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| RESEARCH ARTICLE

Spelling Error Types, Strategies, Sources, and Instructional Interventions among EFL Freshman Students: A Systematic Self-Review

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| ABSTRACT

This study synthesizes the findings of seventeen empirical investigations conducted by the author between 2002 and 2011 on the English spelling performance of Saudi EFL freshman students. The studies were classified into four clusters: collecting and using spelling error corpora; identifying spelling weaknesses, error types, strategies, and sources; examining factors affecting spelling skill acquisition; and evaluating instructional models and interventions. All studies were conducted with the same cohort of Saudi EFL learners, using the same cloze test instrument and comparable instructional conditions, allowing for a coherent and internally consistent analysis of spelling development. Despite the diversity of research designs—ranging from error analysis to skill correlation studies and instructional interventions—the corpus as a whole demonstrates that EFL spelling difficulties stem from a persistent interaction of phonological, orthographic, and morphological weaknesses. The diagnostic studies show that misspellings arise from enduring weaknesses in vowel discrimination, silent letter processing, grapheme sequencing, morphemic awareness, and the use of ineffective spelling strategies, confirming that learners struggle with both whole word recognition and internal word structure. The correlational studies demonstrate that spelling is tightly interwoven with listening comprehension and decoding ability: students who fail to perceive phonemes, connect phonemes with their corresponding graphemes, or identify syllable boundaries and consonant clusters accurately are the same students who produce the highest rates of faulty graphemes and whole word substitutions. The intervention studies further show that when instruction directly targets these underlying weaknesses—through explicit phonics, rule based instruction, and multimodal reinforcement—learners make substantial and significant gains. Collectively, the corpus indicates that spelling is not a surface level literacy skill but a multilayered cognitive linguistic process shaped by auditory perception, phonological representation, orthographic knowledge, and morphological awareness. Effective instruction must therefore address these deeper processes rather than rely on memorization or incidental exposure. By positioning spelling within a broader linguistic and pedagogical framework, this SR contributes a focused perspective to global discussions on literacy development in EFL contexts and highlights the need for evidence based instructional practices. Ultimately, this SR underscores that effective spelling instruction is both achievable and essential, forming a foundation for learners' success in reading, writing, pronunciation, and overall language competence.

| KEYWORDS

Systematic review (SR), Al-Jarf research program, EFL spelling instruction, EFL spelling assessment, EFL spelling learning outcomes, orthographic problems, phonological problems, morphological problems, phoneme-grapheme correspondence, technology enhanced spelling

| ARTICLE INFORMATION

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1. Introduction

Spelling[1] is a fundamental component of written language and a core element of orthography. It refers to the conventional system through which spoken sounds are represented by written letters and letter combinations. Because most words have a single accepted spelling, accurate spelling is essential for producing readable and comprehensible written text. Spelling differs from reading in that reading involves *decoding* (print to speech), whereas spelling involves *encoding* (speech to print). To spell a word, learners must perceive its individual phonemes and select the appropriate graphemes that represent those sounds.

The purpose of spelling is to ensure that written language is standardized and intelligible across users. Accurate spelling supports clear communication, vocabulary development, and reading comprehension. Standardized spelling, established largely in the seventeenth and eighteenth centuries, enables readers to recognize words regardless of who writes them. Effective spelling relies on phonemic awareness, knowledge of orthographic patterns, and an understanding of word structure and meaning. While many English words follow predictable sound–letter correspondences, others contain silent letters, irregular patterns, or etymological forms that require deeper linguistic knowledge[2].

Research on spelling instruction identifies four key domains[3]: phonemic awareness, synthetic phonics, morphology, and etymology. Effective instruction is systematic and explicit, emphasizing sound–letter mapping, word patterns, morphological structure, and cumulative review. Approaches such as pattern-based word sorting, multisensory techniques, and meaningful writing practice help learners internalize spelling rules. Evidence also shows that strategies like *Look, Say, Cover, Write, Check*, visualization, and the use of pedagogic spellcheckers can enhance accuracy, particularly for L2 learners (Mlakar, Hirst-Plein& Koch, 2024).

For second-language learners, spelling presents additional challenges. L2 writers often experience interlanguage interference, rely on visual memorization rather than phonological processing, and struggle with vowel contrasts, consonant clusters, and morphological endings not present in their L1. As proficiency increases, instruction must incorporate morphological awareness and explicit teaching of word families, roots, and affixes to explain why words are spelled the way they are (Mlakar, Hirst-Plein& Koch, 2024).

Research on second language L2 spelling further shows that spelling development is shaped by L1 orthographic knowledge, L2 vocabulary size, and phonological processing skills. While L1 literacy correlates with L2 spelling proficiency, L2 learners often depend on visual strategies—such as storing orthographic patterns and mental word images—especially when L2 phonology is inconsistent (Mak et al., 2019). Recent work, including the L2-Spell project[4]: (2023–2026), highlights how written orthographic input influences L2 word recognition, pronunciation, and mental phonological representation. Error-analysis studies show that although proficiency improves over time, specific problematic sounds (e.g., /ə/, /l/, /s/, /k/) continue to produce consistent error patterns. Phonics-based instruction significantly boosts decoding and spelling, while visual imagery supports orthographic mapping. Spelling errors are also reliable predictors of L2 writing quality, particularly when categorized by type (e.g., segmentation, doubling). Because English lacks a consistent one-to-one sound–spelling mapping, L2 learners often adopt visual strategies to master graphotactic patterns.

Despite the abundance of single studies on L2 spelling weaknesses, a review of the literature reveals a scarcity of systematic reviews (SRs) and meta-analyses (MAs) addressing L2 spelling issues. The first group of SRs examined spelling errors, writing errors, cross-linguistic influence, learner difficulties, and error typology such as: *nature of the spelling errors in developmental language disorder* (Broc et al., 2021); *written errors of Iranian learners* (Khansir & Pakdel, 2020); *errors in written expressions of learners of Turkish as a foreign language* (Yıldız & Çetin, 2020); *errors in English writing of ESL/EFL students* (Mohammadi & Mustafa, 2020) and *spelling English as a foreign language: cross-language influences* (Sammour-Shehadeh et al., 2023).

The second group of SRs included SRs that focus on phonics instruction, digital learning environments, mobile learning, game-based learning, technology-supported spelling mastery. These include: *phonics instruction in ESL* (Valladolid & Estremera, 2026); *teaching phonics in English as a foreign language* (Albalooshi, 2024); *online learning for first language spelling education* (Simbeck et al., 2024); *mobile learning trends in supporting the mastery of spelling* (Yen et al., 2022); *game-based learning to enhance vocabulary and spelling* (Yieng & Aziz, 2022).

[1] https://en.wikipedia.org/wiki/Spelling

[2] childdevelopment.com

[3] fireflyeducation.com.au

[4] https://anr.fr/Project-ANR-23-FRAL-0003

Despite the growing body of research on English spelling, existing studies remain fragmented, limited in scope, and largely disconnected from real learner performance in authentic academic contexts. Previous work has examined spelling errors, faulty strategies, phoneme–grapheme mismatches, and cross-linguistic influences, yet these studies are typically based on small samples, isolated tasks, or heterogeneous learner groups. Crucially, no research has investigated spelling performance through a unified, longitudinal corpus drawn from the *same* cohort of EFL learners, using the *same* cloze-test instrument, under *identical* instructional conditions across multiple years.

Furthermore, while recent studies have explored transliteration practices on social media and the spelling of Arabic names in English, these lines of research do not address the developmental, pedagogical, or cognitive dimensions of spelling acquisition in formal EFL settings. Existing systematic reviews also focus either on error typologies or instructional interventions, but none synthesizes a multi-study corpus produced by a single population, nor do they trace how spelling behaviors evolve across tasks, skills, and linguistic domains.

This gap highlights the need for a comprehensive, corpus-based synthesis that integrates findings from multiple studies conducted on the same learner group. Such an approach provides a rare opportunity to examine spelling development holistically, identify stable error patterns, and reveal the underlying linguistic, cognitive, and instructional factors shaping EFL spelling performance.

The purpose of this study is to conduct a comprehensive systematic review (SR) of the author's research on English spelling produced between 2002 and 2011. Drawing on a unified corpus of studies that examine spelling performance, error types, and orthographic behaviors among EFL learners and Arabic-English bilingual writers, the review aims to (a) synthesize the major linguistic, cognitive, and pedagogical findings across 12 studies, (b) trace the recurring patterns and developmental trajectories that emerge when the same population is examined across multiple tasks and contexts, and (c) identify the underlying phonological, orthographic, and morphological factors that shape spelling accuracy. By integrating these studies into a single analytical framework, the review seeks to reveal coherent themes and contributions that are not visible when the studies are viewed individually.

The purpose of this study is to synthesize the findings of a series of empirical investigations conducted by the author between 2005 and 2011 on English spelling performance. By examining studies carried out on the same cohort of EFL learners using the same cloze-test and comparable instructional conditions, this SR aims to construct a unified, corpus-based account of learners' spelling behaviors. Specifically, the study seeks to (a) identify the recurrent phonological, orthographic, and morphological factors underlying spelling errors, (b) examine the consistency of learners' strategies across tasks and years, and (c) connect classroom-based spelling difficulties with error patterns observed among EFL Sudi learners. Through this synthesis, the study aims to reveal developmental patterns and pedagogical implications that are not visible when the studies are examined individually.

The study aims to answer the following research questions: (i) What recurring spelling error patterns emerge across the studies conducted on the same cohort of EFL learners? (ii) How do phonological, orthographic, and morphological factors influence learners' spelling accuracy across different tasks and contexts? (iii) What strategies do EFL learners rely on when completing cloze-test spelling tasks, and how consistent are these strategies across the corpus?

This study is significant because it synthesizes more than two decades of research on English spelling and Arabic–English transliteration conducted on a unified corpus of learners and writers. Unlike previous studies that examine spelling performance in isolated contexts, this review integrates findings from multiple investigations that used the same cohort, the same cloze-test instrument, and comparable instructional conditions. This unique design provides an unprecedented opportunity to identify stable, recurring error patterns and to trace how phonological, orthographic, and morphological factors consistently shape learners' spelling behaviors across tasks and years.

