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| RESEARCH ARTICLE

Interpreting Pedagogy, Difficulties, Technologies, and Skill Correlates in the Saudi Context: A Systematic Self-Review (2000–2022)

Reima Al-Jarf
Full Professor of English and Translation Studies, Riyadh, Saudi Arabia
Corresponding Author: Reima Al-Jarf, **E-mail:** reima.al.jarf@gmail.com

| ABSTRACT

This study conducted a systematic review (SR) of the author's interpreting research published between 2000 and 2022, with the aim of identifying the thematic areas, methodological orientations, and pedagogical or theoretical contributions that characterize this long term research program. The corpus consists of fifteen studies grouped into four thematic clusters: curriculum design and pedagogical approaches, technology in interpreting training, interpreting difficulties and performance problems, and correlates of interpreting skills. Taken together, these studies present a coherent picture of interpreting as a complex, teachable, and strongly language and knowledge dependent skill. Across clusters, the findings consistently show that structured, fully oral, and gradual training models enable beginners with no prior experience to perform liaison interpreting tasks with increasing fluency and accuracy. At the same time, research on difficulties, error patterns, and performance correlates demonstrates that interpreting competence is constrained primarily by students' L1 and L2 lexical repertoire, background knowledge, and oral language skills rather than by "technique" alone. Directionality studies further reveal that English–Arabic and Arabic–English interpreting are related but asymmetrical in difficulty, with Arabic-English emerging as more demanding, particularly at higher proficiency levels. Overall, the corpus indicates that effective interpreting instruction must integrate graded oral practice, domain and world knowledge building, and systematic development of listening, speaking, and lexical competence in both languages. This SR fills a critical pedagogical gap, as most existing reviews focus on highly specialized professional domains—medical interpreting, conference interpreting, European language pairs, or cognitive processing models—while overlooking undergraduate institutional pedagogy. In contrast, the present review centers on liaison interpreting in Arabic–English educational settings, with sustained attention to undergraduate training in a Saudi institutional environment. It offers a deep, coherent, and longitudinal account of a single research program that has systematically examined curriculum design, technology integration, error patterns, and competence correlates over more than two decades. As such, it complements global SRs by contributing a pedagogically grounded, context specific, and language pair sensitive perspective, highlighting underrepresented issues such as proper noun pronunciation in Arabic–English and English-Arabic media discourse and the role of world knowledge in EFL interpreters' performance.

| KEYWORDS

Systematic review (SR); Al-Jarf research program; liaison interpreting; interpreting pedagogy; interpreting technologies; interpreting directionality; interpreting assessment; interpreting skill correlates; interpreting difficulties; English–Arabic interpreting.

| ARTICLE INFORMATION

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1. Introduction

Language interpretation[1] is the real-time, oral or signed transfer of meaning from one language to another to enable live communication between people who do not share the same language. Interpreting is an immediate, dynamic process that

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

conveys not only lexical words but also tone tone, intent, and cultural nuances of the speaker in real-time, allowing all parties to interact as naturally as if they shared the same language. In Interpreting, the interpreter delivers the message through two primary modes[2]: In simultaneous interpreting (SI), the interpreter delivers the message in the target language at the same time while the speaker is talking. The process requires specialized equipment like headsets and soundproof booths and intense multitasking. This mode is widely used in international events like United Nations conferences. In consecutive Interpreting (CI), the interpreter listens to a segment of speech, takes notes, and then speaks during natural pauses left by the original speaker. It is widely used in smaller, conversational settings such as legal trials, medical appointments and consultations, and business meetings. When communication involves three or more languages, interpreters employ additional strategies[3]. Relay Interpreting is used when no single interpreter knows both the source and target languages, requiring a "bridge" language. For example, if a speaker talks in Malay, Interpreter A renders it into English, and Interpreter B listens to the English interpretation, then interprets it into Arabic. Liaison/bilateral interpreting (LI/BI) involves a single interpreter mediating between two or more parties, and switching languages as each participant speaks. Sight translation requires reading a written text in one language with the eyes but rendering the meaning aloud into the target language on the spot. This frequently used when new documents emerge during legal or medical encounters. Other types of interpreters[4] are whisper and telephone interpreting (TI).

Interpreting requires advanced cognitive training[5] such as active listening to extract the underlying conceptual meaning, beyond surface wording, decalage management to control the lag between hearing a word and speaking it to properly grasp grammatical structure, cultural paraphrasing to replace idioms and figurative expressions with appropriate equivalents so the message sounds natural, and extreme focus as SI causes rapid cognitive fatigue, an necessitates interpreters to work in teams of two or three, rotating shifts every 20 to 30 minutes.

Interpreting research[6] is generally categorized by its methodological approach into cognitive and experimental studies using scientific experiments, eye-tracking, and neurological studies to measure mental processing, memory, and cognitive load during SI or CI. Sociological and ethnographic research examines interpreter's role, power dynamics, positionality, and cultural mediation, in community and public service settings. Descriptive and corpus-based studies analyze real-world interpretation to explore accuracy, shifts, and translation strategies. Pedagogical research evaluates teaching methodologies, curriculum design, and interpreter training programs. In addition, interpreting research topics varies by setting and target audience. Key areas include Interpreting Modes (simultaneous, consecutive, sight and whispered interpreting). Interpreter-Mediated Interaction in medical, legal, and business contexts, technology-assisted interpreting, examining the impact of remote interpreting (OPI/VRI) and AI-driven systems on accuracy and cognitive strain (Hamid, 2024).

Given the diversity of interpreting contexts, the literature includes numerous single studies, systematic reviews (SRs), and meta-analyses (MAs). A substantial body of SRs examined specialized interpreting contexts. Medical and clinical interpreting has received the greatest attention, with SRs addressing clinical outcomes, refugee mental health, access barriers, and professional standards. These include strategies to increase professional interpreting in clinical settings (Gutman et al., 2025), effectiveness of interpreters and strategies for mitigating language barriers (van Lent et al., 2025), interpreter services for immigrants in European healthcare systems (Vange et al., 2024), linguistic errors in medical interpretation (Lauridsen et al., 2024), medical interpreter challenges during in-person sessions (binti Samsudin et al., 2021), mental health and work experiences of interpreters in refugee care (Geiling et al., 2021), and outcomes for hospitalized children with limited English proficiency (Boylen et al., 2020). Legal and court interpreting SRs include challenges in court interpreting in Japan (Tran, 2025) and a decade of legal interpreting research (Monteoliva-Garcia, 2018). Conference interpreting SRs include stress in conference interpreting (Milcu, 2026) and conference interpreting practice and training (Mackintosh, 1995). Cognitive aspects and executive functions in interpreting have been synthesized in SRs such as methods for exploring executive functions in SI (Yang et al., 2025), SI, brain aging, and cognition (Elmer & Giroud, 2023), interpreter advantage in executive functions (Nour et al., 2020), and effects of interpreting training on executive functioning (Nour et al., 2015). Another group of SRs has examined remote and technology-mediated interpreting, including empirical distance interpreting research (Zhu & Aryadoust, 2024); global remote interpreting (Feng, 2023); patient satisfaction of telephone or video interpreter services compared with in-person services (Joseph et al., 2018); and remote interpretation in medical encounters (Azarmina & Wallace, 2005). Further SRs addressed directionality and performance in CI (Lu et al., 2023); professionalisation of interpreting practice (Sulaiman et al., 2025); AI translation and interpretation in clinical settings (Genovese et al., 2024); and interpreting assessment, testing practices and rubrics in rater-mediated assessment of interpreting (Han et al., 2026; Han, 2022; Han, 2018).

