
RESEARCH ARTICLE

Metaphorical and fixed Expressions in Students' Translation: A Systematic Self-Review of Studies on Error Types, Strategies and Error Sources

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 sought to conduct a systematic review (SR) of the author's research program on student translators' difficulties in translating metaphorical and fixed expressions between English and Arabic. The corpus comprised 12 studies categorized into 3 thematic clusters: General and technical language metaphorical and fixed expressions, and human vs AI translation weaknesses. Across the 12 studies with expressions involving impossibility, kinship (ibn/bint & Om/Abu), numeral, time, dar/bayt, color, binomials, or word + preposition collocations, the students translated fewer than 35% correctly, left many items on the test blank, and relied heavily on literal translation. Expressions similar in English and Arabic were easy, whereas opaque and culture-specific expressions were difficult to translate. In the study on common names of chemical compounds, the students translated fewer than 20% correctly and defaulted to transliteration or literal equivalents. AI outperforms students in accuracy, but also defaults to literal translation, especially when expressions require cultural grounding or conceptual alignment. The translation weaknesses observed across all studies reveal deeper linguistic, cognitive, and cultural factors. Student translators rely on surface level lexical processing rather than conceptual mapping, show limited awareness of how metaphors, metonyms, and set phrases operate in English and Arabic, and demonstrate low tolerance for ambiguity and weak inferencing skills when confronted with opaque expressions. Cultural literacy gaps further hinder performance, as many expressions require familiarity with religious, historical, scientific, or social references. Structural complexity (as in binomials & collocations) interacts with semantic opacity, compounding the difficulty and affecting both meaning and syntactic accuracy. Although AI is more accurate overall, it still struggles with conceptual alignment, often prioritizing direct lexical equivalence and producing culturally awkward or semantically distorted translations. Overall, the corpus indicates that translation difficulties stem not from isolated linguistic gaps but from a systemic lack of conceptual, cultural, and cognitive readiness to handle non literal meaning. The significance of this SR lies in providing the first unified, empirically grounded account of how Arabic English student translators, and AI systems, struggle with non literal meaning across multiple figurative domains, offering a foundation for redesigning translator training, curriculum development, and AI assisted pedagogy.

KEYWORDS

Systematic self-review, Al-Jarf research program, metaphorical expressions, fixed expressions, translation difficulties, student translators, semantic opacity, literal translation, AI vs human translation, English-Arabic translation

ARTICLE INFORMATION

ACCEPTED: 19 June 2026

PUBLISHED: 27 June 2026

DOI: 10.32996/ijls.2026.6.3.3

1. Introduction

In translation studies, the translation of metaphorical and formulaic expressions is considered one of the most challenging areas of the discipline. Because these expressions are highly cultural, semantic, and non-literal, they require cognitive processing and specialized transfer strategies to translate accurately (Ashuja'a, et al. 2019). The core challenge lies in their semantic opacity. Formulaic expressions and metaphors are semantically unpredictable; and their meanings cannot be inferred by translating

individual words¹. Metaphorical expressions also require more processing time to translate when they exploit different cognitive domains between the source and target languages. This search for cross-linguistic mental mapping often results in translation delays, target-text uncertainty, or a significant loss of the original emotional and rhetorical (Su, 2021; Tirkkonen-Condit, 2002).

Although numerous single studies have examined the translation of metaphorical and fixed expressions across various language pairs, most systematic reviews (SRs) in the literature exhibit a significant thematic imbalance as they primarily focus on Artificial Intelligence (AI) and Machine Translation (MT) across macro-level applications. These include fansubbers and audio-visual translation (Castañeda, Aguilar & Toribio, 2025); MT of texts from low-resource languages (Benito-Santiago et al., 2022). benefits and challenges of AI translation tools in translation education (Nguyen et al., 2025); AI in clinical settings and its role in healthcare translation (Genovese et al., 2024; Raïdo, 2024). Even within the English-Arabic language pair, SRs remain heavily skewed toward evaluating MT software performance, procedural technicalities, and algorithmic advancements rather than human cognitive processing, as in SRs on advancing Arabic-English MT (Sidiya et al., 2024); MT evaluation between Arabic and English 2020–2024 (Saeed, 2025); procedures and challenges in using MT in English-Arabic translation (Al Maaytah, Aalzobidy & Alwidyan, 2024; Almaaytah & Alzobidy, 2023).