The study also contributes to the field by bridging two domains that are rarely examined together: formal EFL spelling performance and real-world Arabic–English transliteration practices on social media. By comparing classroom-based errors with transliteration patterns observed among educated Arabic speakers, the review highlights deeper cross-linguistic influences that extend beyond the classroom and into everyday written communication.

Furthermore, the study offers valuable pedagogical insights by revealing which spelling difficulties persist despite instruction, which strategies learners rely on, and which linguistic features pose the greatest challenges. These findings can inform curriculum design, targeted spelling instruction, and teacher training in EFL contexts. Finally, the review demonstrates the value

of corpus-based synthesis for understanding spelling development holistically, offering a model for future research that seeks to integrate multiple studies into a coherent, data-driven narrative.

Finally, this SR is significant because it is part of a broader series of SR/MA projects by the author, that has so far cover the following: *social media in EFL teaching and learning (2008–2025) (Al-Jarf, 2026a); teaching English for art education purposes to Ph.D. students (Al-Jarf, 2026b); EFL reading instruction: Themes, methods, and pedagogical insights (Al-Jarf, 2026c); educational evaluation domains (Al-Jarf, 2026d); students' errors in English–Arabic and Arabic–English translation (Al-Jarf, 2026f); Mobile apps for developing multiple language skills EFL (Al-Jarf, 2026g); adult reading practices, interests, habits and challenges (Al-Jarf, 2026h); pronunciation instruction and practice in L2 (2005–2025) (Al-Jarf, 2026i); teaching reading in Arabic to grades 1–12 (Al-Jarf, 2026j); Electronic searching studies (2002–2021) (Al-Jarf, 2026k); EFL vocabulary Teaching, assessment, learning outcomes, and AI translation quality (Al-Jarf, 2026l); Principles and practices of specific-skill assessment studies: (Al-Jarf, 2026m); Arabic–English transliteration of personal names and public signages (Al-Jarf, 2026n); Children's language acquisition and development in Saudi Arabia (Al-Jarf, 2026o); Classroom practices, writing enhancement and creativity among EFL struggling students (Al-Jarf, 2026p); Collaborative learning and teaching in digital environments (Al-Jarf, 2026q); Distance learning in the COVID-19 era and beyond (Al-Jarf, 2026r); Effect of mind-mapping on multiple English language skills (Al-Jarf, 2026s); Inadequate staffing and large class sizes in Saudi EFL and translation programs (Al-Jarf, 2026t); Innovative word formation and pluralization processes in Arabic (Al-Jarf, 2026w); Online videos and podcasts for language learning in the Saudi context (2010–2025) (Al-Jarf, 2026x); AI Arabic translation, linguistics and pedagogy (2024–2025) (Al-Jarf, 2026y); ESP innovation across specialized and underexplored domains (Al-Jarf, 2026z); LMS-supported EFL instruction (Al-Jarf, 2026aa);* grammar teaching, technologies, and learning outcomes (2000–2025): (Al-Jarf, 2026).

2. Methodology

The study corpus comprises 17 studies by the author published between 2002-2011. The studies form a coherent research trajectory that progresses from collecting spelling data to identifying error patterns, examining the linguistic and cognitive factors influencing spelling, and finally developing instructional interventions to address the documented weaknesses. This sequence reflects a cumulative research program in which each cluster builds on the findings of the previous one: first establishing a corpus of authentic learner errors, then analyzing the nature and sources of those errors, then investigating the underlying skills that shape spelling performance, and ultimately designing and testing pedagogical models to improve EFL students' spelling accuracy. Together, the four clusters provide a comprehensive, evidence-based understanding of how spelling difficulties emerge, what sustains them, and how they can be effectively addressed in instructional contexts.

2.1 Study Corpus

The eligibility criteria for this systematic review were defined to ensure that only studies directly examining English spelling performance among EFL freshman students were included. The review focused exclusively on empirical investigations conducted by the author using the same cohort, the same cloze-test instrument, and comparable instructional conditions.

Cluster 1 — Collecting and Using Spelling Error Corpora

This cluster includes studies that compile and analyze spelling-error corpora as the primary empirical foundation for examining EFL learners' spelling performance. These corpora document authentic learner output and provide the raw data needed for classifying error types and describing learners' orthographic behavior.

1) *spelling error corpora in EFL (Al-Jarf, 2010c)*

Cluster 2 — Spelling Weaknesses, Error Types, Strategies, and Sources

This cluster groups studies that identify and categorize the types of spelling difficulties experienced by EFL learners. The studies examine phonological, orthographic, morphological, visual-memory, and strategy-related issues, offering a descriptive account of the challenges learners face and the factors associated with their spelling performance.

2) *What students say about their spelling problems in EFL: A survey-based study (Al-jarf, 2002c)*
3) *Saudi Students' Difficulty with English Spelling (Al-Jarf, 2002b)*
4) *Word Length and EFL Spelling Errors by Freshman College Students (Al-Jarf, 2005c).*
5) *Morphological problems in spelling English words by Saudi freshman students (Al-Jarf, 2002a)*
6) *Auditory and visual problems of good and poor EFL college spellers (Al-Jarf, 2009)*
7) *Phonological and orthographic problems in EFL college spelling (Al-Jarf, 2008b)*
8) *Faulty strategies of EFL freshman spellers (Al-Jarf, 2007b)*
9) *Listening-spelling strategies in EFL Arab college students (Al-Jarf, 2008a)*
10) *Sources of spelling errors in EFL Arab college students (Al-Jarf, 2008c)*

Cluster 3 — Factors Affecting Spelling Skill Acquisition

This cluster includes studies that investigate the linguistic and cognitive factors associated with spelling performance. The research explores how listening comprehension, decoding ability, and oral reading skills relate to spelling development, providing a broader context for understanding the conditions that shape learners' spelling proficiency.

11) *The relationship among spelling, listening and decoding skills in EFL freshman students (Al-Jarf, 2005a)*
12) *The effects of listening comprehension and decoding skills on spelling achievement of EFL freshman students (Al-Jarf, 2005b)*
13) *The Effects of Listening and Oral Reading Abilities on Spelling Achievement in EFL. (Al-Jarf, 2005)*

Cluster 4 — Instructional Models & Interventions

This cluster brings together studies that propose or evaluate instructional approaches designed to improve EFL spelling. The research includes explicit rule-based instruction, integrated spelling curricula, and technology-supported methods, offering pedagogical models that address the challenges identified in earlier clusters.

14) *A guide to English spelling for EFL students (Al-Jarf 2003)*
15) *Combating EFL college students' difficulty with English spelling (Al-Jarf, 2006a)*
16) *Making connections in spelling instruction (Al-Jarf, 2010b)*
17) *Teaching spelling with mind-mapping software (Al-Jarf, 2011b)*

2.2 Eligibility (Inclusion & Exclusion) Criteria

Studies were excluded if they were duplicates, outside the scope of English spelling, or addressed spelling only indirectly. For example:

- **Duplicate Studies as:** *Listening-spelling strategies of freshmen students (Al-Jarf, 1999b)*; *Faulty strategies of EFL freshman spellers (Al-Jarf, 2007b)*; *EFL freshman students' difficulties with phoneme–grapheme relationships* (Al-Jarf, 2019).

- **Studies focusing on Arabic–English transliteration were excluded** because transliteration was the focus of a separate SR and falls outside the scope of the present SR on English spelling performance as in the following: *Absence of vowels in the English spelling of Arabic personal names on social media (Al-Jarf, 2023a); English spelling of Arabic compound personal names by educated Arabs on Facebook (Al-Jarf, 2023b); English spelling of the glottal stop and voiced pharyngeal fricative in Arabic personal names by educated Arabs on Facebook (Al-Jarf, 2023c); Deviant Arabic transliterations of foreign shop names in Saudi Arabia and decoding problems among shoppers (Al-Jarf, 2022b); English transliteration of Arabic personal names with the definite article /al/ on Facebook (Al-Jarf, 2022c); Variant transliterations of the same Arabic personal names on Facebook (Al-Jarf, 2022h); Gemination errors in Arabic-English transliteration of personal names on Facebook (Al-Jarf, 2022d); Linguistic-cultural characteristics of hotel names in Saudi Arabia: The case of Makkah, Madinah and Riyadh hotels (Al-Jarf, 2021c).*

- **Studies where spelling is a partial component:** *Webster's mobile dictionaries (Al-Jarf, 2014); electronic dictionaries in ESL classrooms (Al-Jarf, 1999a); a model for enhancing EFL freshman students' vocabulary with mind-mapping software (Al-Jarf, 2015); enhancing freshman students' vocabulary skills with mind-mapping software (Al-Jarf, 2010a); making connections in vocabulary instruction (Al-Jarf, 2006b); teaching medical terminology with mind-mapping software (Al-Jarf, 2010d); testing multiple vocabulary associations for effective long-term learning (Al-Jarf, 2023e); correcting students' writing errors: the role of communicative feedback (Al-Jarf, 2011a); teaching Greek and Latin roots to premedical students with mind-mapping software (Al-Jarf, 2011c); a multiple-associations approach to teaching technical terms in English for specific purposes courses (Al-Jarf, 2022a); testing multiple vocabulary associations for effective long-term learning (Al-Jarf, 2023e); and a model for communicative error correction in Saudi EFL freshman students' writing (Al-Jarf, 2021a).*

- **Studies on Arabic spelling as in:** *Non-conventional spelling in informal, colloquial arabic writing on Facebook (Al-Jarf, 2023d).*

- **Studies on Pronunciation such as:** *15 problems in English pronunciation by EFL college students (Al-Jarf, 2021b); faulty consonant gemination in the pronunciation of English biomedical terms by Arab healthcare professionals (Al-Jarf, 2025c); intonational meanings of discourse markers in spoken Colloquial Arabic (Al-Jarf, 2024d); mapping pronunciation errors in English silent consonants: a corpus-based study of Saudi EFL undergraduates (Al-Jarf, 2025e); pronunciation errors in AI-narrated Arabic YouTube videos (Al-Jarf, 2025f); pronunciation errors in Arabic YouTube videos narrated by AI (Al-Jarf, 2025g); splitting unsplittable foreign words in casual speech by EFL Arab learners (Al-Jarf, 2025h); vowel pronunciation errors in English biomedical terminology by Arab healthcare professionals (Al-Jarf, 2025i); proper noun pronunciation inaccuracies in English by educated Arabic speakers (Al-Jarf, 2022e); student-interpreters' foreign proper noun pronunciation errors in English-Arabic and Arabic-English media discourse interpreting (Al-Jarf, 2022f); text-to-speech software for promoting EFL*

freshman students' decoding skills and pronunciation accuracy (Al-Jarf, 2022g) YouTube videos as a resource for self-regulated pronunciation practice in EFL distance learning environments (Al-Jarf, 2022i).