[2] https://www.eliteasia.co/how-does-an-interpreter-juggle-with-two-languages/

[3] https://www.open.edu/openlearn/languages/exploring-languages-and-cultures/content-section-5.3

[4] https://creativeword.uk.com/blog/interpreting/four-different-types-language-interpreters/

[5] youtube.com/watch?v=cXNTArhA0Jg&t=53

[6] https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2021.590399/full

Collectively, these SRs demonstrate that interpreting research is broad, diverse, and context-specific. However, none of the existing SRs have examined a single researcher's long-term interpreting research program, nor have they synthesized the evolution, themes, and contributions of one scholar across multiple decades. Therefore, the present study aims to conduct a systematic review of the author's interpreting research published between 2000 and 2022, to identify the thematic areas, methodological orientations, and pedagogical or theoretical contributions that characterize the author's interpreting research program.

This systematic self-review fills a distinct and critical pedagogical gap because most existing SRs focus on highly specialized, professional domains— medical conference interpreting, European language pairs, or cognitive processing models— while overlooking undergraduate institutional pedagogy. In contrast, this SR centers on LI and educational settings in an Arabic–English context, with a sustained attention to undergraduate training in a Saudi institutional environment. It offers a deep, coherent, and longitudinal view of a single research program that has systematically explored curriculum design, technology integration, error patterns, and competence correlates over more than two decades. As such, it complements existing global reviews by adding a pedagogically grounded, context-specific, and language-pair-sensitive perspective, highlighting issues, such as proper noun pronunciation in Arabic–English media discourse, and the role of world knowledge in EFL interpreters' performance, —topics that are underrepresented in global interpreting SRs. While global SRs provide invaluable insights into professional standards, cognitive architecture, and remote logistics, they frequently overlook the foundational baseline: undergraduate institutional pedagogy. The current systematic self-review explicitly departs from these professional and clinical macro-trends by addressing the foundational, formative stages of interpreter development within a university setting. This corpus uniquely unifies curriculum design, classroom technology implementation, cognitive error analysis, and statistical skill correlates within a single, longitudinal framework. By documenting a 22-year instructional trajectory, this study shifts the global SR discourse back to the institutional roots of the discipline, demonstrating how undergraduate competence is built, sustained, and systematically undermined by text-bound educational habits.

Furthermore, 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); studies on* grammar teaching, technologies, and learning outcomes (2000–2025) (Al-Jarf, 2026); *listening and speaking instruction, assessment and technologies in the Saudi EFL context (Al-Jarf, 2026x); spelling error types, strategies, sources, and instructional interventions among EFL freshman students (Al-Jarf, 2026).*

2. Context: The Translation Program and Interpreting Courses at COLT

The studies included in this SR were conducted within the undergraduate Translation Program at the College of Languages and Translation (COLT), King Saud University. The program is primarily translation-oriented, with a strong emphasis on English language development and written translation across 18 subject areas. The interpreting component consists of four types of courses: Simultaneous Interpreting I & II, Consecutive Interpreting I & II, Liaison Interpreting I & II, and Sight Interpreting (one course only).

The first interpreting courses are offered in the fifth semester, and students typically enter them with no prior training in oral interpreting, written translation, or note-taking. The second set of interpreting courses is offered in Level 9. No dedicated courses in conference, court, or medical interpreting are provided. Different instructors teach the various interpreting courses. The author has taught Consecutive Interpreting I once and Simultaneous Interpreting I & II several times, but never taught Simultaneous Interpreting. Each course is taught for two hours per week over a 14-week semester. Instruction is fully oral and delivered in a multimedia language laboratory. No booth-based simultaneous interpreting or advanced consecutive interpreting is offered.

As a result, interpreting instruction at COLT operates within a pedagogical environment that differs substantially from the professional, medical, court, or conference-oriented contexts commonly assumed in global interpreting research. This contextual clarification is essential for situating the findings of the present review and for preventing readers from attributing features to the program that are not part of its structure, resources, or mandate.

It is also important to note that the corpus reflects some chronological and technological boundaries. The author's active instructional period concluded upon retirement in 2012. Consequently, all empirical investigations conducted prior to this date were shaped by the educational technologies available at the time—primarily traditional analogue or early digital multimedia language laboratories. Modern technologies—such as learning management systems (LMS), web-conferencing tools, distance-learning platforms (e.g., Zoom, WebEx, Blackboard, Google Classroom, Microsoft Teams), interactive online courses, and text-to-speech software—were either non-existent or structurally unavailable for integration into the core curriculum during that era.

3. Methodology

The corpus for this SR consists of 15 empirical studies published between 2000 and 2022, all authored by the same researcher (Reima Al-Jarf) and focused on English–Arabic and Arabic-English liaison interpreting (LI) pedagogy, technology-enhanced interpreting training, and students' interpreting performance. These studies were selected because they represent the full span of the author's interpreting research program and collectively illustrate its thematic, methodological, and pedagogical evolution.

3.1 Study Corpus

Cluster 1: Curriculum Design and Pedagogical Approaches to Teaching Interpreting
This cluster includes studies that examine teaching models, LI, tourism interpreting and collaborative learning. These include:

1) *How to teach liaison interpreting to beginners (Al-Jarf, 2007d)*
2) *Bridging the gap between teacher and learner in liaison interpreting (Al-Jarf, 2000a)*
3) *Teaching interpreting for tourism purposes (Al-Jarf, 2021c)*
4) *Collaborative teaching and learning in liaison interpreting (Al-Jarf, 2003)*

Cluster 2: Technology in Interpreting Training
This cluster includes studies that utilized Text-to-speech (TTS), multimedia labs, digital tools, and global events such as:

5) *Integrating current global events and technology in interpreting practice (Al-Jarf, 2022g)*
6) *Text-to-speech software as a resource for independent interpreting practice by undergraduate interpreting students (Al-Jarf, 2022l)*
7) *Feasibility of digital multimedia language labs for interpreting instruction as perceived by interpreting instructors in Saudi Arabia (Al-Jarf, 2021b)*

Cluster 3: Interpreting Difficulties & Performance Problems
This cluster includes studies that examine micro-level performance challenges encountered by student-interpreters during English–Arabic and Arabic–English interpreting tasks. The studies include:

8) student-interpreters' foreign proper noun pronunciation errors in English-Arabic and Arabic-English media discourse interpreting (Al-Jarf, 2022k)
9) what instructors and students should know about interpreting problems (Al-Jarf, 2015)
10) L2/L1 meaning transfer errors by student-interpreters (Al-Jarf, 2013b)

Cluster 4: Correlates of the Interpreting Skills
This cluster includes studies that examine macro-level interpreting competence, focusing on directionality (English>Arabic vs. Arabic > English), comparative performance, and the relationship between interpreting and other linguistic or translation skills. They explore global proficiency patterns and skill correlates.

11) *English-Arabic and Arabic-English interpreting competence of undergraduate student interpreters: a comparative study of directionality (Al-Jarf, 2022d)*
12) *Effect of background knowledge on auditory comprehension in interpreting courses (Al-Jarf, 2018a)*
13) *Correlates of the interpreting skill (Al-Jarf, 2007a)*

14) *Are translation and interpreting skills related? (Al-Jarf, 2007b)*
15) *English-Arabic and Arabic-English interpreting skills: same or different? (Al-Jarf, 2007c)*

1.2 *Eligibility (Inclusion & Exclusion) Criteria*

In conducting this systematic review, several studies were excluded because they did not meet the eligibility criteria for research specifically focused on interpreting as a form of oral translation, such as conference interpreting, court interpreting, medical interpreting, community interpreting, tourism interpreting, and other face-to-face, remote, or telephone-based interpreting practices. Studies were excluded when interpreting was not the primary focus, when it appeared only as a minor component within broader linguistic or pedagogical investigations, or when the research addressed written translation, general language skills, pronunciation in non-interpreting contexts, translation tools, dictionary use, translator training programs, or employment-related issues. Duplicate studies and non-empirical guides were also excluded. The following subsections outline the categories of excluded studies and the rationale for their exclusion.