By contrast, a smaller number of SRs have examined translation studies more broadly such as students' errors in English-Arabic and Arabic-English translation (Al-Jarf, 2026); translation strategies for figurative language in novels (Anisa, 2026); translation techniques of figurative expressions in novel texts (Khalaf & Moindjie, 2026); Chinese-English translation of public signs (Amenador & Wang, 2022); film title translation (Hu, Halina & Zin, 2025); translation strategies of Arabic-Malay religious texts (Ismail et al., 2025).

Despite the growing number of SRs on machine translation, AI-assisted translation, and figurative language in specific genres, no SR has synthesized research on metaphorical and fixed expressions across multiple culturally loaded subtypes, including structural patterns, formulaic expressions, expressions of impossibility, and *folk chemical names*. Moreover, no existing review compares human translation (student translators) with AI translation of these culturally embedded expressions within a single, coherent corpus of studies conducted by the same researcher. This means that the field lacks a unified, culturally grounded synthesis of metaphorical and fixed expressions and a human-AI comparative perspective based on a consistent research program.

To fill this gap, the present study aims to conduct an SR of the author's research program focusing on student translators' difficulties in translating metaphorical and fixed expressions between English and Arabic. The review synthesizes findings across multiple culturally loaded subtypes and highlights patterns in students' strategies, errors, and cognitive challenges. Specifically, the study seeks to answer the following questions: (i) What are the most prevalent types of errors (e.g., semantic, cultural, literal, syntactic) committed by student translators when translating Arabic and English metaphorical and fixed expressions? (ii) What strategies do student translators employ to overcome challenges in translating these expressions, and how successful are they? (iii) What are the primary underlying sources of these errors (e.g., interlingual interference, cultural gaps, overgeneralization)? (iv) How does the error profile and strategy selection of student translators compare to that of Generative AI in translating both general and technical metaphorical expressions?

This study is significant because it provides the first systematic synthesis of a unified research program examining how student translators handle metaphorical and fixed expressions across multiple culturally loaded subtypes in English-Arabic and Arabic-English translation. By integrating evidence from diverse metaphorical expression types, including structural patterns, formulaic expressions, expressions of impossibility, and common names of chemical compounds, the review offers a comprehensive account of the linguistic, cultural, and cognitive challenges that shape students' translation performance. The study also contributes a unique comparative dimension by incorporating human-AI translation findings, thereby revealing how cultural opacity and non-literal meaning are processed differently by student translators and AI systems. It goes beyond traditional error analysis to explore the contemporary human-vs-AI translation realm. It establishes a clear benchmark showing where human cognitive and cultural intuition still triumphs over Large Language Models (LLMs), and conversely, where Generative AI excels (such as precision in technical/chemical fixed expressions). It contributes to the refinement of evaluation frameworks for AI translation. Collectively, this SR advances understanding of non-literal meaning in Arabic-English and English-Arabic translation and provides an empirically grounded foundation for improving translator training, assessment, and curriculum design.

Moreover, this SR is part of a broader, long-term research program in which the author has produced an extensive series of SRs and meta-analyses (MAs) across multiple domains of language education, linguistics, and pedagogy. These prior SRs have synthesized research on social media in EFL teaching and learning (Al-Jarf, 2026a), English for art education (Al-Jarf, 2026b), EFL reading instruction (Al-Jarf, 2026c), educational evaluation (Al-Jarf, 2026d), translation errors (Al-Jarf, 2026f), mobile-assisted language learning (Al-Jarf, 2026g), adult reading practices (Al-Jarf, 2026h), pronunciation instruction (Al-Jarf, 2026i), Arabic reading

¹ Definition and Examples of Semantic Change

pedagogy (Al-Jarf, 2026j), grammar teaching (Al-Jarf, 2026k), electronic searching skills (Al-Jarf, 2026l), global dimensions in L1 school textbooks (Al-Jarf, 2026m), cultural learning in L2 contexts (Al-Jarf, 2026n), vocabulary learning (Al-Jarf, 2026o), specific-skill assessment (Al-Jarf, 2026p), Arabic–English transliteration (Al-Jarf, 2026q), children’s language development (Al-Jarf, 2026r), classroom writing enhancement (Al-Jarf, 2026s), collaborative digital learning (Al-Jarf, 2026t), distance learning during COVID-19 (2026u), mind-mapping strategies (Al-Jarf, 2026v), staffing challenges in EFL programs (Al-Jarf, 2026w), innovative word-formation processes (Al-Jarf, 2026x), interpreting pedagogy (Al-Jarf, 2026y), listening and speaking instruction (Al-Jarf, 2026z), online videos and podcasts for language learning (Al-Jarf, 2026aa), spelling error analysis (Al-Jarf, 2026bb), student autonomy in second language learning (Al-Jarf, 2026cc), AI Arabic translation (Al-Jarf, 2026dd), ESP innovation (Al-Jarf, 2026ee), LMS-supported instruction (Al-Jarf, 2026ff), English–Arabic language dynamics (Al-Jarf, 2026), and linguistic landscapes and signages (Al-Jarf, 2026).