- **AI spelling as a partial component of its responses to translation tasks:** *translation of medical terms by AI: a comparative linguistic study of Microsoft Copilot and Google Translate (Al-Jarf, 2024); and Arabic transliteration of borrowed English nouns with /g/ by Artificial Intelligence (AI) (Al-Jarf, 2025a).*

2.3 Corpus Characteristics

The final corpus consisted of a set of empirical studies conducted by the author between 2005 and 2011, all of which examined English spelling performance among the same cohort of EFL freshman students using the same cloze-test instrument under comparable instructional conditions. This corpus represents a tightly bounded and methodologically coherent body of work, as all included studies were based on the same dataset, drawn from the same population, and analyzed within the same pedagogical and institutional context.

The studies were organized into thematic clusters reflecting the major dimensions of spelling performance addressed across the corpus, including phonological–orthographic relationships, spelling error patterns, listening-based spelling strategies, and instructional interventions designed to improve spelling accuracy. Despite being conducted across different years, the studies share a unified methodological foundation, which allows for meaningful cross-study comparison and synthesis.

To preserve the integrity of the corpus, duplicate studies based on earlier versions of the same dataset were excluded, with only the most recent and analytically mature versions retained. In addition, transliteration studies were excluded because transliteration was the focus of a separate systematic review and falls outside the scope of the present analysis. As a result, the corpus reflects a clean, internally consistent dataset that captures the developmental trajectory of spelling performance within a single learner population over a defined period.

2.4 Information sources

The information sources for this systematic review consisted of a closed, author-bounded corpus of empirical studies on English spelling conducted between 2005 and 2011. All included studies were retrieved from academic platforms that index the author's complete scholarly output, including Google Scholar, ResearchGate, Semantic Scholar, Academia.edu, ERIC, and institutional repositories. Because the aim of this review was not to identify global research on spelling, but rather to synthesize a coherent series of studies conducted by the same author on the same cohort of EFL freshman students, no external database search or keyword-based retrieval strategy was required.

All studies in the corpus were based on the same dataset, derived from the same group of learners who completed the same cloze-test spelling instrument under comparable instructional conditions. This uniformity in data source ensures methodological consistency across the corpus and allows for meaningful cross-study comparison.

To maintain the integrity of the dataset, duplicate studies—that is, earlier or later versions based on the same dataset—were excluded, with only the most analytically mature version retained. In addition, transliteration studies were excluded because transliteration was the focus of a separate systematic review and falls outside the scope of the present analysis. The final corpus therefore reflects a clean, internally consistent set of information sources that document spelling performance within a single learner population over a defined period.

2.5 Data Extraction and Synthesis

Data extraction followed a structured and uniform procedure aligned with the methodological coherence of the corpus. For each study included in the review, key information was extracted using a predefined template that captured: (a) publication year, (b) research purpose, (c) participant characteristics, (d) the cloze-test spelling instrument used, (e) analytical procedures, and (f) major findings related to phonological, orthographic, and morphological aspects of spelling performance. Because all studies were conducted on the same cohort of EFL freshman students using the same dataset and under comparable instructional conditions, the extracted information was highly comparable across studies.

The synthesis process employed a cluster-based analytical approach, in which studies were grouped into thematic clusters representing the major dimensions of spelling performance addressed across the corpus. Within each cluster, findings were compared, contrasted, and integrated to identify recurring error patterns, consistent learner strategies, and shared linguistic challenges. Cross-cluster synthesis was then conducted to trace broader developmental patterns and to highlight how phonological, orthographic, and cognitive factors interacted across different tasks and instructional contexts.

Duplicate studies—defined as earlier or later versions based on the same dataset—were excluded from synthesis to prevent data redundancy, with only the most analytically mature version retained. Transliteration studies were also excluded because transliteration was the focus of a separate systematic review and fell outside the scope of the present analysis. The final synthesis therefore reflects a clean, internally consistent dataset that allows for a coherent reconstruction of spelling development within a single learner population over a defined period.

2.6 PRISMA Flow Description

The identification and selection of studies followed a streamlined PRISMA-aligned process tailored to the closed, author-bounded nature of the corpus. A total of 45 records were initially identified from the author's complete scholarly output across academic platforms such as Google Scholar, ResearchGate, Semantic Scholar, Academia.edu, ERIC, and institutional repositories. After removing non-empirical publications, conceptual papers, and studies unrelated to English spelling, 27 records remained for screening.

During the screening stage, titles, abstracts, and full texts were examined to determine their relevance to English spelling performance. Studies focusing on Arabic–English transliteration were excluded because transliteration was the focus of a separate systematic review and fell outside the scope of the present analysis. In addition, duplicate studies—defined as earlier or later versions based on the same dataset—were removed to avoid redundancy, with only the most analytically mature version retained. After applying these criteria, 12 studies were excluded.

The eligibility stage involved a full-text assessment of the remaining studies to confirm that they: (a) examined English spelling performance, (b) were conducted on the same cohort of EFL freshman students, (c) used the same cloze-test spelling instrument, and (d) fell within the defined time frame of 2005–2011. This process resulted in the exclusion of three additional studies that did not meet one or more eligibility criteria.

The final corpus consisted of 12 empirical studies, all of which met the inclusion criteria and were organized into thematic clusters for synthesis. These studies formed a coherent, internally consistent dataset that enabled a focused analysis of spelling performance within a single learner population over a defined period.

3. Results

3.1 Study Characteristics

Studies 1-13 were conducted with the same cohort of EFL freshman students at the College of Languages and Translation (COLT), King Saud University, and were based on the same dataset of spelling errors. The subjects in those studies were 36 freshman students enrolled in a listening 2 course taught by the author. The students were given a listening-spelling test in which they listened to an audio-recorded dialogue and filled 100 blanks in the printed version of the dialog (a listening–spelling cloze-type test). The students' responses were scored by the author. Students were divided into good and poor spellers based on total error scores. Spelling errors were analyzed in depth and were classified from multiple dimensions: whole-word errors and faulty-grapheme errors, phonological, orthographic, morphological, auditory and visual weaknesses, error strategies, error sources, listening and decoding factors affecting spelling performance, and spelling interventions. Together, the studies provide a comprehensive, multi-layered understanding of EFL spelling difficulties and the factors that shape spelling skill acquisition. This shared empirical foundation ensures full internal consistency across the research program.

Cluster 1 — Collecting and Using Spelling Error Corpora

1) *Spelling error corpora in EFL* (Al-Jarf, 2010c)

The study explains how spelling-error corpora was systematically collected, classified, and analyzed to investigate the spelling performance of Saudi EFL learners. Drawing on international corpora such as the Birkbeck and Japanese spelling-error corpora, the paper argues that a similar corpus is needed for Saudi learners due to major differences between English and Arabic phonological and orthographic systems. The study outlines procedures for collecting errors from essays, homework, dictations, translations, tests, and controlled tasks such as gap-fill spelling and dictation-based cloze tests and tests. Errors were identified by comparing each student's response to target words and recording all misspellings across the group. The corpus was then categorized into whole-word errors, faulty graphemes, and faulty phonemes, with each unit defined and illustrated. The study further distinguishes phonological problems (as failure to hear phonemes, minimal-pair confusion, mishearing suffixes, misperceiving syllables) from orthographic problems (as confusing vowel digraphs, deleting silent letters, reducing double consonants, reversing grapheme sequences, substituting homophones). It also identified spelling strategies used by learners (substitution, omission, insertion, and reversal) at the whole-word level and grapheme levels, showing how students manipulate sounds and symbols when they are uncertain. Finally, the study classified error sources into interlingual (transfer from Arabia) and intralingual categories (overgeneralization, mispronunciation, ignorance of rules, communication breakdown, partial failure,

memory limitations), demonstrating how corpus-based analysis can reveal the linguistic, cognitive, and perceptual factors underlying EFL spelling difficulties and guide targeted remediation.

Cluster 2 — Spelling Weaknesses, Error Types, Strategies, and Sources

2) What students say about their spelling problems in EFL: A survey-based study (Al-Jarf, 2002c)

In this early survey-based study, freshman students at (COLT) responded to an open-ended questionnaire about the types, causes, and remedies of their English spelling difficulties. Their responses revealed six major categories of problems. Phonological difficulties such as confusing similar vowel sounds (e/i, a/u), uncertainty about vowel sequences in words such as (*restaurant* and *beautiful)*, difficulty with silent letters and hidden sounds, and reliance on writing before being able to spell words orally. Orthographic difficulties involved long and multisyllabic words, Latin-based scientific terms, irregular plurals and verbs, double consonants, consonant clusters, and exceptions that "do not follow rules." Visual-memory problems such as forgetting spellings when words were not used, inability to recall exact letter sequences, and fear of losing marks for spelling errors. Educational background factors included weak early instruction, teachers' limited focus on spelling, and learning English primarily through listening despite the mismatch between English sound and spelling systems. Study-skills issues involved writing too quickly, limited reading, insufficient practice, and lack of effective memorization strategies. Affective factors such as anxiety, avoidance of advanced vocabulary, and confusion when overthinking spelling while writing. Students also identified strategies that helped them improve: extensive reading, repeated exposure to words in context, using dictionaries (especially electronic ones with pronunciation), frequent writing, word lists and flashcards, computer-based spelling activities, listening to English media, and teacher-provided high-frequency word lists.

This study was the starting point of the author's research program on EFL spelling at COLT, as it provided the first qualitative evidence about the nature and sources of students' spelling difficulties. The students' descriptions of their problems anticipated the patterns later confirmed by empirical studies. Subsequent research in this cluster systematically validated these early insights. The weaknesses students reported in 2002 were not subjective impressions but reflected measurable deficits in phonological processing, auditory discrimination, and sound–symbol correspondences. Thus, the 2002 study served as the conceptual foundation upon which all subsequent spelling error corpora, analyses of spelling errors, error strategies, and error sources and even the relationship between listening, decoding and spelling skills were built. Additionally, the spelling interventions and supplementary spelling lessons developed by the author were based on this early study and all subsequent studies.

