very important," 36.7% "somewhat important," and only 4% and 2% found it "not too important" and "not important at all", respectively. This result is significant because it indicates a recognition of the efficacy of experiential learning for integrating different linguistic systems that enables students to connect theory to practice. On the other hand, 55.1% of the respondents rated tests on spelling and pronunciation (pedagogic reinforced learning) as "very important," and 38.8% rated them as "somewhat important," while only 4% rated them as "not too important". This observation indicates that students typically recognize the significance of assessments, likely because they help enhance learning and monitor progress. Nevertheless, their "very important" ranking is lower than that of other teaching elements, implying that tests are viewed as a useful tool rather than the main catalyst for learning. The domain "pedagogic (reinforced learning)" suggests that assessments contribute to solidifying previously acquired knowledge. Students perceive tests as an essential aspect of the educational process for self-evaluation, pinpointing areas that need improvement, and consolidating their understanding. The slightly reduced "very important" ranking compared to direct learning or even feedback from instructors indicates that tests are seen as a means to achieve reinforcement rather than the central driver of the learning experience itself.

Results also revealed that marking spelling errors in written assessments (pedagogic summative feedback) domain was rated as "very important" by 59.1% of the respondents, "somewhat important" by 26.5%, "not too important" by 10.2%, and "not important at all" by only 4%. Although the majority of students valued the marking of spelling errors, a notable minority did not share this view. This divergence suggests that while formal correction is considered essential by many students, its perceived utility may not be consistently acknowledged. The simultaneous presence of a high "very important" rating (59.1%) alongside the highest combined percentage of "not too important" and "not important at all" responses (14.2%) across all assessed aspects highlights a significant contradiction. For many students, the correction of errors in written assessments offers concrete, actionable, and often grade-related feedback. However, for a substantial minority, such feedback may be perceived as untimely; by

the time summative comments are provided, the opportunity for meaningful learning may be perceived as having passed. Results also showed that 51% of the respondents rated correcting pronunciation errors in oral assessments (pedagogic summative and formative feedback) domain as "very important", and 38.8% as "somewhat important". On the other hand, 6.1% found it "not too important," and 4% "not important at all". Although oral pronunciation correction serves formative and summative purposes, it is perceived as the least significant among all other aspects. This suggests potential challenges in the delivery or perceived effectiveness of this type of feedback. Pronunciation is a highly individualized aspect of language, and feedback in this domain can be perceived as more invasive, embarrassing, or subjective compared to corrections based on explicit spelling rules. Furthermore, students may find it particularly challenging to engage in self-correction of pronunciation without access to immediate auditory models or detailed articulatory guidance. In addition, students may struggle to translate spontaneous oral feedback into concrete improvement strategies, especially if not accompanied by clear instructional support or sustained practice opportunities. Unlike spelling errors, where corrective pathways are often more evident, pronunciation adjustments may lack intuitive solutions. As such, language educators need to adopt a strategic approach when addressing pronunciation in oral assessments. This might involve prioritizing high-impact phonological errors over minor inaccuracies, offering explicit articulatory guidance or phonetic training, and decoupling formative pronunciation exercises from summative evaluations to alleviate learner anxiety. Enhancing the clarity, relevance, and accessibility of pronunciation feedback may increase its perceived value and pedagogical effectiveness.

5. Conclusions, Recommendations, and Limitations

This study investigated EFL learners' perceived experiences in English spelling and pronunciation, the role of teaching practices, learning patterns, and technological tools in the improvement of linguistic knowledge and proficiency. Findings provide valuable pedagogical insights for planning effective instruction. The results of this study indicate that the students generally express confidence in spelling and understanding its rules, while demonstrating awareness of the complex nature of the English spelling system. Pronunciation is an area of relative strength, due to classroom interaction and the auditory exposure students receive in class, but spelling remains a strong point of confidence, although it is a bit more variable. This positive impact of auditory learning and interactive classroom environment is deemed necessary in improving the students' pronunciation proficiency and is better supported with multimodal and technological materials.

Moreover, the results demonstrate a clear hierarchy of importance when it comes to learning a language. Most students see foundational linguistic knowledge, pronunciation, and spelling skills as indispensable building blocks for effective communication. Thus, to help learners improve their English spelling and pronunciation proficiency, teachers need to introduce language skills and linguistic knowledge in a balanced manner. Another pedagogical benefit stems from the fact that there is a strong preference for explicit, rule-based instruction in both spelling and pronunciation, emphasizing the importance of carefully structured lessons that explain how sound-letter relationships work. This is crucial because spelling-pronunciation links are increasingly recognized as a powerful learning tool, facilitating the integration of these domains into teaching practices.

As far as the effects of instructional practices on developing students' understanding of the interplay of phoneme-grapheme are concerned, a key aspect of student progress is clear feedback and explanations from instructors, confirming that instructors' clarity and correction are essential to student learning. Although confidence in the spelling-pronunciation relationship is lower, it suggests further research is needed. Another pedagogical advantage suggested by this study indicates that students are supportive of using both conventional methods and technological approaches to enhance their English spelling and pronunciation. There is an increasing trust in AI and digital tools which could be further utilized in enhancing learners' spelling and pronunciation skills and in other educational settings. The study also revealed that learners' native language was not widely acknowledged as a factor influencing English learning, which indicates the need for more awareness or research in this regard. Furthermore, this study suggests that students' literacy development in English will be best supported by a balanced, multi-modal

pedagogy that blends explicit instruction, responsive feedback, integrated activities, and affect-sensitive assessment.

According to the findings, students prefer a pedagogical approach that integrates explicit rule instruction, authoritative feedback, interactive activities, and strategic assessment. There seems to be a significant preference for rule-based learning and trusting instructor feedback, but students remain open to collaborative learning, peer engagement, assessment-driven reinforcement, and diversified methods of reinforcing their spelling-pronunciation understanding. The use of peer-based strategies is underutilized, possibly because of issues of confidence or accessibility. The perceptions of students support the use of a balanced, multidimensional pedagogy that combines structure, interaction, feedback, and reflection to build spelling and pronunciation abilities. Creating an effective, student-centred educational experience requires understanding the perceptions of students. By doing so, teachers and curriculum developers can then align their practices with the needs and priorities of students, identify areas for improvement, and address perceived value gaps. Effective instruction must be coupled with pedagogical strategies that serve the students' interests and are actionable from the student's perspective to facilitate successful language learning. Achieving a more engaging and efficient learning environment can be accomplished by recognizing and strategically responding to student perceptions.

This study has certain limitations as it focused on spelling and pronunciation skills, while reading and writing competencies were not within its scope. The students' competence in spelling and pronunciation was examined from a perceptual perspective. Future research may use objective measures of spelling and pronunciation proficiency while focusing on both perceptions and production. The correlation between English spelling and pronunciation can further be explored within cross-disciplinary settings. Research can focus on EFL learners and students from other taught-in-English disciplines.

Author Contributions

Funding

Institutional Review Board Statement

The authors declare that the study followed the procedures outlined by Dhofar University for data collection by requesting an ethical review of a questionnaire. The authors received ethical approval from the University's Research Department (URD).

Informed Consent Statement

The participants, who were the researchers' students, were contacted to obtain their consent. Respondents were then asked to complete the survey and return it to the researchers. All participants who took part in the data collection task were given a clearer understanding of the research topics and objectives and were informed that their responses would remain confidential.

Data Availability Statement

Data used in this study will be shared upon request, addressed to the corresponding author.

Acknowledgments

Conflicts of Interest

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