Positioned within this extensive body of systematic inquiry, the current SR contributes a new and distinct dimension by synthesizing research on metaphorical and fixed expressions in students’ translation with a focus on error types, strategies and error sources, a domain not previously reviewed in the author’s earlier SRs. It therefore extends the author’s methodological tradition while opening a new line of inquiry into weaknesses in the translation of metaphorical and fixed expressions by student translators.

2. Conceptual Framework: Defining the Figurative Spectrum

To evaluate translation performance accurately, it is essential to clarify the boundaries between formulaic expressions, fixed expressions, and metaphorical expressions. Although these categories often overlap, each represents a distinct point on the figurative spectrum.

Formulaic expressions²

These are fixed, multi-word phrases that native speakers retrieve from memory as single units rather than building them word-by-word from grammar rules. They are essential for natural fluency, making up a large portion of everyday communication. These expressions vary in form and function. They include the following: (i) Idioms and proverbs with non-literal meanings (e.g., *break the ice*, *bite the bullet*, *birds of a feather flock together*). (ii) Collocations that sound natural only in specific pairings (e.g., *make a decision*, *heavy rain*, *fast asleep*). (iii) Social routines and situational utterances tied to predictable contexts (e.g., *Can I leave a message?* *Nice to meet you*, *See you later*). (iv) Discourse markers that organize interaction or express stance (e.g., *on the other hand*, *as a matter of fact*, *you’ve got to be kidding*). Formulaic expressions are stored as whole chunks. They reduce the brain’s processing load during speech, allowing for faster and smoother delivery. They also convey emotion, social tone, and intent much better than strictly neutral, literal sentences (Van Lancker-Sidtis & Rallon, 2004).

Fixed expressions³

These are also known as phrasemes, are multi-word phrases whose components cannot be freely swapped or altered without sounding unnatural to native speakers. These phrases function as single units of meaning. They are characterized by their word order and specific vocabulary generally remain unchanged. Many have a transparent, literal meaning, while others act as idioms where the overall meaning cannot be guessed from the individual words. Some allow minor changes, such as adjusting the verb tense or pronoun (e.g., *make up your mind* to *made up their minds*)⁴.

Metaphorical expressions⁵

Metaphorical expressions describe one concept in terms of another, creating implicit comparisons without using *like* or *as*. They map meaning from a familiar domain onto a more abstract one, enabling vivid imagery and conceptual clarity. Examples include *a heart of gold*, *time is money*, *my brain is foggy*, *she is a night owl*. Unlike similes, which make comparisons explicit (e.g., *as loud as a zoo*), metaphors assert them directly (e.g., *the classroom was a zoo*). Metaphors enrich discourse, make abstract ideas tangible, and enhance memorability.

The Translation Challenge: Overlapping Opacity

Across languages, these categories frequently intersect, creating layers of semantic opacity. A fixed expression may also be metaphorical; a formulaic sequence may carry cultural meaning that resists literal transfer. Translating such expressions between English and Arabic requires more than lexical substitution—it demands navigating cultural, cognitive, and conceptual mappings.

² https://en.wikipedia.org/wiki/Formulaic_language

³ <https://en.wikipedia.org/wiki/Phraseme>

⁴ <https://www.vaia.com/en-us/explanations/english/lexis-and-semantics/fixed-expressions/>

⁵ <https://en.wikipedia.org/wiki/Metaphor>

Research across linguistics, neuroscience, and AI shows that metaphors shape human thought and computational processing. Translators must therefore choose strategically between literal equivalence, cultural adaptation, or semantic paraphrasing when handling metaphorical content (Adiel & Ahmed, 2016).

3. Methodology

To be included in the corpus, studies had to meet three criteria: (i) the study must be authored by the author; (ii) it must examine translation students' difficulties in translating metaphorical and fixed expressions between English and Arabic, or compare human and AI weaknesses in handling such expressions; and (iii) it must analyze linguistic and cultural challenges, translation strategies, and error sources used by student translators and AI systems. These criteria ensured that the corpus represented a coherent body of empirical research directly relevant to error analysis in figurative translation.