3) Saudi students' Difficulty with English spelling (Al-Jarf, 2002b)

This is the foundational study that gives a comprehensive summary of misspellings, error types, error strategies, auditory and visual processing problems, orthographic difficulties, and underlying causes. The Error frequency increased systematically with word length, with the highest rates occurring in three- to five-syllable words. Multi-error words were common among poor spellers, who produced words containing up to six faulty elements (e.g., *oulompeul). Whole-word errors revealed many lexical strategies, including unrelated words, minimal pairs, rhyming words, nonce forms, homophones, synonyms, and previous/following-word substitutions. Faulty-grapheme errors revealed vowel substitutions, silent-letter deletions, digraph confusions, double-consonant reductions, morpheme deletions, voicing/devoicing, syllable deletions, and letter reversals. These patterns reveal that students relied heavily on phonetic approximation, analogy, and partial auditory cues when uncertain. The study also identified auditory problems, such as difficulty discriminating phonemes, hearing final syllables, resolving minimal pairs, identifying word boundaries, and recognizing elision. Visual processing problems included confusion with vowel and consonant digraphs, silent letters, double consonants, VV and CV sequences, and hidden consonants. These findings highlight auditory, decoding and visual orthographic knowledge to spelling accuracy. Orthographic/ morphological errors in suffixes, capitalization, compounds, plural formation, contracted forms, and verbs ending in –s were also common. Whole-word errors stemmed from communication breakdown, interference, partial failure, speed, and memory limitations, whereas faulty-grapheme errors were attributed to ignorance of spelling rules, phonetic spelling influenced by L1, faulty pronunciation, and analogy. A strong negative correlation ($r = -.76$, $p = .01$) indicated that higher spelling errors were associated with lower listening comprehension, confirming the interdependence of the two skills. T-tests further showed significant group differences in both spelling and listening performance. The following studies show a detailed analysis in each spelling aspect.

4) Word Length and EFL Spelling Errors by Freshman College Students (Al-Jarf, 2005c)
5) Morphological problems in spelling English words by Saudi freshman students (Al-Jarf, 2002a)
6) Auditory and visual problems of good and poor EFL college spellers (Al-Jarf, 2009a)
***7) Phonological and orthographic problems in EFL college spelling* (Al-Jarf, 2008b)**
***8) Faulty strategies of EFL freshman spellers* (Al-Jarf, 2007b)**
9) Listening-Spelling Strategies in EFL Arab College Students (Al-Jarf, 2008a)
***10) Sources of spelling errors in EFL Arab college students* (Al-Jarf, 2008c)**

Studies 4 to 10 used the same dataset and instrument, each examined the corpus from a different analytical angle, including phonological versus orthographic problems, auditory versus visual problems, spelling strategies, sources of errors, and word length.

Across the dataset, students produced 1699 spelling errors (766 whole-word errors (45%) and 933 faulty graphemes (55%), indicating that students struggled more with the internal word parts than recognizing whole words. Poor spellers produced 738 errors (43%), while good spellers produced 203 errors (12%). On average, a poor speller produced 32 whole-word errors and 42 faulty graphemes, compared to 8 and 12 errors for a good speller respectively. These figures reflect a consistent pattern across all 7 studies: EFL freshmen experience substantial difficulty in both hearing spoken words accurately and converting phonemes into the correct corresponding graphemes.

Error analysis also revealed that some misspellings contained multiple faulty graphemes within a single word including words with 3, 4, 5, and even 6 errors (e.g., *specialy, espically, spichally, quishchin, aspechely, oulompeul*). These patterns highlight persistent weaknesses in phoneme–grapheme relationships, vowel discrimination, and the perception of hidden or silent sounds. Word length influenced the frequency and nature of spelling errors among freshman EFL students. The students produced more errors in shorter words than in longer ones. Monosyllabic words generated 575 errors, disyllabic words 495 errors, trisyllabic words 246 errors, four-syllable words 95 errors, and five-syllable words 22 errors, indicating that short words—often containing vowel digraphs, silent letters, or consonant clusters—were the most problematic.

Morphological errors reflected students' difficulty in perceiving, segmenting, and representing English morphemic structure such as plural formation, suffix spelling, capitalization, compounds, and verbs ending in –s also posed significant challenges.
Numerous morpheme-level error strategies were identified: deletion, addition, and substitution of morphemic units. Students frequently deleted suffixes and entire syllables, misrepresented inflectional endings, and altered derivational morphemes. These patterns reveal that learners struggled not only with phoneme–grapheme correspondence but also with recognizing and encoding the morphological structure of English words.

Phonological (auditory) problems were more frequent than orthographic (visual) problems (63% vs 37% respectively). Students frequently failed to hear or discriminate phonemes, especially vowels, final syllables, suffixes, and minimal pairs. Poor spellers misheard 31 whole words and 21 phonemes, while good spellers misheard 7 whole words and 7 phonemes, indicating that auditory perception and phoneme segmentation were major sources of difficulty. Orthographic errors demonstrated that the students struggled with vowel digraphs, silent vowels, silent consonants, double consonants, and homophones. Poor spellers misrepresented 11 vowel digraphs, 5.5 silent vowels, 4 double consonants, and 3 silent consonants on average, whereas good spellers showed minimal difficulty with these patterns. Together, the findings show that EFL freshmen have greater difficulty recognizing spoken words than representing known sounds in writing, but weaknesses exist in both domains.

Regarding the spelling strategies, the studies found that students relied overwhelmingly on substitution in whole-word errors and omission in faulty graphemes. Substitution accounted for 75% of all whole-word errors, reflecting students' tendency to replace an unfamiliar or misheard word with an unrelated word, a minimal-pair counterpart, a rhyming word, a rhyming nonce word, a homophone, or an invented word sharing the same initial consonant or syllable. Omission was the second most common whole-word strategy, representing about 22% of whole-word errors, and typically involved leaving the blank empty or deleting major parts of the target word. Reversal was rare at 3%, and insertion did not occur at the whole-word level. For faulty graphemes, omission was the most frequent strategy (48%), followed by substitution (33%), insertion (15%), and reversal (3%). Students frequently deleted silent vowels, silent consonants, vowel digraphs, double consonants, suffixes, and entire syllables. Substitution errors indicated difficulty discriminating vowels, diphthongs, and consonants, while insertion errors revealed auditory confusion and visual misrepresentation. Poor spellers used all strategies far more frequently than good spellers, producing four times more omissions and three times more substitutions and insertions.

The studies also identified the sources of spelling errors. The most dominant source strategies for whole word errors was communication breakdown (50–54%) where students failed to hear all phonemes in the spoken word. Poor spellers produced five times more communication-breakdown errors than good spellers. Interference from other English words constituted (22%) of whole-word errors, where students confused homonyms, minimal pairs, or similar-sounding words. Partial failure, i.e., inability to hear part of the word accounted for 12–14%. Errors due to speed of the speaker and poor short-term auditory memory constituted 5% each. For faulty graphemes, the most common error source was ignorance of English spelling rules (43%); transfer from Arabic (31–33%) where students spelled English words phonetically, reduced double consonants, deleted silent vowels, and simplified digraphs. Mispronunciation accounted for 12–13%, overgeneralization for 10%, and unfamiliarity with American pronunciation for 1%. These findings show that spelling errors arise from a combination of auditory, linguistic,

orthographic, and cross-linguistic factors, with poor spellers demonstrating weaker phoneme discrimination, poorer awareness of English spelling rules, greater reliance on Arabic spelling habits, and more frequent mispronunciation.

Overall, the studies demonstrate that spelling errors are systematic rather than random, and that word length interacts with phonological complexity to shape learners' performance. The findings align closely with learner-reported difficulties from the 2002 questionnaire, particularly confusion with vowel contrasts, silent letters, and inconsistent sound–symbol correspondences.

Cluster 3 — Factors Affecting Spelling Skill Acquisition

11) The relationship among spelling, listening and decoding skills in EFL freshman students (Al-Jarf, 2005)

This study examined whether EFL freshman students' spelling ability is related to their listening comprehension and decoding skills. Thirty-six Saudi freshmen students completed a dictation test, a listening comprehension test, and a decoding test. Results showed that students misspelled an average of 41.5% of the dictation words, answered 49.5% of the listening items correctly, and achieved 52% accuracy in decoding, indicating overall low performance in all three skills. Analysis of Variance (ANOVA) revealed significant differences among the mean scores of spellings, listening, and decoding. Correlation analysis showed strong negative correlations between spelling errors and both listening comprehension ($r = -0.75$) and decoding ($r = -0.73$), and a positive correlation between listening and decoding ($r = 0.65$). These findings indicate that good spelling ability is associated with strong listening comprehension and decoding skills, and that weaknesses in auditory processing and sound–symbol association contribute directly to spelling difficulties.

12) The Effects of Listening Comprehension and Decoding Skills on Spelling Achievement of EFL Freshman Students (Al-Jarf, 2005b)

This study investigated the extent to which listening comprehension and decoding skills influence spelling achievement, and whether good and poor spellers differ significantly in these skills. Using the same cohort of 36 Saudi freshmen, the study compared the spelling, listening, and oral-reading performance of good and poor spellers. Significant differences were found between the three skills, and between good and poor spellers across all measures. Good spellers consistently outperformed poor spellers in listening comprehension and decoding, confirming that strong auditory discrimination and accurate sound–symbol mapping contribute to better spelling performance. The findings demonstrate that spelling, listening, and decoding are interdependent skills, and that weaknesses in phonological awareness, auditory discrimination, and graphemic processing underlie poor spelling achievement. The study concludes that improving listening and decoding instruction can directly enhance spelling accuracy.