- **Duplicate studies** as *Effect of background knowledge on auditory comprehension in interpreting courses (Al-Jarf, 2018b).* and *Teaching Interpreting in the Multimedia Classroom (Al-Jarf, 2012)*

- **Studies where interpreting is a partial component** such as: *Grade inflation in language and translation courses at Saudi schools and universities (Al-Jarf, 2022f); Grade Inflation at Saudi Universities Before, During and After the Pandemic: A Comparative Study (Al-Jarf, 2022e); English, linguistics and translation programs at Saudi universities: A comparative study (Al-Jarf, 2004); Translator-Training Programs at Gulf Universities: Current Status and Future Perspectives (Al-Jarf, 2009c);*

- **Studies on students' translation errors** as follows: *expressions of impossibility in Arabic and English: unveiling students' translation difficulties (Al-Jarf, 2024); equivalence problems in translating ibn (son) and bint (daughter) fixed expressions to Arabic and English (Al-Jarf, 2023a); numeral-based English and Arabic formulaic expressions: cultural, linguistic and translation issues (Al-Jarf, 2023b); time metaphors in English and Arabic: translation challenges (Al-Jarf, 2023c); Arabic and English dar (house) and bayt (home) expressions: linguistic, translation and cultural issues (Al-Jarf, 2022a); issues in translating English and Arabic common names of chemical compounds by student-translators in Saudi Arabia (Al-Jarf, 2022h); translation students' difficulties with English and Arabic color-based metaphorical expressions (Al-Jarf, 2019); issues in translating Arabic om- and abu-expressions (Al-Jarf, 2017a); grammatical agreement errors in L1/L2 translation (Al-Jarf, 2000b); SVO word order errors in English-Arabic translation (Al-Jarf, 2007e); word+particle collocation errors in English-Arabic translation (Al-Jarf, 2009d); interlingual pronoun errors in English-Arabic translation (Al-Jarf, 2010b); translation of English and Arabic binomials by advanced and novice student translators (Al-Jarf, 2016); translation students' difficulties with English and Arabic color-based metaphorical expressions (Al-Jarf, 2019); issues in translating English and Arabic plurals (Al-Jarf, 2020); undergraduate student-translators' difficulties in translating English word+preposition collocations to Arabic (Al-Jarf, 2022d); challenges that undergraduate student-translators face in translating polysemes from English to Arabic and Arabic to English (Al-Jarf, 2022b); The Gaza-Israel war terminology: implications for translation pedagogy (Al-Jarf, 2024k).*

- **Studies on pronunciation errors in non-interpreting contexts** as follows: *systematic review of studies on pronunciation instruction and practice in L2 (2005–2025) (Al-Jarf, 2026); faulty consonant gemination in the pronunciation of English biomedical terms by Arab healthcare professionals (Al-Jarf, 2025g); mapping pronunciation errors in English silent consonants: a corpus-based study of Saudi EFL undergraduates (Al-Jarf, 2025j); Are Arabic YouTube videos narrated by artificial intelligence suitable for training foreign students in listening skills Al-Jarf, 2026p); vowel pronunciation errors in English biomedical terminology by Arab healthcare professionals (Al-Jarf, 2025q); proper noun pronunciation inaccuracies in English by educated Arabic speakers (Al-Jarf, 2022i); text-to-speech proper noun pronunciation inaccuracies software for promoting EFL freshman students' decoding skills and pronunciation accuracy (Al-Jarf, 2022m); YouTube videos as a resource for self-regulated pronunciation practice in EFL distance learning environments (Al-Jarf, 2022o); 15 problems in English pronunciation by EFL college students (Al-Jarf, 2021a); improving students' pronunciation with online videos (Al-Jarf, 2013a) and YouTube pronunciation videos in the EFL classroom (Al-Jarf, 2013c).*

- **Studies on how to teach translation, not interpreting** such as *efficiency in teaching translation courses (Al-Jarf, 2010a); Translation students' online discussion forums (Al-Jarf, 2009b); Technology integration in translator training in Saudi Arabia (Al-Jarf, 2017b); and Online collaboration in translation instruction among students and instructors (Al-Jarf, 2008).*

- **Studies on AI translation errors**: *AI translation of full text Arabic research articles: The case of educational polysemes (Al-Jarf, 2025a); AI translation of the Gaza Israel war terminology (Al-Jarf, 2025k); Can Artificial Intelligence (AI) translate Arabic abu-brand names with different prompts (Al-Jarf, 2025c); Copilot's English translation of contrastive emphatic negation in Arabic discourse: An analytical study (Al-Jarf, 2025d); Copilot vs DeepSeek's translation of denotative and metonymic abu and umm animal and plant folk names in Arabic (Al-Jarf, 2025e); DeepSeek, Google Translate and Copilot's translation of Arabic grammatical terms used metaphorically (Al-Jarf, 2025f); Google Translate then and now: Translations from five languages into English and Arabic (2012–2025) (Al-Jarf, 2025h); Human vs AI translation of common names of chemical compounds: A comparative study (Al-Jarf, 2025i); AI translation of the Gaza-Israel war terminology (Al-Jarf, 2025b); Translation of Arabic expressions of impossibility by AI and student translators: A comparative study (Al-Jarf, 2025l); translation of Arabic folk medical terms with om and abu by AI: A comparison of Microsoft Copilot and DeepSeek (Al-Jarf, 2025m); translation of English and Arabic "sleep" terms and formulaic expressions by Artificial Intelligence: A comparison of Copilot and DeepSeek (Al-Jarf, 2025n); translation of zero expressions by Microsoft Copilot and Google Translate (Al-Jarf, 2025o); translation of medical terms by AI: A comparative linguistic study of Microsoft Copilot and Google Translate (Al-Jarf, 2024p).*

- **Studies on other translation issues** as: *emerging political expressions in Arab spring media with implications for translation pedagogy (Al-Jarf, 2022c) and multiple Arabic equivalents to English medical terms: translation issues (Al-Jarf, 2018c).*

- **Studies on translation tools** as: *How to use a translation memory (Al-Jarf, 2011a) and How to Use the OmegaT translation memory (Al-Jarf, 2009a).*

- **Studies on translator employment** as: *Unemployed female translators: Causes and Solutions (Al-Jarf, 1999); and the Pandemic Job Market from the Perspective of Female Languages and Translation College Graduates in Saudi Arabia (Al-Jarf R. (2022n).*

- **Studies on dictionaries.** E.g.: *Specialized dictionary mobile apps for students learning English for engineering, business and computer science (Al-Jarf, 2022j); Electronic Dictionaries in Translation Classrooms In Saudi Arabia (Al-Jarf, 2001); Online Arabic-English-Arabic Specialized Dictionaries (Al-Jarf, 2014a; Al-Jarf, 2011b).*

- **Non-empirical interpreting guides** such as: Note-taking in consecutive interpreting.

1.3 *Corpus Characteristics*

The corpus for this systematic review consists of fifteen empirical studies published between 2000 and 2022, all focusing on English–Arabic and Arabic–English interpreting pedagogy, performance, and competence. All the studies were conducted within the context of Saudi Arabian higher education, specifically targeting undergraduate student-interpreters operating within English-Arabic and Arabic-English language pairs. This homogenous setting provides a controlled environment for analyzing pedagogical evolution and student performance over two decades of firsthand academic instruction. The studies were organized into four thematic clusters representing the major research directions in the field: curriculum design, technology-enhanced interpreting training, interpreting difficulties and performance problems, and correlates of interpreting competence. Cluster 1 includes four studies examining pedagogical models such as LI, tourism interpreting, collaborative learning, and teacher–learner alignment. Cluster 2 comprises three studies addressing the integration of digital tools—including TTS systems, multimedia labs, and global-events-based materials—into interpreting instruction. Cluster 3 contains three studies investigating micro-level performance challenges such as pronunciation errors, semantic transfer problems, and L1/L2 interference. Cluster 4 includes five studies exploring macro-level interpreting competence, directionality effects, background knowledge, and the relationship between interpreting and other linguistic or translation skills. Across the corpus, data collection methods included interpreting performance tests, audio recordings, error analysis, questionnaires, interviews, and correlational designs, providing a multi-layered view of interpreting performance and training needs.