3.1 Study Corpus

The final corpus consists of twelve empirical studies conducted between 2016 and 2025. For analytical clarity, the studies are grouped into three thematic clusters based on text register (general vs. technical metaphorical and fixed expressions) and translation agents (human student translators vs. generative AI models).

Cluster 1: General Language Metaphorical and Fixed Expressions

This largest cluster comprises nine longitudinal studies investigating the translation of figurative, formulaic, and idiomatic expressions in everyday discourse by student translators. The studies include:

- 1) *Expressions of impossibility in Arabic and English: Unveiling students' translation difficulties* (Al-Jarf, 2024a)
- 2) *Equivalence problems in translating ibn (son) and bint (daughter) fixed expressions to Arabic and English* (Al-Jarf, 2023b)
- 3) *Numeral-based English and Arabic formulaic expressions: cultural, linguistic and translation issues* (Al-Jarf, 2023c)
- 4) *time metaphors in English and Arabic: Translation Challenges* (Al-Jarf, 2023d)
- 5) *Arabic and English dar (house) and bayt (home) expressions: linguistic, translation and cultural issues* (Al-Jarf, 2022a)
- 6) *Translation students' difficulties with English and Arabic color-based metaphorical expressions* (Al-Jarf, 2019)
- 7) *issues in translating Arabic om- and abu-expressions* (Al-Jarf, 2017a)
- 8) *translation of English and Arabic binomials by advanced and novice student translators* (Al-Jarf, 2016b)
- 9) *Undergraduate student-translators' difficulties in translating English word + preposition collocations to Arabic* (Al-Jarf, 2022g).

Cluster2: Technical Language Metaphorical and Fixed Expressions

This cluster includes one study focusing on specialized metaphorical and fixed expressions:

- 10) *issues in translating common names of chemical compounds* (Al-Jarf, 2022e)

Cluster 3: Human vs AI Weaknesses in Translating Metaphorical and Fixed Expressions

This cluster compares student translators with generative AI models in translating technical and abstract metaphorical and fixed expressions:

- 11) *Human vs AI translation of common names of chemical compounds* (Al-Jarf, 2025j).
- 12) *Translation of Arabic expressions of impossibility by AI and student-translators* (Al-Jarf, 2025l).

3.2 Eligibility (Inclusion & Exclusion) Criteria

Studies were included in this SR if they met the following criteria: (i) they were authored by the researcher; (ii) they investigated the bidirectional translation of metaphorical, formulaic, or fixed expressions between English and Arabic, or provided a direct empirical comparison of human and Generative AI performance; and (iii) they examined linguistic and cultural weaknesses, translation strategies, and error sources using empirical, data-driven analysis (qualitative or quantitative). These criteria ensured that the corpus represented a coherent body of research directly relevant to error analysis in figurative translation. Studies that did not meet these criteria were excluded. Excluded studies fall into the following categories:

- Duplicate Studies such as *Can ESP students use Artificial Intelligence for translating common names of chemical compounds* (Al-Jarf, 2025d); and *Word+particle collocation errors in English-Arabic translation* (Al-Jarf, 2009b).