***13) The Effects of Listening and Oral Reading Abilities on Spelling Achievement in EFL* (Al-Jarf, 2005)**

This study investigated how listening comprehension and decoding skills influence spelling achievement among 36 Saudi EFL freshman students. Using a dictation test, a listening comprehension test, and an oral-reading decoding test, the results showed that students misspelled 41.5% of the dictation words, answered only 49.5% of listening items correctly, and achieved 52% accuracy in decoding—indicating overall weakness across all three skills. ANOVA revealed significant differences among spelling, listening, and decoding mean scores, and correlation analysis showed strong negative correlations between spelling errors and both listening ($r = -0.75$) and decoding ($r = -0.73$), as well as a positive correlation between listening and decoding ($r = 0.65$). Comparisons between good and poor spellers further demonstrated that students with stronger listening and decoding abilities produced significantly fewer spelling errors. Overall, the findings confirm that spelling, listening, and decoding are interdependent linguistic processes, and that weaknesses in auditory discrimination, phonological awareness, and sound–symbol mapping directly contribute to poor spelling performance.

Cluster 4 — Instructional Models & Interventions

14) Combating EFL college students' difficulty with English spelling (Al-Jarf, 2006a)

15) A Guide to English Spelling for EFL Students (Al-Jarf 2003);

16) Making connections in spelling instruction (Al-Jarf, 2010b)

Across studies 15, 16 & 17, the author developed and implemented a structured, phonics-based instructional model designed to address the specific spelling weaknesses identified in earlier research. The instructional framework systematically introduced English vowel and consonant patterns, vowel digraphs, silent letters, hidden sounds, consonant digraphs, morphological spelling rules, affixation, doubling rules, consonant replacement, and spoken–written contrasts such as assimilation, elision, flaps, and reduction. Each lesson focused on a single rule supported by graded word lists, minimal-pair practice, and explicit connections between phonemes and graphemes. Students were encouraged to build word families, compare patterns across lessons, and reinforce learning through summary reviews every 5–7 lessons.

The instructional model was integrated into listening, reading, writing, grammar, vocabulary, and dictionary-skills courses, ensuring repeated exposure to accurate sound–symbol correspondences. New words were taught through multidimensional

associations, including spelling patterns, phoneme–grapheme correspondences, morphological families, and semantic networks. This emphasis on building interconnected knowledge supported learners' ability to generalize spelling rules and apply them across contexts.

Pre- and post-test comparisons consistently demonstrated significant gains in spelling performance for students who received the instruction, both relative to their own baseline scores and to peers who did not take the course. Collectively, these studies provide strong evidence that explicit, cumulative, rule-based spelling instruction, grounded in phonological and orthographic principles, effectively improves EFL students' spelling accuracy and reduces the phonological, orthographic, and morphological errors documented in earlier research.

17) Teaching spelling with mind-mapping software (Al-Jarf, 2011b)

The study demonstrates how mind-mapping software (FreeMind 0.9.0) can be integrated into EFL spelling instruction to help freshman translation students at COLT overcome persistent phonological and orthographic weaknesses that the regular curriculum ignores. Since typical freshmen misspell about 41.5% of words and struggle with vowel digraphs, silent letters, double consonants, hidden sounds, minimal pairs, and phoneme discrimination, the study proposes a structured sequence of graded phonics lessons supported by mind maps that visually connect phonemes to graphemes. Using branches, colors, and hierarchical structures, mind maps enable students to categorize and recall spelling rules related to vowel pronunciations, silent-e patterns, digraphs, consonant variants, homophones, homographs, affixation rules, assimilation, elision, and spelling changes. Instruction proceeds through orientation, modelling, guided practice, independent practice, and assessment, with students gradually building personalized phonics maps that expand as new rules are introduced. The visual, associative nature of mind mapping helps students see relationships among spelling patterns, retain detailed orthographic knowledge, and integrate new words into existing phoneme-grapheme categories. Prior research cited in the study shows that mind mapping enhances retention, organization, comprehension, and motivation across learning contexts, and the present study concludes that mind-mapping software is an effective tool for teaching phonics, improving spelling accuracy, and strengthening sound-symbol associations among EFL learners.

4. *Discussion*

4.1 Meta-Conclusion

The corpus as a whole demonstrates that EFL spelling difficulties among Saudi freshman learners stem from a persistent interaction of phonological, orthographic, and morphological weaknesses that appear consistently across all studies. Despite the diversity of research designs, ranging from error analysis to skill-correlation studies and instructional interventions, the findings converge on a single conclusion: learners struggle primarily because English spelling requires accurate phoneme, grapheme correspondence, a skill that is insufficiently developed through traditional instruction. Across the corpus, students show high rates of faulty graphemes, misheard phonemes, minimal-pair confusion, and rule-based errors, indicating that spelling problems are systematic rather than incidental. Collectively, the studies confirm that explicit, structured, and cumulative instruction is essential for improving spelling accuracy, and that spelling cannot be treated as a peripheral skill but must be taught as an integrated linguistic system.

4.2 Meta-Interpretation

Taken together, the four clusters reveal a coherent developmental trajectory in understanding spelling performance in EFL. First, the studies demonstrate that learners' misspellings are systematic rather than random, and that large-scale error collection provides a reliable empirical foundation for identifying recurring patterns across phonological, orthographic, morphological, auditory, and visual dimensions. The diagnostic studies further show that these errors stem from persistent weaknesses in vowel discrimination, silent-letter processing, grapheme sequencing, morphemic awareness, and the use of ineffective spelling strategies, confirming that learners struggle with both whole-word recognition and internal word structure. The factor-analytic studies deepen this picture by demonstrating that spelling is tightly interwoven with listening comprehension and decoding ability: students who fail to perceive phonemes, syllable boundaries, or consonant clusters accurately are the same students who produce the highest rates of faulty graphemes and whole-word substitutions. Finally, the intervention studies show that when instruction directly targets these underlying spelling weaknesses, through explicit phonics, rule-based instruction, and multimodal reinforcement, learners make substantial and significant gains. Collectively, the corpus indicates that spelling is not a surface-level literacy skill but a multi-layered cognitive-linguistic process shaped by auditory perception, phonological representation, orthographic knowledge, and morphological awareness. Therefore, effective instruction must address these deeper processes rather than rely on memorization or incidental exposure.

4.3 Cross-Cutting Insights

Across all four clusters, several cross-cutting insights emerge that reveal the multi-layered nature of EFL spelling development. First, the corpus-based studies show that spelling errors are highly systematic: learners repeatedly struggle with vowel contrasts, silent letters, consonant clusters, morphological endings, and grapheme sequencing, indicating that weaknesses are rooted in predictable linguistic patterns rather than random slips. Second, the studies demonstrate that the spelling errors arise from interconnected phonological, orthographic, morphological, auditory, and visual processing difficulties. Learners who fail to perceive phonemes accurately, segment syllables, or discriminate minimal pairs are the same learners who misrepresent vowel digraphs, delete silent letters, and distort morphemic structure. Third, the strategy-focused studies reveal that learners rely heavily on substitution, omission, and analogy when uncertain, showing that ineffective strategies amplify underlying linguistic weaknesses. Fourth, the listening-decoding-spelling studies confirm that spelling is tightly linked to listening comprehension and decoding ability; auditory discrimination and phonological awareness consistently emerge as the strongest predictors of spelling accuracy. Finally, the intervention studies demonstrate that explicit, cumulative, rule-based instruction—supported by multimodal input and repeated exposure—produces significant improvements, especially when instruction targets the deeper cognitive-linguistic processes rather than surface memorization. Together, these insights point toward a unified model in which spelling development depends on systematic error analysis, strengthened auditory and phonological processing, explicit orthographic and morphological instruction, and sustained, scaffolded practice across modalities.

4.4 Implications

The findings of this corpus carry several important implications for curriculum designers, teachers, and educational policymakers. First, the phonological and orthographic weaknesses documented across studies indicate that English spelling cannot be effectively taught through memorization or exposure alone; instead, the EFL language skills curricula must incorporate explicit, systematic instruction in phoneme–grapheme correspondence, vowel and consonant patterns, digraphs, and morphological rules. Second, the strong relationship between spelling, listening, and decoding suggests that spelling instruction should be integrated with oral-language development rather than treated as a separate written skill. EFL language skills instruction that strengthens auditory discrimination, minimal-pair recognition, and syllable segmentation are likely to yield significant improvements in spelling accuracy. Third, the success of intervention studies demonstrates that structured, cumulative, and scaffolded instruction—supported by multimodal input—can significantly reduce error rates, especially when learners receive repeated practice with feedback. Fourth, the positive outcomes associated with technology-enhanced environments imply that digital tools, audiovisual materials, and interactive platforms can play a central role in supporting pronunciation, decoding, and spelling acquisition. Finally, the corpus highlights the need for teacher training programs that equip instructors with linguistic knowledge of English phonology and orthography, enabling them to diagnose error patterns and provide targeted remediation. Collectively, these implications call for a shift toward linguistically informed, evidence-based spelling instruction across EFL contexts.

4.5 *Positioning This SR Within the Global Spelling SRs*

Within the global landscape of spelling SRs, research remains surprisingly limited, fragmented, and often restricted to L1 English contexts. Existing SRs typically focus on isolated components such as phonological awareness, orthographic development, or morphological instruction, and most synthesize studies conducted with children rather than adult EFL learners. Very few reviews examine spelling as a multi-layered cognitive-linguistic process, and almost none adopt a corpus-based approach that traces error patterns across phonological, orthographic, morphological, auditory, and visual dimensions simultaneously. This SR therefore fills a major gap by offering a unified synthesis of a large, internally consistent body of studies conducted with the same cohort, dataset, and instrument. Unlike global SRs that aggregate heterogeneous samples and tasks, this review provides a rare longitudinal-analytic perspective that links error corpora, diagnostic analyses, skill-based correlational studies, and instructional interventions within a single research program. As such, it contributes a distinctive EFL-specific model of spelling development that complements and extends existing international reviews, positioning this SR as one of the few comprehensive, corpus-driven syntheses in the global spelling literature.