1.4 *Data Extraction and Synthesis*

Data extraction followed a unified protocol to ensure consistency across the fifteen included studies. For each study, information was collected on publication year, research objectives, instructional focus, participant characteristics, learning context, data collection instruments and technological tools deployed (where applicable), the specific interpreting skill or construct examined, and the main findings and conclusions. After extraction, a thematic synthesis approach was applied to integrate the results within and across the four clusters. Additional fields categorized each study's alignment with one of the four predefined thematic clusters to ensure analytical consistency. The synthesis focused on identifying how pedagogical models shape interpreting

instruction, how technology supports or enhances training, and how performance-related factors such as error patterns, directionality, and background knowledge contribute to interpreting competence. By comparing converging and diverging patterns across studies, the synthesis generated a coherent understanding of the field's current state and highlighted the conceptual and methodological gaps that inform the Discussion section.

Given the methodological heterogeneity of the corpus, which spans pedagogical interventions, cognitive analyses, and assessment-focused investigations, a combined qualitative and narrative synthesis approach was employed. Studies were compared both within and across clusters to identify convergent themes, developmental patterns, and conceptual linkages. The synthesis traces the evolution of the author's research trajectory since 2000, illustrating how early foundational work on interpreting instruction expanded from qualitative pedagogical frameworks into quantitative correlational analyses, and subsequently into assessment-oriented and cognitively grounded investigations. Ultimately, this synthesis emphasizes conceptual integration, highlighting how these studies collectively contribute to a comprehensive understanding of EFL interpreting competence across instructional, cognitive, and technological dimensions.

1.5 *PRISMA Flow Description*

The selection and filtration process of the corpus followed the Preferred Reporting Items for SRs and Meta-Analyses (PRISMA) guidelines, adapted for a systematic self-review. A comprehensive initial search of the author's complete publication repository and academic archives yielded a total of 68 records published between 2000 and 2026. During the initial identification stage, titles, abstracts and full texts were screened against pre-established inclusion and exclusion criteria. Studies were excluded if they were duplicates, investigated student-translators' written lexical, syntactic, and metaphorical errors, examined the performance and translation accuracy of artificial intelligence models, addressed general EFL pronunciation issues, YouTube-assisted audio learning, or AI-narrated pronunciation in non-interpreting contexts, broader curriculum or professional tools, institutional linguistics programs and grade evaluation trends, lexicography, mobile dictionary applications, computer-assisted translation tools and translation memories, written translation instruction, translator job market, and non-empirical instructional guide on CI. Following this rigorous and multi-staged exclusion process, full texts of the remaining studies were then assessed against the inclusion criteria, which required an empirical design, a focus on English–Arabic or Arabic–English interpreting, and relevance to training, performance, or competence. Fifteen studies met all criteria and were included in the final synthesis. These studies were subsequently categorized into the four thematic clusters described in Section 2.1, forming the analytical structure of the review. The 15 studies were included in the corpus for narrative synthesis across the four thematic clusters.

4. Results

4.1 *Study Characteristics*

Cluster 1: Curriculum Design and Pedagogical Approaches to Teaching Interpreting

1) ***How to Teach Liaison Interpreting to Beginners (Al-Jarf, 2007d)***
2) ***Bridging The Gap Between Teacher and Learner in Liaison Interpreting (Al-Jarf, 2000a)***
3) ***Teaching Interpreting for Tourism Purposes (Al-Jarf, 2021c)***

These studies present a structured program for teaching liaison interpreting (LI) to fifth-semester translation students at the College of Languages and Translation (COLT), all of whom were enrolled in their first LI course and had no prior interpreting or translation training. The course, taught two hours per week over 13–14 weeks, aims to train students to listen to a question in Arabic and render its meaning in English, then listen to the answer in English and render it in Arabic—without preparation, topic familiarity, or note-taking. Instruction follows a graded sequence of exercises, including breathing techniques, memory training at the word, sentence, and paragraph levels, shadowing, paraphrasing, substitution drills, same-language interpreting, and summarizing sentences and paragraphs. Students proceed from interpreting isolated words and sentences to short conversations and full interviews, beginning with familiar topics and gradually moving to more complex and varied subject matter.

In the tourism-focused model Teaching interpreting for tourism purposes, students follow the same graded progression but with tourism-specific materials. They interpret familiar and easy tourism topics before advancing to more specialized sub-topics. Training incorporates multimedia resources such as podcasts, documentaries, and TED Talks, interpreted bidirectionally in a language laboratory. Role-play simulations in teams of three or more are used extensively, and students may also conduct on-site interpreting or commentary at local tourist attractions.

Across the studies, weekly training typically combines one laboratory session and one role-play session. Students practice interpreting multiple dialogues within a single subject field for one to two weeks, alternating between English-dominant and Arabic-dominant dialogues. The studies describe in detail the training materials, instructional stages, learning environments, teaching strategies, and assessment procedures used to evaluate interpreting performance.

4) Collaborative Teaching and Learning in Liaison Interpreting (Al-Jarf, 2003)

The interpreting course was delivered through three complementary modes—lab practice, home practice, and classroom simulation—designed to build students' competence in LI through progressive, collaborative, and meaning-focused training. In the language lab, students interpreted taped or teacher-read dialogues without preparation, developing immediate comprehension and rapid transfer skills. At home, they extended their exposure by observing professional interpreters, watching news in both languages, and practicing LI with peers. In the classroom simulation (collaborative learning), the students worked in triads to conduct researched, topic-based mock interviews that mirrored real interpreting encounters. Through this collaborative practice, students learned to manage the interaction, set the floor, conclude dialogues, listen for sense rather than words, store units of meaning, predict content, infer topics, ignore redundancies, and paraphrase difficult segments before rendering them. They were trained to visualize events, activate prior knowledge, and convey the gist when faced with lexical or grammatical challenges. To support domain knowledge, basic terminology in fields such as medicine, law, politics, and computer science was introduced before interpreting specialized dialogues. Throughout the process, the instructor modeled interpretations, monitored individual performance, and provided targeted feedback on slips, errors, and extralinguistic aspects, while keeping note-taking to a minimum to reinforce listening and meaning-processing skills.

Cluster 2: Technology in Interpreting Training

5) Integrating Current Global Events and Technology in Interpreting Practice (Al-Jarf, 2022g)

This study proposes the integration of current global events such as themes related to the COVID-19 Pandemic, Olympic games, natural disasters, earthquakes in Japan, refugees, terrorism, racism, the Russia-Ukraine conflict, Palestinian-Israeli conflict, War on Gaza, human rights, women empowerment, global warming, and any other topic with which the students are familiar. The instructor can select English and Arabic online videos, TED Talks and podcasts from the BBC, CNN, RT, DW or Al-Jazeera websites to be interpreted by the students. The students practice interpreting with headsets on in a multimedia language lab. They watch a video or a TED Talk or listen to a podcast about a selected topic. They listen only once, whether in part or in full, then they interpret the spoken text orally without prior preparation, without checking the dictionary for the meaning of difficult words. They practice interpreting from L2 to L1 and from L1 to L2 in the same class session. The students start interpreting short, easy texts with familiar topics. The texts increase in length, difficulty level and topic familiarity. The students should not take notes while listening, nor translate anything on paper and read it. They listen for meaning, not discrete words. To expand the students' lexical knowledge, the instructor gives a set of basic terminology related to the global topic to be interpreted. To develop the students' world knowledge, they watch, listen to, or read about a topic in L2 and L1 on their own out of class.