- Studies on word- and sentence-level translation difficulties: *challenges that undergraduate student translators face in translating polysemes from English to Arabic and Arabic to English* (Al-Jarf, 2022b); *English and Arabic acronyms: Translation aspects* (Al-Jarf, 2023a); *grammatical agreement errors in L1/L2 translation* (Al-Jarf, 2000); *interlingual pronoun errors in English-Arabic translation* (Al-Jarf, 2010a); *issues in translating English and Arabic plurals* (Al-Jarf, 2020); *SVO word order errors in English-Arabic translation* (Al-Jarf, 2007); *translation students' difficulties with English neologisms* (Al-Jarf, 2010□□); *word + particle collocation errors in English-Arabic translation* (Al-Jarf, 2009); and *multiple Arabic equivalents to English medical terms* (Al-Jarf, 2018c).
- Studies on translation errors in non-academic contexts: *To translate or not to translate: The Case of Arabic and foreign shop names in Saudi Arabia* (Al-Jarf, 2024c); and *Pan Arab linguistic and translation errors and strategies in bilingual linguistic landscapes* (Al-Jarf, 2025k).
- Studies examining AI-only performance in translating metaphorical and fixed expressions, without comparison to human translators: *AI translation of the Gaza-Israel war terminology* (Al-Jarf, 2025b); *translation of Arabic folk medical terms with Om and Abu by AI* (Al-Jarf, 2025m); *translation of English and Arabic "sleep" terms and formulaic expressions by artificial intelligence* (Al-Jarf, 2025n); *translation of zero-expressions by Microsoft Copilot and Google Translate* (Al-Jarf, 2025o); *can artificial intelligence translate Arabic Abu-brand names with different prompts* (Al-Jarf, 2025c); *Copilot vs DeepSeek's Translation of denotative and metonymic abu- and umm- animal and plant folk names in Arabic* (Al-Jarf, 2025f); *DeepSeek, Google Translate and Copilot's translation of Arabic grammatical terms used metaphorically* (Al-Jarf, 2025g; Al-Jarf, 2025h); *Copilot's English translation of contrastive emphatic negation in Arabic discourse* (Al-Jarf, 2025e); *translation of medical terms by AI Microsoft Copilot and Google Translate* (Al-Jarf, 2024d; Al-Jarf, 2024e); *AI translation of full-text Arabic research articles: The case of educational polysemes* (Al-Jarf, 2025a); *An investigation of Google's English-Arabic translation of technical terms* (Al-Jarf, 2021a); *Google Translate then and now: translations from five languages into English and Arabic (2012–2025)* (Al-Jarf, 2025i); *Issues in translating English Technical Terms to Arabic by Google Translate* (Al-Jarf, 2016a) and *Electronic translation between Arabic and European languages* (Al-Jarf, 2012).
- Studies offering translation-pedagogy guidelines: *Emerging political expressions in Arab spring media with implications for translation pedagogy* (Al-Jarf, 2022c); *The Gaza-Israel War Terminology: Implications for Translation Pedagogy* (Al-Jarf, 2024b); and *Issues in using Twitter in interactive translation pedagogy* (Al-Jarf, 2017b).
- Studies on translation tools: *How to use a translation memory* (Al-Jarf, 2011); *How to use the OmegaT translation memory* (Al-Jarf, 2009a); and *electronic dictionaries in translation classrooms in Saudi Arabia* (Al-Jarf, 2001a).
- Studies on students' interpreting problems: *English-Arabic and Arabic-English interpreting competence of undergraduate student interpreters* (Al-Jarf, 2022d); *student-interpreters' foreign proper noun pronunciation errors in English-Arabic and Arabic-English media discourse interpreting* (Al-Jarf, 2022f); *effect of background knowledge on auditory comprehension in interpreting courses* (Al-Jarf, 2018a; Al-Jarf, 2018b); *what instructors and students should know about interpreting problems* (Al-Jarf, 2015); *l2/l1 meaning transfer errors by student-interpreters* (Al-Jarf, 2013).
- Studies on translation assessment: *critical analysis of translation tests in 18 specialized translation courses: shortcomings and recommendations* (Al-Jarf, 2021b); *an analytical study of translation tests* (Al-Jarf, 2003); *effect of online learning on struggling esl college writers* (Al-Jarf, 2002a); *issues in translation assessment* (Al-Jarf, 2001b); *linguistic and measurement considerations in translation tests* (Al-Jarf, 2002a); and *reflections on translation assessment* (Al-Jarf, 2002b).

3.3 Corpus Characteristics

The finalized synthesis corpus consists of twelve (12) closely related empirical studies spanning a longitudinal timeline from 2016 to 2025. All included studies share identical contextual settings, having been conducted by the same primary researcher within the context of undergraduate translation programs in Saudi Arabia. The corpus exhibits high methodological homogeneity: the source datasets are uniformly derived from written translation tasks administered to female undergraduate student translators majoring in translation or linguistics, with the exception of the 2025 comparative cohorts which integrate text generation outputs from Large Language Models (LLMs) like Microsoft Copilot, DeepSeek, and Google Translate. In total, the corpus evaluates over \$500 student translation protocols and an extensive array of targeted linguistic stimuli. Structurally, the corpus is divided into three distinct

investigative domains: general figurative strings (75%), highly specialized technical nomenclatures (8.3%), and explicit human-versus-AI comparative benchmarks (16.7%).

The corpus for this SR consists of twelve studies conducted by the author over a decade, each examining a distinct category of metaphorical or fixed expressions in English–Arabic translation. Although the expression types vary widely—ranging from impossibility expressions, kinship metaphors (om/abu, ibn/bint), dar/bayt expressions, numeral-based formulae, color metaphors, time metaphors, binomials, collocations, and folk chemical names, the corpus is unified by a consistent methodological orientation and a shared focus on non-literal meaning.