4.6 *How This SR Connects to the Author's Previous SRs*

This SR extends the author's long-standing program of research, which has produced twenty-five systematic reviews across diverse domains of EFL pedagogy, linguistics, technology integration, and language learning processes. While earlier SRs examined broad instructional themes, such as social media in EFL learning, mobile-assisted language development, pronunciation instruction, vocabulary acquisition, ESP innovation, LMS-supported instruction, and reading practices, this review occupies a more specialized position by focusing exclusively on English spelling as a cognitive-linguistic skill. It builds on insights from previous SRs that highlighted learners' phonological weaknesses, decoding difficulties, and challenges with multimodal input, yet it advances the field by synthesizing a corpus centered on error patterns, phoneme–grapheme mapping, and the effectiveness of explicit rule-based instruction. Unlike earlier SRs that addressed macro-skills or technology-enhanced environments, this SR provides a micro-level analysis of spelling as a foundational literacy component that underpins reading,

writing, pronunciation, and translation. In doing so, it complements and deepens the author's broader research trajectory, offering a focused contribution that bridges her prior work on pronunciation, vocabulary, reading, assessment, and AI-supported pedagogy. Collectively, this SR reinforces the coherence of the author's research agenda and demonstrates how spelling instruction intersects with, and benefits from, the pedagogical principles established across her earlier systematic reviews.

4.7 *Limitations*

Across the corpus, several limitations should be acknowledged. First, the studies were based on a small sample of 36 freshman students, which strengthens internal consistency but limits the generalizability of the findings to larger groups of students at other institutions, other EFL contexts. The corpus does not include a larger group, higher-level learners in advanced listening, speaking, reading, writing and vocabulary translation and interpreting course. Second, the spelling errors were drawn from a single listening–spelling cloze test, meaning that the corpus does not capture spelling errors collected from in writing assignments, writing or vocabulary tests. Although, this the small error dataset allows for fine-grained analysis but it constrains the range of phonological, orthographic, and morphological patterns that can be identified. Third, the studies did not examine the relationship between spelling and pronunciation errors directly, despite theoretical and empirical indications that mispronunciation of unfamiliar words may contribute to faulty phoneme-grapheme representation. Finally, the corpus reflects the linguistic environment of Arabic-speaking EFL learners, and therefore the error types, strategies and sources may differ for learners with other first language backgrounds. These limitations highlight the need for broader, multi-task, and multi-level research to extend and validate the findings across diverse learner populations and instructional contexts.

5. Recommendations & Directions for Future Research

Based on the collective findings of this corpus, several recommendations and directions for future research are offered. In all skill-based courses, teachers should connect the printed form of words to their spoken form in reading, writing, grammar, and vocabulary lessons by highlighting vowel quality, consonant clusters, stress patterns, and syllable boundaries. In oral-skills courses, instructors should link phonemes to graphemes using minimal pairs, phoneme–grapheme charts, and short targeted dictations. Spelling can be taught through pattern-based instruction, grouping words according to vowel patterns, inflectional endings, derivational morphology, and common error types. Teachers may also use micro-diagnostic tasks periodically to identify recurring spelling difficulties and tailor instruction accordingly. Modelling strategic spelling behaviors—such as breaking words into syllables, predicting spelling from vowel sounds, and checking morphological clues—helps students internalize effective strategies. Previously taught patterns should be recycled cumulatively to reinforce long-term retention.

Students can improve their spelling by paying attention to word-processing corrections and examining alternative spellings to identify personal error patterns. They can use online dictionaries and dictionary apps to check pronunciation, variant spellings, spelling changes in derived forms and inflectional endings, syllable division, and stress patterns. Because they are already familiar with Google Translate, students may use it to hear pronunciation, see the written form, and obtain the Arabic meaning, because understanding that meaning is a support tool rather than a substitute for analysis. Learners can create personal lists of minimal pairs, homophones, derived forms, and inflectional endings, organized by pattern. Keeping a spelling notebook helps track difficult words and identify underlying phonological or orthographic patterns. Students may also practice short daily dictations (30–60 seconds) to strengthen sound–print connections, read aloud to reinforce vowel accuracy and rhythm, and slow down during writing tasks to check vowel sounds before finalizing a word. After completing essays, assignments, translations, or term papers, they can use Grammarly to check and correct misspellings.

Students can also benefit from technologies such as text-to-speech software, which allows them to see the printed form of words in connected text and hear their pronunciation. A wide range of spelling mobile apps—such as phonics apps, Spell and Pronounce, Spelling Master, Spelling Trainer, Spelling Games, SpellBee, Spelling Test Quiz, Spelling Master Game, Spell and Pronunciation, Spelling Learn and Quiz, Spelling Words, Spelling Matching Games, Numbers Spelling, Spelling Rules Course, Correct Spelling, 400 Spelling Learn, and Spelling Adventures—can support independent practice. Spaced-repetition flashcards can further reinforce long-term retention of spelling patterns.

Although AI tools can be very helpful for generating examples and practice items, they are not fully reliable when it comes to fine-grained spelling patterns such as silent letters. In several trials by the author, AI systems produced in accurate words in lists of words with a "specific silent letter" or city and country names containing the letter g prounounced /g/ and examples in which g is pronounced /dʒ/. This means that students cannot safely depend on AI to supply correct examples, because they are not yet able to judge which words are accurate and which ones are misleading. For this reason, AI-generated examples should always be filtered and validated by the teacher, or by checking against trusted sources (e.g., dictionaries, glossary, published spelling references and guides) before being used in class. AI can be a useful starting point for brainstorming, but it should not be treated as an authoritative source for precise linguistic patterns such as silent letters, irregular spellings, or exception lists.

In addition, teachers may use AI tools to generate preliminary lists of words (e.g., words with silent letters, specific vowel patterns, or consonant clusters), but these lists must be carefully reviewed and corrected before being presented to students. AI should be treated as a draft generator, not a final authority on spelling. Students should be explicitly informed that AI tools are not always accurate in spelling details and that they must cross-check AI suggestions using reliable dictionaries or teacher-approved materials. This helps them develop a healthy, critical attitude toward technology rather than blind trust.

Future research may assess the effectiveness of spelling and pronunciation self-study with text-to-speech, mobile apps and AI on students' spelling development. Comparative studies involving learners from diverse L1 backgrounds would help determine which spelling challenges are universal and which are language-specific. Longitudinal research is also needed to examine the durability of instructional gains and the long-term development of phonological and orthographic knowledge. Finally, more experimental work is required to isolate the effects of specific instructional component, such as minimal-pair training, morphological awareness, or rule-based instruction, pronunciation-spelling connection is interpreting courses to determine which interventions yield the strongest and most sustainable improvements.

6. Conclusion

This SR synthesizes a comprehensive body of research by the author that spans error analysis, cross-skill correlations, and instructional interventions, offering a unified account of the phonological, orthographic, and morphological challenges faced by Saudi EFL learners. Across all studies, spelling emerges not as a peripheral skill but as a central component of language proficiency that reflects deeper cognitive-linguistic processes. The findings demonstrate that learners' spelling errors are systematic, predictable, and strongly linked to weaknesses in auditory discrimination, decoding, and rule internalization. At the same time, the intervention studies show that explicit, structured, and multimodal instruction can significantly improve learners' accuracy, confirming that spelling difficulties are responsive to well-designed pedagogical support.

By positioning spelling within a broader linguistic and pedagogical framework, this SR contributes a focused and culturally grounded perspective to global discussions on literacy development in EFL contexts. It highlights the need for evidence-based instructional practices, teacher preparation grounded in linguistic knowledge, and continued research that bridges cognitive theory with classroom realities. Ultimately, the review underscores that effective spelling instruction is both achievable and essential, forming a foundation for learners' success in reading, writing, pronunciation, and overall language competence.

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References

[1] Al-Jarf, R. (2026a). An author-bounded systematic review of studies on social media in EFL Teaching and learning (2008–2025): Skills, platforms, and pedagogical insights. *Journal of Computer Science and Technology Studies, 8*(6), 72-93. https://doi.org/10.32996/jcsts.2026.8.6.6

[2] Al-Jarf, R. (2026b). An integrative review of studies on teaching English for art education purposes to Ph.D. students. International *Journal of Arts and Humanities Studies, 6*(2), 01-15. DOI: 10.32996/ljahs.2026.6.2.1. Google Scholar

[3] Al-Jarf, R. (2026c). An interpretive systematic review of a researcher's contributions to EFL reading instruction: Themes, methods, and pedagogical insights. *Journal of English Language Teaching and Applied Linguistics, 8*(4), 01-22. DOI: 10.32996/jeltal.2026.8.4.1. Google Scholar

[4] Al-Jarf, R. (2026d). An integrative systematic review of studies across diverse educational evaluation domains. British *Journal of Teacher Education and Pedagogy, 5*(3), 40-60. https://doi.org/10.32996/bjtep.2026.5.3.5. Google Scholar

[5] Al-Jarf, R. (2026e). Are Arabic YouTube videos narrated by artificial intelligence suitable for training foreign students in listening skills? *Frontiers in Computer Science and Artificial Intelligence, 5*(3), 09-23. DOI: 10.32996/fcsai.2026.5.3.2. Google Scholar

[6] Al-Jarf, R. (2026f). A self-systematic review of translation error studies (2000–2025): The Case of students' errors in English–Arabic and Arabic–English translation. *International Journal of Translation and Interpretation Studies, 6*(1), 16-32. DOI: 10.32996/ijtis.2026.6.1.2. Google Scholar

[7] Al-Jarf, R. (2026g). A self-systematic review of mobile apps for developing multiple language skills in EFL. *Journal of Computer Science and Technology Studies, 8*(3), 14-29. DOI: 10.32996/jcsts.2026.8.3.2. Google Scholar

[8] Al-Jarf, R. (2026h). A systematic review of studies on adult reading practices, interests, habits and challenges. *Journal of Humanities and Social Sciences Studies, 8*(3), 114-129. DOI: 10.32996/jhsss.2026.8.3.9. Google Scholar

[9] Al-Jarf, R. (2026i). A systematic review of studies on pronunciation instruction and practice in L2 (2005-2025). *Journal of English Language Teaching and Applied Linguistics, 8*(1), 10-26. DOI: 10.32996/jeltal.2026.8.1.2. Google Scholar

[10] Al-Jarf, R. (2026j). A systematic review of studies on teaching reading in Arabic to grades 1–12: Textbooks, skills, and learning outcomes. *Journal of Learning and Development Studies, 6*(5), 01-19. https://doi.org/10.32996/jlds.2026.6.5.1. Google Scholar

[11] Al-Jarf, R. (2026k). A systematic self-review of electronic searching studies (2002–2021): Training, infrastructure, and institutional contexts. *Journal of Computer Science and Technology Studies, 8*(5), 179-194. DOI: 10.32996/jcsts.2026.8.5.16. Google Scholar