6) Text-To-Speech Software as a Resource for Independent Interpreting Practice by Undergraduate Interpreting Students (Al-Jarf, 2022l)

This article proposes a model for integrating text-to-speech software (TTS) in students' interpreting training and practice. It shows the aims of the model, the definition of TTS, the advantages of using TTS, how to search for TTS, instructional stages with TTS, and the interpreting instructor's role. The students can use TTS software online; download it to their laptop, use a Google Chrome extension to listen to webpages, online ebooks, Google Docs, webpages, and emails; or use a TTS mobile app. Practicing interpreting with TTS starts with introducing students to the TTS, how to copy and paste a text in the text area block, choosing a male or female reader, American or British accent, and reading speed. The students practice interpreting with TTS on their own, out of class. They listen and interpret without looking at the screen. They practice different interpreting modes (simultaneous, consecutive, liaison and sight interpreting). They can take notes only in consecutive and SI. In sight interpreting, they interpret while reading the text from the screen silently without listening to the text being read. They practice individually, in pairs or small groups where they can listen to each other's interpreting and provide feedback ad comments on the quality and errors. The instructor serves as a facilitator. She can help the students find and download TTS that meet their needs and may select texts and exercises for the students to practice. She follows up with the students to make sure they are making the best use of the TTS software.

7) Feasibility of Digital Multimedia Language Labs for Interpreting Instruction as Perceived by Interpreting Instructors in Saudi Arabia (Al-Jarf, 2021b)

COLT has installed 4 multimedia language labs (MLLs) used for teaching listening and interpreting courses. Each MLL consists of a teacher's station and 40 student stations each with a computer, headsets, and an audio box. The MLL software consists of XClass, a multimedia classroom management software, a Digital Language Lab Software (DLL) software for improving the students' oral listening skills, and WaveLab Mastering and Audio Editing Software. The presentation aims to find out whether the MLL is feasible for interpreting instruction and factors that affect lack of utilization of MLLs in interpreting instruction at COLT based on the instructors' views. A sample of 10 interpreting instructors and an IT specialist was interviewed. It was found that only 20% use the MLL in interpreting instruction (simultaneous and sight interpreting). By contrast, 80% use the MLLs as a classroom, use the speakers, text on a flash drive and MP3 players. They believe that MLLs are not suitable for teaching consecutive and LI. They reported hardware and software problems, instructor-related, student-related, and technical support

issues. The study concluded that normalization and attitude change towards new technology, hands-on practice, and availability of technical support on site are crucial in adapting the MLLs to interpreting instruction.

Cluster 3: Interpreting Difficulties & Performance Problems

8) Student-Interpreters' Foreign Proper Noun Pronunciation Errors In English-Arabic and Arabic-English Media Discourse Interpreting (Al-Jarf, 2022k)

A corpus of foreign Proper Noun pronunciation errors was collected from interpreting tests and in-class practice. Error analysis showed that student interpreters have difficulty identifying and discriminating one or more phonemes in foreign Proper Nouns such as Rio di Janeiro, Paraguay, Abuja, Scandinavia, Missouri, Helsinki, Crimea, and Al Gore, whether such words were heard in English or Arabic. The students produced (made up) nonsense words that rhyme with the unfamiliar source words as in *Dagos, *Dados, *Dabos instead of Davos; *lizouri, *rozouri, *kansouri, *mansouri instead of Missouri; and *Scinavia for Scandinavia. Sound analogy was also used in producing equivalent to unfamiliar Proper Nouns. Volcanoes and *burkini were provided instead of Balkans and *NADO for NATO. They reduced Proper Nouns as *Buja instead of Abuja, United *State, *Izheimer, *Parkins, *Bloomber probably because of the word length and poor short-term memory. Phonemes were changed and substituted by a longer or shorter vowel, by another consonant or syllable (Dracula /dracola/, *snab shat, *Uzbakistan, *foks fagon, Ukraine /ʊkrɜːrɪə/). The Arabic pronunciation was retained and overgeneralized (Eiffel Tower /iːfəl/ or /iːvəl/, *Ardoghan, *Anadol, and *Athina). A vowel was inserted to break the consonant clusters in *Beligrade, *Bangaladesh, *Barazil, *Danimark, *Shangahai, *Tarafalgar. Syllables were reversed in *Serbrenica. Most pronunciation errors in interpreting are attributed to lack of knowledge of Proper Nouns commonly occurring in the media. Knowledge of the similarities and differences in Proper Noun pronunciation in English and Arabic and extra practice using online videos, podcasts, mobile apps, and TED Talks are needed in LI instruction.

9) What Instructors and Students Should Know About Interpreting Problems (Al-Jarf, 2015)

A corpus of English-Arabic and Arabic-English errors was collected from in-term tests and final exams of consecutive & Liaison interpreting I & II that the author taught to level 5 & 9 students over several semesters. Analysis of the error data showed that students have 3 types of interpreting problems: (i) Phoneme identification problems, (ii) Listening comprehension problems, (iii) Meaning transfer problems. The students utilize different faulty strategies in interpreting, especially in source words which have one-to-many equivalents (cooperate & collaborate اعلان). They tend to overgeneralize the equivalent they know to all contexts (develop, system, base, memory, association), not the one suitable for a particular context/domain (chemical plants), although each shade of meaning has a different equivalent. They resort to literal, word for word translation and use sound analogy in producing equivalents (Corporation & cooperation). Faulty interpreting of words may be due to inadequate L1 competence such as the availability of different Arabic designations for 'parliament' and different designations used in American and British English for (وكيل وزراة الخارجية الامريكي); lack of proficiency in EFL, i.e. limited vocabulary knowledge (*technical & technological; commission & committee*); unfamiliarity with specialized meanings (*chemical plants*) and commonly used equivalents for 'affairs; resources'; lack of world knowledge (exchange programs; Rand Corporation) and others. The study recommends that interpreting instructors develop students' vocabulary knowledge, word knowledge accuracy, schemata and world knowledge, metacognitive skills, i.e. thinking processes while interpreting, word and context analysis skills, i.e., using semantic and structural contextual clues; and identifying the domain in which the polysemous word is used.

10) L2/L1 Meaning Transfer Errors by Student-Interpreters (Al-Jarf, 2013b)

Analysis of the interpreting error data showed that student interpreters experienced substantial difficulty with L2/L1 meaning transfer, particularly when interpreting unfamiliar chemicals, diseases, organizations, acronyms, political posts, and measurement units. Overall, 75% of errors consisted of producing nonsense equivalents, 14% involved giving a familiar rhyming word, and 10% involved reductions, with additional cases of phoneme substitution. Meaning-transfer problems were evident in interpreting media reports: 66% of participants interpreted WHO as the English question word rather than the World Health Organization, ignoring contextual cues, while 40% recognized the domain of FAO but failed to provide the correct Arabic equivalent. Errors also reflected confusion with polysemous words, such as interpreting inflated using economic or literal meanings rather than the intended contextual meaning. Questionnaire-interviews revealed inadequate L1 competence, as students were unfamiliar with Arabic equivalents for major organizations and political posts, and limited L2 vocabulary, including terms such as European Union and Universal Declaration of Human Rights. Students also overgeneralized political titles across countries, misinterpreted proper nouns (e.g., rendering Athina instead of Athens), and struggled to select context-appropriate meanings for polysemous words. The error patterns revealed several strategies: producing invented rhyming words, relying on the only accessible meaning of a polysemous term, literal translation, overgeneralization of naming patterns, and using erroneous equivalents—all of which indicate insufficient lexical knowledge, weak contextual processing, and limited awareness of cross-cultural terminology.