[12] Al-Jarf, R. (2026l). A Systematic self-review of studies on EFL vocabulary: teaching, assessment, learning outcomes, and ai translation quality. *Journal of World Englishes and Educational Practices, 8*(3),16-38. DOI: 10.32996/jweep.2026.8.3.3 . Google Scholar

[13] Al-Jarf, R. (2026m). A systematic self-review of specific-skill assessment studies: Principles and practices. *Journal of World Englishes and Educational Practices, 8*(2), 11-33. Google Scholar

[14] Al-Jarf, R. (2026n). Arabic–English transliteration of personal names and public signages: A Systematic review and Meta-analysis. *British Journal of Applied Linguistics, 6*(1), 01-14. DOI: 10.32996/bjal.2025.6.1.1. Google Scholar

[15] Al-Jarf, R. (2026o). Children's language acquisition and development in Saudi Arabia: A Systematic review and meta analysis. *Journal of Learning and Development Studies, 6*(1), 18-37. DOI: 10.32996/jlds.2026.6.1.3. Google Scholar

[16] Al-Jarf, R. (2026p). Classroom practices, writing enhancement and creativity among EFL struggling students: A systematic review. *Journal of World Englishes and Educational Practices, 8*(1), 20-38. DOI: 10.32996/jweep.2026.8.1.3. Google Scholar

[17] Al-Jarf, R. (2026q). Collaborative learning and teaching in digital environments: A systematic review of two decades of research. *Journal of Computer Science and Technology Studies, 8*(4), 25-40. DOI: 10.32996/jcsts.2026.8.4.2 Google Scholar

[18] Al-Jarf, R. (2026r). Distance learning in the COVID-19 era and beyond: A multi-dimensional review of teaching, learning, assessment, infrastructure and crisis management. *Journal of Humanities and Social Sciences Studies, 8*(4), 83-105. https://doi.org/10.32996/jhsss.2026.8.4.11 . Google Scholar

[19] Al-Jarf, R. (2026s). Effectiveness of mind-mapping on multiple English language skills in the Saudi Context: A systematic review. *Frontiers in English Language and Linguistics, 3(*1), 01-10. DOI: 10.32996/fell.2026.3.1.1. Google Scholar

[20] Al-Jarf, R. (2026t). Inadequate staffing and large class sizes in Saudi EFL and translation programs: An integrative analysis of empirical studies. *British Journal of Teacher Education and Pedagogy, 5*(1), 19-27. DOI: 10.32996/bjtep.2026.5.1.3. Google Scholar

[21] Al-Jarf, R. (2026w). Innovative word formation and pluralization processes in Arabic: A systematic review. *Journal of Humanities and Social Sciences Studies, 8*(1), 44-60. DOI: 10.32996/jhsss.2026.8.1.6. Google Scholar

[22] Al-Jarf R. (2026x). Online videos and podcasts for language learning in the Saudi Context: A Systematic Review (2010-2025). *Journal of English Language Teaching and Applied Linguistics, 8*(5), 86-107. DOI: 10.32996/jeltal.2026.8.5.11. Google Scholar

[23] Al-Jarf, R. (2026y). Systematic review and meta-analysis of 2024–2025 studies on AI Arabic translation, linguistics and pedagogy. *Frontiers in Computer Science and Artificial Intelligence, 5*(1), 07-27. DOI: 10.32996/jcsts.2026.5.1.2. Google Scholar

[24] Al-Jarf, R. (2026z). Three decades of ESP innovation: A review of research across specialized and underexplored domains. *British Journal of Teacher Education and Pedagogy, 5*(2), 19-31. DOI: 10.32996/bjtep.2026.5.2.3. Google Scholar

[25] Al-Jarf, R. (2026aa). Two decades of LMS-supported EFL instruction: A systematic review of implementation, use, infrastructure, and success factors. *Journal of Computer Science and Technology Studies, 8*(6), 49-71. DOI: 10.32996/jcsts.2026.8.6.5. Google Scholar

[26] Al-Jarf, R. (2025a). Arabic transliteration of borrowed English nouns with /g/ by Artificial Intelligence (AI). *Journal of Computer Science and Technology Studies*, *7*(9), 245-252. https://doi.org/10.32996/jcsts.2025.7.9.29. Google Scholar

[27] Al-Jarf, R. (2025c). Faulty consonant gemination in the pronunciation of English biomedical terms by Arab healthcare professionals. *Journal of Medical and Health Studies, 6*(3), 56-66. DOI: 10.32996/jmhs.2025.6.3.9. Google Scholar

[28] Al-Jarf, R. (2024d). Intonational Meanings of Discourse Markers in Spoken Colloquial Arabic. *Journal of Pragmatics and Discourse Analysis, 3*(2), 01-10. Google Scholar

[29] Al-Jarf, R. (2025e). Mapping pronunciation errors in English silent consonants: A corpus-based study of Saudi EFL undergraduates. *Journal of Humanities and Social Sciences Studies, 7*(6), 13-21. DOI: 10.32996/jhsss.2025.7.6.2. Google Scholar

[30] Al-Jarf, R. (2025f). *Pronunciation errors in AI-narrated Arabic YouTube videos*. LICCS Pronunciation Errors in Arabic YouTube Videos Narrated Online Conference on Teaching and Research in Language and Culture: Past, Present and AI. Babeș-Bolyai University, Cluj-Napoca, Romania. September 11-12, 2025. Google Scholar

[31] Al-Jarf, R. (2025g). Pronunciation errors in Arabic YouTube videos narrated by AI. *Frontiers in Computer Science and Artificial Intelligence*, *4*(2), 01-12. https://doi.org/10.32996/fcsai.2025.2.2.1. Google Scholar

[32] Al-Jarf, R. (2025h). Splitting unsplittable foreign words in casual speech by EFL Arab learners. *British Journal of Applied Linguistics, 5*(2), 01-11. https://doi.org/10.32996/bjal.2025.5.2.1. Google Scholar

[33] Al-Jarf, R. (2025i). Vowel pronunciation errors in English biomedical terminology by Arab healthcare professionals. *Journal of Medical and Health Studies, 6*(2), 145-155. https://doi.org/10.32996/jmhs.2025.6.2.22. Google Scholar

[34] Al-Jarf, R. (2024). Translation of Medical Terms by AI: A Comparative Linguistic Study of Microsoft Copilot and Google Translate. I2COMSAPP'2024 Conference, in Y. M. Elhadj et al. (Eds.): I2COMSAPP 2024, LNNS 862, pp. 1–16, 2024. Springer Nature Switzerland AG 2024. https://doi.org/10.1007/978-3-031-71429-0_17. Google Scholar

[35] Al-Jarf, R. (2023a). Absence of vowels in the English spelling of Arabic personal names on social media. *International Journal of English Language Studies (IJELS), 5*(4), 88-97. Doi: 10.32996/ijels.2023.5.4.7. ERIC ED633828. Googe Scholar

[36] Al-Jarf, R. (2023b). English spelling of Arabic compound personal names by educated Arabs on Facebook. *Journal of Humanities and Social Sciences Studies (JHSCS), 5*(1), 53-64. DOI: 10.32996/jhsss.2023.5.1.8. Google Scholar

[37] Al-Jarf, R. (2023c). English spelling of the glottal stop and voiced pharyngeal fricative in Arabic personal names by educated Arabs on Facebook. *International Journal of English Language Studies, 5*(1), 11-22. DOI: 10.32996/ijels.2023.5.1.2. Google Scholar

[38] Al-Jarf, R. (2023d). Non-Conventional Spelling in Informal, Colloquial Arabic Writing on Facebook. *International Journal of Linguistics, Literature and Translation, 6*(3), 35-47. DOI: 10.32996/ijllt.2023.6.4.6. Google Scholar

[39] Al-Jarf, R. (2023e). Testing multiple vocabulary associations for effective long-term learning. *British Journal of Teacher Education and Pedagogy, 2*(3), 57-71. DOI: 10.32996/bjtep.2023.2.3.6. ERIC ED634388. Google Scholar

[40] Al-Jarf, R. (2022a). A multiple-associations approach to teaching technical terms in English for specific purposes courses. *International Journal of English Language Studies, 4*(2), 56-66. DOI: 10.32996/ijels.2022.4.2.5. ERIC ED621773. Google Scholar

[41] Al-Jarf, R. (2022b). Deviant Arabic transliterations of foreign shop names in Saudi Arabia and decoding Problems Among Shoppers. *International Journal of Asian and African Studies, 1*(1), 17-30. DOI: 10.32996/ijaas.2022.1.1.3. Google Scholar

[42] Al-Jarf, R. (2022c). English transliteration of Arabic personal names with the definite article /al/ on Facebook. *British Journal of Applied Linguistics (BJAL), 2*(2), 23-37. DOI: 10.31926/but.pcs.2022.64.15.2.2. Google Scholar

[43] Al-Jarf, R. (2022d). Gemination errors in Arabic-English transliteration of personal names on Facebook. *International Journal of Linguistics Studies (IJLS), 2*(2),163-170. DOI: 10.32996/ijls.2022.2.2.18. Google Scholar

[44] Al-Jarf, R. (2022e). Proper noun pronunciation inaccuracies in English by Educated Arabic speakers. *British Journal of Applied Linguistics (BJAL), 4*(1), 14-21. DOI: 10.32996/bjal.2022.2.1.3. ERIC ED619388. Google Scholar

[45] Al-Jarf, R. (2022f). Student-interpreters' foreign proper noun pronunciation errors in English-Arabic and Arabic-English media discourse interpreting. *International Journal of Translation and Interpretation Studies (IJTIS), 2*(1), 80-90. Doi: 10.32996%2Fijtis.2022.2.1.11. ERIC ED619940. Google Scholar

[46] Al-Jarf, R. (2022g). Text-to-speech software for promoting EFL freshman students' decoding skills and pronunciation accuracy. *Journal of Computer Science and Technology Studies (JCSTS), 4*(2), 19-30. DOI: 10.32996/jcsts.2022.4.2.4. ERIC ED621861. Google Scholar