Cluster 4: Correlates of the Interpreting skills

11) English-Arabic and Arabic-English Interpreting Competence of Undergraduate Student Interpreters: A Comparative Study Of Directionality (Al-Jarf, 2022d)

12) English-Arabic and Arabic-English Interpreting Skills: Same or Different? (Al-Jarf, 2007c)

In each study, two samples of students majoring in translation at the COLT participated in the study. The beginner group consisted of 95 students in their fifth semester of the translation program and were enrolled in their first Liaison Interpreting course which the author taught. The beginner group never had any translation or interpreting training before. The advanced group consisted of 105 students in their ninth semester of the translation program. They were enrolled in their second LI course that the author taught. Advanced students did not take the first LI course with the author. They were taught interpreting I course by another instructor who dictated the text, the students translated it on paper and read it out loud Data were collected over a period of 4 semesters. The English-Arabic and the Arabic-English interpreting scores for both groups were collected from the final examination. Each final exam consisted of a set of Arabic interviews and a set of English interviews. Each set consisted of several interviews covering different subject fields. For each student, the English-Arabic and Arabic-English scores were converted into percentages. It was found that for the beginner group, the median English-Arabic score was 62.5% and the Arabic-English median score was 61.5%. For the advanced group, the English-Arabic median was 65% and the Arabic-English median was 58%. There were strong significant correlations between the students' English-Arabic and Arabic-English interpreting scores (.64 for level 5 and .82 for Level 9). ANOVA also revealed significant differences between the level 5 and Level 9 mean scores ($F=3.9$, $P<.000$ & $F=7.42$, $P<.000$ respectively) reflecting significant differences in their ability to interpret from English to Arabic and Arabic to English. These findings indicate that while the two interpreting directions are strongly related, they differ in difficulty and variability, and that proficiency level significantly affects interpreting performance. Beginners outperformed advanced students because they received efficient, fully oral, gradual interpreting training, whereas the advanced group had already developed a deeply rooted write-and-read habit in their first interpreting course that hindered fluency.

These two studies also highlight important differences between instructional techniques used for training the students in LI. Level 5 students, who were trained through a fully oral, graded, meaning-focused model—characterized by spontaneous reformulation, paraphrasing, visualization, and minimal note-taking, consistently outperformed level 9 students, who were taught LI through text-based methods in which the source text is dictated, translated on paper, and then read aloud. The latter approach does not reflect authentic interpreting processes; rather, it resembles written translation followed by oral reading, which suppresses real-time processing and encourages literal transfer. Although level 9 students were taught by the author in the second LI course using the same instructional techniques as Level 5 students, the dictation, written translation and reading aloud habit was deeply rooted and could not be unlearned using an oral approach in the advanced course. The findings across the correlational studies therefore reinforce the superiority of oral, process-based instruction for developing genuine interpreting competence.

13) Effect of Background Knowledge on Auditory Comprehension in Interpreting Courses (Al-Jarf, 2018a)

The study investigates how background knowledge and unfamiliar vocabulary affect Saudi EFL interpreting students' auditory discrimination and comprehension of media reports in English and Arabic. Analysis of an interpreting test with 74 senior translation majors revealed that students struggled to discriminate phonemes and interpret unfamiliar foreign proper nouns—such as names of countries, cities, politicians, organizations, acronyms, chemicals, and diseases—leading to numerous auditory and semantic errors. The students often produced nonsense words, relied on sound analogy, used literal translation, overgeneralized Arabic terms, or selected incorrect meanings of polysemous words. Questionnaire-interviews confirmed that these difficulties stemmed from limited world knowledge, inadequate L1 and L2 vocabulary, and unfamiliarity with political and institutional terminology across countries. A significant correlation was found between vocabulary knowledge and interpreting accuracy. The study concludes that enriching students' background knowledge, through exposure to world news, note-taking, and summarizing activities—can significantly improve their auditory discrimination and interpreting performance.

14) Correlates of The Interpreting Skill (Al-Jarf, 2007a)

The study investigated whether interpreting proficiency is associated with listening comprehension and speaking ability among 36 Arabic speaking translation majors enrolled in their first LI course at COLT. Using end of semester achievement scores from three courses taught by the same instructor—listening, speaking, and interpreting—the analysis showed that students' performance clustered closely across the three skills, with typical scores in the mid-70s. Strong, significant correlations were found between interpreting and speaking ($r = .80$) and between interpreting and listening ($r = .49$). ANOVA results revealed no significant differences among the mean scores of the three skills. These findings suggest that students with strong listening and speaking abilities tend to perform better in interpreting, while weaker oral skills are associated with weaker interpreting performance. The study concludes that improving students' listening and speaking proficiency is likely to enhance their interpreting skills.

15) Are Translation and Interpreting Skills Related? (Al-Jarf, 2007b)

36 senior students (in level 9) majoring in translation at COLT were taught Liaison Interpreting II and the oil translation courses by the author. The interpreting and translation data were collected at the end of the semester. Each score represented the composite score of the course which consisted of 2 interm tests and a final exam. It was found that in the oil industry course, the median score was 69.5% compared to 65% in the LI course. There were wide variations among the students in their translation and interpreting scores and hence translating and interpreting abilities as revealed by the standard deviation (15.45 for translation & 12.33 for interpreting) and standard error values (2,73 & 2.18 respectively). Results showed that the translation and interpreting courses are related. The correlation coefficient between the translation and interpreting skills was .72 and was significant at the .01 level. However, results of the T-test showed no significant differences between the translation and interpreting mean scores (T = 1.64). It can be inferred that a student who is a good translator is also a good interpreter and a student who is a poor translator is also a poor interpreter, which means that both translation and interpreting share and require common skills.

5. Discussion

5.1 Meta-Conclusion

Taken together, the fifteen studies in this corpus converge on a coherent picture of interpreting as a complex, teachable, and strongly language- and knowledge-dependent skill. Across the four clusters, the findings consistently show that structured, fully oral, and gradual training models can enable beginners with no prior interpreting experience to perform LI tasks with increasing fluency and accuracy. At the same time, the studies on difficulties, error patterns, and correlates of performance demonstrate that interpreting competence is constrained by students' L1 and L2 lexical resources, background knowledge, and oral language skills, rather than by "interpreting technique" alone. Directionality studies further reveal that English–Arabic and Arabic–English interpreting are strongly related but not identical in difficulty, with Arabic–English often emerging as more demanding, especially at higher proficiency levels. Overall, the corpus supports a meta-conclusion that effective interpreting instruction must integrate graded oral practice, domain and world knowledge building, and systematic development of listening, speaking, and lexical competence in both languages.

5.2 Meta-Interpretation

At a deeper interpretive level, the studies suggest that the success of the pedagogical models in Cluster 1 is not merely due to the sequence of exercises, but to a consistent orientation toward meaning-focused, note-free, and interaction-based training. The emphasis on breathing, memory, shadowing, paraphrasing, and role-play creates conditions in which students learn to process speech in real time, store units of meaning, and reformulate spontaneously—skills that are repeatedly shown in Clusters 3 and 4 to be central to competent performance. The technology-focused studies in Cluster 2 indicate that digital tools such as TTS and multimedia labs are powerful enablers of independent practice and exposure, yet their impact depends heavily on instructors' attitudes, institutional support, and students' willingness to engage in self-directed learning. The error analyses in Cluster 3 reveal that many "interpreting problems" are in fact manifestations of deeper lexical, conceptual, and world-knowledge gaps, as students resort to invented rhyming forms, literal translation, or overgeneralization when they lack robust mental representations of proper nouns, acronyms, and specialized terminology. Finally, the correlational studies in Cluster 4 show that interpreting proficiency is tightly linked to listening and speaking skills, as well as to translation ability, reinforcing the interpretation that interpreting competence is an integrated outcome of broader oral and linguistic development rather than a narrowly isolated skill.

5.3 Cross-Cutting Insights

Several cross-cutting insights emerge when the four clusters are viewed together. First, there is a strong and recurring connection between training design and error profiles: programs that are fully oral, gradual, and meaning-oriented tend to produce students who can manage interaction, anticipate content, and cope with lexical gaps more strategically, whereas students with weaker exposure and less structured practice exhibit higher rates of nonsense equivalents, misinterpretation of acronyms, and reliance on literal translation. Second, background knowledge and vocabulary repeatedly surface as critical determinants of performance, whether in media-based interpreting tasks, pronunciation of foreign proper nouns, or comprehension of institutional and political terminology. Third, directionality and proficiency level interact in non-trivial ways: while beginners may show comparable performance in both directions under intensive, well-scaffolded training, advanced students can still find Arabic–English interpreting more challenging, suggesting that increased exposure to translation and interpreting courses does not automatically resolve asymmetries between L1>L2 and L2>L1 processing. Fourth, technology appears as both an opportunity and a missed potential: when used creatively (e.g., TTS, curated global events, lab-based practice), it expands practice time and input variety; when underutilized or poorly supported, it remains peripheral and fails to transform classroom practice. These cross-cluster patterns point to the need for integrated models that align curriculum design, technological affordances, and explicit work on lexical and world knowledge.

4.4 *Implications*

The findings of this SR carry several important implications for interpreting pedagogy and curriculum design in Arabic–English programs. First, curricula should institutionalize fully oral, graded training sequences similar to those described in Cluster 1, ensuring that students progress from controlled, short units to longer, more complex and less familiar texts, while maintaining a focus on meaning rather than written support or note-taking at early stages. Second, given the strong correlations between interpreting, listening, and speaking, language programs should treat oral proficiency courses and interpreting courses as mutually reinforcing, with explicit coordination of objectives, materials, and assessment criteria. Third, the persistent role of lexical and world-knowledge gaps in error patterns implies that interpreting courses must systematically integrate terminology building, media exposure, and background knowledge enrichment, particularly in domains that dominate contemporary discourse (e.g., politics, health, global crises). Fourth, the mixed picture regarding technology suggests that institutions need to move beyond merely installing multimedia labs or recommending TTS tools; they should provide hands-on training, technical support, and pedagogical guidelines so that instructors and students can meaningfully embed these tools into regular practice. Finally, assessment practices should reflect the multidimensional nature of interpreting competence by evaluating not only accuracy, but also interaction management, strategic behavior, and the ability to cope with unfamiliar items.

4.5 *Positioning This SR Within the Global Interpreting SRs*

This systematic review occupies a distinct position within global interpreting SRs, which predominantly focus on conference interpreting, European language pairs, or cognitive processing models. In contrast, it centers on LI in Arabic–English educational settings, offering a sustained examination of undergraduate training within a Saudi institutional context. Rather than synthesizing multi-author, multi-institutional corpora, this SR provides a coherent, longitudinal account of a single research program that has systematically explored curriculum design, technology integration, error patterns, and competence correlates over more than two decades.

By foregrounding oral, gradual, and meaning-focused training models, this SR aligns with international findings on process-based pedagogy, yet contributes a unique perspective by documenting how entrenched written-translation habits can impede fluency—an insight rarely addressed in global SRs. It also highlights issues underrepresented in mainstream SRs, such as English-Arabic and Arabic-English interpreting, proper-noun pronunciation in Arabic–English media discourse, the role of world knowledge in EFL interpreters' performance, and the value of technology-mediated practice in low-resource contexts.

Synthesizing evidence from fifteen studies spanning the full ecosystem of interpreting instruction and performance, this SR bridges gaps left by global reviews that prioritize simultaneous interpreting, medical or conference settings, and European language pairs, leaving LI and Arabic–English combinations largely overlooked. In doing so, it positions Arabic–English liaison interpreting as a valuable empirical site for understanding how training design, linguistic proficiency, and cognitive load interact in shaping interpreting performance. The review therefore complements and expands global SRs by offering evidence from a linguistically and pedagogically distinctive context, contributing new insights to the broader field of interpreter education.

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

This SR extends the author's long-standing research trajectory on interpreting pedagogy by synthesizing themes that previously appeared across her SRs on reading, pronunciation, translation, mobile-assisted learning, digital environments, and ESP instruction. In earlier reviews, interpreting was often examined indirectly—as a skill shaped by vocabulary depth, listening comprehension, world knowledge, and exposure to authentic discourse. The present SR brings these strands together by focusing explicitly on liaison interpreting and mapping how training design, technology integration, performance difficulties, and correlates of interpreting competence interact within a single domain. It builds on earlier findings emphasizing gradual skill development, meaning-focused processing, and the avoidance of written mediation, while adding new evidence on entrenched habits, directionality effects, and the cognitive load associated with Arabic–English interpreting. This SR also connects organically to the author's broader body of work on interpreting and translation pedagogy. The current SR has examined interpreting training models, error analysis, and the integration of technology and media resources into language and translation teaching. It consolidates and reorganizes that empirical work into a clustered, meta-analytic narrative, showing how studies on LI, tourism interpreting, TTS-based practice, multimedia labs, and correlational designs collectively articulate a coherent pedagogical vision. In doing so, it takes the findings to a higher-level synthesis that clarifies how the author's research program has evolved—from designing and trialing individual courses to theorizing the interplay between curriculum, technology, error patterns, and competence. Thus, this SR functions as a culmination and a connector: it situates the author's empirical studies within a broader methodological and conceptual framework, demonstrating how a two-decade research program has contributed to understanding interpreting as a multidimensional skill shaped by instructional quality, linguistic resources, and cognitive readiness.

4.7 *Limitations*

Despite its contributions, this SR has several limitations that should be acknowledged. First, the entire corpus is author-bounded, focusing exclusively on the empirical and pedagogical investigations conducted by a single researcher. Although this constraint provides an unparalleled, highly reflexive look at a unified instructional philosophy, it inherently limits the broader generalizability of the findings across different institutional cultures, pedagogical traditions, or researcher perspectives.

Second, the corpus is restricted to studies conducted within a single institution in Saudi Arabia and the English and Arabic language pairs, with all studies authored by the same researcher. Consequently, the specific error typologies, directionality constraints, and institutional laboratory challenges identified may reflect localized curricular structures and cultural learning habits rather than universal cognitive barriers in interpreter training. While this yields a high degree of internal coherence and comparability, it limits the generalizability of the findings to other institutions, countries, program types and language pairs.

Third, the focus is predominantly on LI and educational settings, with less attention to other interpreting modes (e.g., community, court, or high-stakes conference interpreting) and to professional interpreters' performance. This is because the author never taught SI, taught CI only once, but taught liaison interpreting I & II several times. Specific types of (LI) are not offered in the translation and interpreting program at COLT.

Fourth, most studies rely on course-based achievement data, interpreting tests, and error analyses, with relatively limited use of longitudinal tracking, control groups, or experimental manipulation of instructional variables. The pedagogical interventions and correlational analyses are grounded primarily in qualitative frameworks and descriptive statistics rather than randomized controlled designs.

Fifth, the pedagogical interventions and correlational analyses within the corpus rely primarily on qualitative frameworks, descriptive statistics, and non-experimental designs rather than randomized controlled trials. In the context of oral interpreting pedagogy, implementing a strict experimental control design presents ethical and logistical challenges. Unlike discrete language skills such as reading or grammar, interpreting involves multi-layered, overlapping cognitive variables that are exceptionally difficult to isolate in vivo. In addition, strict experimental manipulation was precluded by institutional constraints, as the interpreting courses were allocated two instructional hours per week only. Extending practice beyond official hours was unfeasible due to students' heavy institutional schedules and the ethical imperative to avoid academic overload or programmatic disparity among student cohorts.