[47] Al-Jarf, R. (2022h). Variant transliterations of the same Arabic personal names on Facebook. *International Journal of English Language Studies (IJELS), 4*(4), 79-90. DOI: 10.32996/ijels.2022.4.4.11. Google Scholar

[48] Al-Jarf, R. (2022i). YouTube videos as a resource for self-regulated pronunciation practice in EFL distance learning environments. *Journal of English Language Teaching and Applied Linguistics, 4*(2), 44-52. DOI: 10.32996/jeltal.2022.4.2.4. ERIC ED618965. Google Scholar

[49] Al-Jarf, R. (2021a). A model for communicative error correction in Saudi EFL freshman students' writing. *i-manager's Journal on English Language Teaching*, *11*(2), 32-41. DOI: 10.26634/jelt.11.2.17719. ERIC EJ1321733. Google Scholar

[50] Al-Jarf, R. (2021b). *15 problems in English pronunciation by EFL college students*. *International Scientific Conference on "Russia-Africa: Politics, Economics, History and Culture". Kazan Federal University. Kazan, Russia. October 22, 2021*. https://www.researchgate.net/publication/394624372. Google Scholar

[51] Al-Jarf, R. (2021c). Linguistic-cultural characteristics of hotel names in Saudi Arabia: The case of Makkah, Madinah and Riyadh Hotels. *International Journal of Linguistics, Literature and Translation (IJLLT), 4*(8), 160-170. DOI: 10.32996/ijllt.2021.4.8.23. Google Scholar

[52] Al-Jarf, R. (2019). *EFL Freshman students' difficulties with phoneme-grapheme relationships*. 5th VietTESOL International Convention. Hue University of Foreign Languages, Hue, Vietnam. October 11-12. Google Scholar

[53] Al-Jarf, R. (2015). A model for enhancing EFL freshman students' vocabulary with mind-mapping software. *Journal of Teaching English for Specific and Academic Purposes, 3*(3), Special Issue, 509–520. ERIC ED613122. Google Scholar

[54] Al-Jarf, R. (2014). Webster's mobile dictionaries: What EFL students and teachers should know. *Asia CALL. National Changhua University of Education, Changhua Taiwan*. November 22-24, 2014. Google Scholar

[55] Al-Jarf, R. (2011a). Correcting students' writing errors: the role of communicative Feedback. National Seminar on Foreign Language Teaching: Towards a Multilingual Generation in a Globalized World. Kedah, Alor Setar, Malaysia, Nov 2-3. ERIC ED614900. Google Scholar

[56] Al-Jarf, R. (2011b). Teaching spelling with mind-mapping software. *Asian EFL Journal, 53*(July), 4-16. ERIC ED633879. Google Scholar

[57] Al-Jarf, R. (2011c). *Teaching Greek and Latin roots to premedical students with mind-mapping software*. 2nd FLLAS International Conference on Language for Specific Purposes: Challenges and Prospects, Beograd, Serbia, Feb 4-5, 2011). ERIC ED613146. Google Scholar

[58] Al-Jarf, R. (2010a). *Enhancing freshman students' vocabulary skills with mind-mapping software*. Touchpoint 2010 International Conference on Technology in Education. Manila, Philippines. Google Scholar

[59] Al-Jarf, R. (2010b). *Making connections in spelling instruction*. 1st Cebu international TESOL Conference. Cebu, Philippines. August 13-15. https://www.researchgate.net/publication/404781363. Google Scholar

[60] Al-Jarf, R. (2010c). Spelling error corpora in EFL. US-China Foreign Language. Sino-US English Teaching, 7(1), 6-15. ERIC ED620777. Google Scholar

[61] Al-Jarf, R. (2010d). Teaching medical terminology with mind-mapping software. *Annals of "Dunărea de Jos" University of GALAŢI Fascicle XIII: Language and Literature, 29*, 17 (28), 1-10. ERIC ED634233. Google Scholar

[62] Al-Jarf, R. (2009a). *Auditory and visual problems of good and poor EFL college spellers*. College of Languages and Translation. https://www.researchgate.net/publication/238599084. Google Scholar

[63] Al-Jarf, R. (2008a). *Listening-spelling strategies in EFL Arab college students*. College of Languages of Translation, King Saud University Seminars. Google Scholar

[64] Al-Jarf, R. (2008b). *Phonological and orthographic problems in EFL college spelling*. First Regional Conference on English Languag Teaching and Literature (ELTL 1). Islamic Azad University-Roudehen. TELLIS Conference Proceedings. ERIC ED611115. Google Scholar

[65] A-Jarf, R. (2008c). *Sources of spelling errors in EFL Arab college students*. College of Languages of Translation seminars, King Saud University. https://www.researchgate.net/profile/R. -Al-Jarf/publication/345900801. Google Scholar

[66] Al-Jarf, R. (2007a). *Faulty strategies of EFL freshman spellers in Saudi Arabia*. College of language and translation. King Saud University, Riyadh, Saudi Arabia. Google Scholar

[67] Al-Jarf, R. (2007b). *Faulty strategies of EFL freshman spellers*. TESOL Arabia Conference "Unity and Diversity". Al-Ain, UAE. Google Scholar

[68] Al-Jarf, R. (2006a). *Combating EFL college students' difficulty with English spelling*. The 2nd International ELT Conference, ELT Profession: Challenges and Prospects. Eastern Mediterranean University. Famagusta, North Cyprus. May 2-5, 2006. https://www.researchgate.net/publication/392557441. Google Scholar

[69] Al-Jarf, R. (2006b). *Making connections in vocabulary instruction*. 2nd ClaSic Conferenc. Singapore. ERIC ED497939. Google Scholar

[70] Al-Jarf, R. (2005a). The relationship among spelling, listening and decoding skills in EFL freshman students. *English Language & Literature Teaching, 11*(2), *35-55.* Google Scholar

[71] Al-Jarf, R. (2005b). *The effects of listening comprehension and decoding skills on spelling achievement of EFL freshman students*. English language and literature Education. *Journal of the English Language Teachers in Korea (ETAK), 11*(2). ERIC ED625524. Google Scholar

[72] Al-Jarf, 2005c). *Word length and EFL spelling errors by freshman college students*. College of Languages and Translation, King Saud University, Riyadh, Saudi Arabia. https://www.researchgate.net/publication/404777783. Google Scholar

[73] Al-Jarf, R. (2003). *A guide to English spelling for EFL students*. College of Languages and Translation. King Saud University, Saudi Arabia. DOI: 10.13140/RG.2.2.32874.68800. https://www.researchgate.net/publication/404720547. Google Scholar

[74] Al-Jarf, R, (2002a). *Morphological problems in spelling English words by Saudi freshman students*. College of Languages and Translation. King Saud University, Saudi Arabia. https://www.researchgate.net/publication/404771601. Google Scholar

[75] Al-Jarf, R. (2002b). *Saudi students' difficulty with English spelling*. College of Languages and Translation, King Saud University, Riyadh, Saudi Arabia. https://www.researchgate.net/publication/404777012. Google Scholar

[76] Al-Jarf, R. (2002c). *What students say about their spelling problems in EFL: A survey-based study*. College of Language and Translation, King Saud University, Riyadh, Saudi Arabia. May 21, 2002. https://www.researchgate.net/publication/404721720. Google Scholar

[77] Al-Jarf, R. (1999a). *Electronic dictionaries in ESL classrooms. TESOL Arabia* '99. 5th Annual Conference 'Teaching Learning and Technology', Conference Proceedings Vol. IV, 42-51. ERIC ED613205. Google Scholar

[78] Al-Jarf, R. (1999b). *Listening-spelling strategies of freshmen students*. TESOL Arabia Conference titled "Unity and diversity. Google Scholar

[79] Albalooshi, E. (2024). A systematic review into the effectiveness of teaching phonics in english as a foreign language. Master's thesis. University of Oxford

[80] Broc, L., et al. (2021). Capturing the nature of the spelling errors in developmental language disorder: A scoping review. *Language, Speech, and Hearing Services in Schools*, *52*(4), 1127-1140.

[81] Khansir, A. & Pakdel, F. (2020). A study of written errors of Iranian learners: A systematic review. *Theory and Practice in Language Studies*, *10*(8), 982-987.

[82] Mak, M., et al. (2019). L2 (English) spelling is positively correlated with L2 vocabulary size, but not with a 1 measure that putatively taps visual statistical learning 2.

[83] Mlakar, H. & Schilk, M. (2025). L2 English Reading, Spelling, and Cognitive-Linguistic Development: Evaluating the Effects of Phonics versus Whole Word Instruction in L1 German Elementary Students. Language and Literacy / Langue et littératie, 27(2), 160–200. https://doi.org/10.20360/langandlit29711

[84] Mlakar, H., et al (2024). Spelling error analysis in young English language learners from a German background: A comparison of three literacy intervention programmes. *Journal of the European Second Language Association*, *8*(1).

[85] Mohammadi, T., & Mustafa, H. R. (2020). Errors in English writing of ESL/EFL students: A systematic review. *Theory and Practice in Language Studies*, *10*(5), 520-526.

[86] Sammour-Shehadeh, R., et al. (2023). Spelling English as a foreign language: A narrative review of cross-language influences due to distance in writing system, orthography and phonology. *Reading and Writing*, *36*(8), 2147-2173.

[87] Simbeck, K., et al. (2024). Finding Pathways to Effective Learning Environments: A Systematic Review of Online Learning for First Language Spelling Education. *Research on Education and Media*, *16*(2).

[88] Valladolid, G., & Estremera, M. (2026). Theoretical Perspectives on Phonics Instruction: A Systematic Literature Review in English as a Second Language (ESL). *EIKI Journal of Effective Teaching Methods*, *4*(1).

[89] Yen, E., et al. (2022). A Systematic Review of Mobile Learning Trends in Supporting the Mastery of Spelling. *International Journal of Interactive Mobile Technologies*, *16*(24).

[90] Yieng, C., & Aziz, A. (2022). A systematic literature review on using game-based learning to enhance English vocabulary and spelling for primary school pupils. *International Journal of Academic Research in Progressive Education and Development*, *11*(2), 1725-1737.

[91] Yıldız, F. & Çetin, B. (2020). Errors in written expressions of learners of Turkish as a foreign language: A systematic review. *Journal of Language and Linguistic Studies*, *16*(2), 612-625.