4.8 Methodological Justification: The Primacy of Product-Oriented Error Analysis

Within the epistemological framework of Translation and Interpreting Studies (TIS), experimental designs are neither inherently superior nor universally applicable. Methodological fitness dictates that the choice of research design must align with the cognitive and performative realities of the discipline. In oral interpreting, where multi-layered, real-time cognitive variables overlap continuously, traditional experimental manipulation often reduces complex cognitive gisting to artificial metrics, stripping the data of its ecological validity. Consequently, this 22-year research program consistently prioritized product-oriented Error Analysis over experimental constraints. Errors are not merely random failures; they are highly diagnostic empirical artifacts that directly reflect the real-time cognitive processing, working memory capacity, and linguistic automated mechanisms of the student-interpreter. No matter how innovative or structurally sound an instructional methodology is, human performance under intense temporal constraints will invariably generate errors. Therefore, analyzing the product (the actual interpreted output) yields far deeper pedagogical insights than manipulating the process through artificial control groups. By systematically mapping error typologies—such as phoneme substitutions, sound analogies, and literalisms—this corpus captures the authentic boundaries of student competence. In interpreting pedagogy, diagnosing the exact nature of the performance breakdown via Error Analysis remains the most plausible, ecologically valid, and pedagogically impactful methodology for driving curricular reform.

6. Recommendations & Directions for Future Research

Based on the synthesis of findings across the four clusters, this study offers several recommendations for strengthening interpreting pedagogy and guiding future research in Arabic–English and English-Arabic liaison interpreting. First, interpreting programs should adopt structured, oral, and gradual training models that prioritize meaning-focused listening, spontaneous reformulation, and minimal reliance on written mediation. Evidence across the corpus shows that scaffolded, fully oral training produces more fluent interpreters than text-based approaches or premature exposure to long, complex materials. Second, curricula should integrate systematic development of vocabulary, domain knowledge, and phonological awareness to address persistent pronunciation, comprehension, and meaning-transfer errors. Strengthening these foundational skills reduces reliance on compensatory strategies such as rhyming, analogy, and literal translation. Third, targeted practice is needed in the more challenging Arabic>English direction, with explicit attention to L2 lexical retrieval, syntactic encoding, and real-time processing.

Assessment practices should reflect directionality differences by incorporating balanced tasks that capture asymmetries in cognitive load. Fourth, technology should be integrated meaningfully—not as a substitute for core interpreting processes but as a tool to diversify input, expand exposure, and support independent practice. Multimedia labs, curated online materials, and text-to-speech tools (used cautiously) can enhance training when aligned with oral, process-based pedagogy.

Interpreting instructors can also incorporate a broad spectrum of modern instructional technologies to enrich practice opportunities. These include learning management systems (Blackboard, Moodle, Canvas, Google Classroom), web-conferencing platforms (Zoom, WebEx, Microsoft Teams), interactive online courses, digital corpora, terminology-management tools, podcast platforms, news-aggregation apps, and multimedia annotation tools. AI-assisted text generators may be used to create short practice materials or domain-specific prompts. However, instructors should exercise caution with AI-generated audio, especially in Arabic. Evidence from the author's AI-narrated Arabic videos shows that current Arabic speech-synthesis systems frequently mispronounce words and proper nouns due to the absence of diacritics, making AI-generated Arabic audio unsuitable for interpreting training. Even English AI-generated speech often contains prosodic inaccuracies—unnatural pauses, incorrect stress patterns, and disrupted prosodic units—which may mislead learners who rely on accurate rhythm and phrasing for meaning-focused listening. AI speech synthesis should therefore be used only for supplementary exposure (e.g., varied accents, adjustable speeds), not as a primary model of natural spoken input. Collectively, these technologies create a flexible, multimodal learning environment that supports independent learning and aligns interpreting pedagogy with contemporary digital ecosystems.

For future research, this study recommends expanding beyond a single institutional context through multi-site and cross-institutional designs to examine whether the pedagogical models and error patterns identified here generalize across different Arabic–English interpreting programs. Longitudinal research is needed to track cohorts across multiple semesters to understand how competence develops over time and how early, fully oral, graded training influences later performance in advanced modes. Experimental and quasi-experimental studies could compare different training configurations—such as note-free vs. note-supported instruction or technology-rich vs. technology-minimal environments—to determine which combinations yield the strongest gains. Future work should deepen the process-oriented perspective by incorporating think-aloud protocols, screen-recording, eye-tracking, or interactional analysis to capture how student interpreters process input, manage attention, and deploy strategies in real time. Given the central role of lexical and world knowledge in the error patterns observed, further research is needed on terminology teaching, domain-specific knowledge building, and media-based interventions, particularly in politically and socially dense domains. Comparative studies involving other language pairs and professional interpreters would help distinguish language-pair-specific findings from general properties of interpreting competence. Finally, future research should investigate the development of more linguistically reliable AI-based Arabic speech models and examine how prosodic accuracy affects interpreting performance in EFL contexts.

7. Conclusion

This systematic review synthesizes fifteen empirical studies on Arabic–English liaison interpreting, offering a comprehensive account of how interpreting competence develops within an EFL undergraduate context. Across four thematic clusters—curriculum design, technology integration, performance difficulties, and competence correlates—the findings converge on a central insight: interpreting is a multidimensional oral skill shaped by the interaction of training design, linguistic proficiency, cognitive processing, robust L1 and L2 lexical and world knowledge; and strong listening and speaking skills, rather than as a narrow technical skill that can be developed in isolation.

Evidence from the corpus demonstrates that structured, oral-first, and gradual training models consistently outperform written-based or unsequenced approaches, confirming the pedagogical value of meaning-focused, non-text-bound instruction. Technology emerges as a promising yet underutilized resource; when integrated purposefully, tools such as multimedia labs and TTS-based practice enhance exposure and independent learning, though current AI speech systems—especially in Arabic—remain limited by prosodic and pronunciation inaccuracies. Persistent learner difficulties in phoneme discrimination, proper-noun pronunciation, polysemy, and meaning transfer highlight the need for stronger lexical depth and world-knowledge scaffolding. Correlational evidence further shows that interpreting ability is closely linked to listening, speaking, and translation skills, and that directionality remains a stable factor, with Arabic>English posing a greater cognitive load.

By situating this coherent, context-specific corpus within the broader field of interpreting research, this SR underscores the value of longitudinal, pedagogically grounded inquiry that examines how interpreting is taught, learned, and assessed in real classrooms. The 22-year trajectory documented here traces a clear evolution: from early oral-centric LI and tourism-interpreting pedagogy, to technology-enhanced training, to micro-level error typologies and macro-level statistical correlates. Collectively, these studies demonstrate that interpreting proficiency depends on automated linguistic processing, efficient cognitive-load management, and structured knowledge schemata—factors consistently disrupted by premature reliance on written mediation.

Although bounded by a single institutional context and language pair, the corpus offers a unified blueprint for modern EFL interpreting programs. The synthesis argues that effective interpreter education—particularly in Arabic–English contexts—requires the deliberate harmonization of oral-first pedagogical scaffolds, cognitive-load-aware training, and judicious technological integration. It also calls for broader, multi-site, longitudinal, and process-oriented research to validate and extend current insights. Ultimately, this SR provides an evidence-based foundation for cultivating agile, fluent, and culturally competent student interpreters, and positions Arabic–English LI as a valuable empirical site for advancing the global understanding of how interpreting competence is built.

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ORCID ID: https://orcid.org/0000-0002-6255-1305

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