All studies were designed with careful attention to sampling, instrument construction, and statistical analysis, reflecting the author's background in educational research design and quantitative methods. The corpus includes elicited translation tests in 11 studies and naturally occurring errors collected from student assignments and graduation projects in one study. This combination allows for the examination of expression types that do not naturally appear in coursework (e.g., impossibility expressions, kinship metaphors, chemical names), while also capturing authentic patterns of collocational misuse in real student writing. The corpus is therefore characterized by: a wide semantic range of metaphorical and fixed expressions, a consistent population of undergraduate translation students, a blend of elicited in 11 studies and naturally occurring data in one study, a high level of linguistic and cultural specificity, and a research-driven selection of expression types chosen for their rarity, opacity, and cultural depth.

Together, these features create a corpus that is both coherent and uniquely positioned to reveal how student translators handle complex, culturally embedded forms of non-literal meaning.

3.4 Information Sources

The information sources for this SR consist exclusively of the researcher's published work. The corpus includes ten journal articles and two book chapters, with two publications indexed in Scopus (one journal article and one book chapter). Because all twelve studies are authored by the researcher, no external database search was required; the complete set of publications is already available in the researcher's CV and fully indexed on her Google Scholar profile. Nevertheless, these studies are publicly accessible through multiple academic platforms, including ResearchGate, Academia, Semantic Scholar, Scopus, Web of Science, SSRN, WorldCat, and various international university libraries such as Harvard Library but they are not indexed in the KSU Library. This broad availability ensures that the corpus represents a fully retrievable and verifiable body of work suitable for systematic synthesis in the context of author-bounded SRs.

3.5 Data Extraction and Synthesis

Data extraction was guided by a structured matrix designed to systematically capture qualitative and quantitative variables across the twelve included studies. For each study, information was extracted under four core categories aligned with the review's research questions: (i) Bibliographic and structural attributes, including publication year, the specific linguistic target (e.g., color metaphors, kinship expressions, chemical nomenclature), sample size (N), and translation directionality (English–Arabic or Arabic–English). (ii) Classifications of student and AI translation errors, organized into thematic categories such as semantic distortion, cultural misconceptualization, syntactic breakdowns, and literalism, following established error-analysis frameworks. (iii) Transfer mechanisms employed by human and AI translators, including literal transfer, idiom substitution, paraphrasing, structural deletion, and other strategies relevant to cross-linguistic meaning transfer. (iv) Identified causes of errors, such as interlingual interference (L1/L2), intralingual overgeneralization, dictionary dependency, and culturally driven misinterpretation.

The synthesis followed a thematic qualitative meta-synthesis approach. Because all source studies employ uniform descriptive error-analysis methodologies, the extracted data integrate coherently, without the statistical incompatibilities typically encountered in heterogeneous multi-author SRs. This methodological homogeneity enables a unified synthesis of patterns across metaphorical and fixed-expression translation.

3.6 PRISMA Flow Description

The study-screening process follows a modified Preferred Reporting Items for SRs and Meta-Analyses (PRISMA) framework adapted for author-bounded SRs. The PRISMA flow reflects the closed nature of the corpus, which consists exclusively of studies conducted by the researcher on metaphorical and fixed expressions in English–Arabic translation. After retrieving the complete set of research files, twelve studies met the inclusion criteria: (a) a focus on non-literal meaning, (b) empirical data derived from undergraduate translation students, and (c) systematic analysis of translation performance.

No external studies were included, and no database searches were required, as the corpus represents a unified research program rather than an open-ended literature review. Screening involved verifying the completeness of each study's materials—tests,

assignments, coding sheets, and statistical analyses—and ensuring that each study addressed a distinct expression type without duplication.

The final PRISMA flow can be summarized as follows: 48 records were identified from the researcher's archive and 48 full-text studies were assessed for eligibility; 12 studies met the inclusion criteria and were included in the final synthesis, while 36 studies were excluded. This streamlined PRISMA structure reflects the intentional design of the corpus as a cohesive body of work developed over multiple years, with each study contributing a unique component to the broader investigation of metaphorical and fixed expressions in translation.

4. Results

4.1 Study Characteristics

Cluster 1: General Language Metaphorical and Fixed Expressions

1) expressions of impossibility in Arabic and English: Unveiling students' translation difficulties. (Al-Jarf, 2024a)

Analysis of a sample of English and Arabic expressions of impossibility showed 4 categories: (i) expressions of impossibility that are identical in form and meaning in both languages (to look for a needle in a haystack, when salt blossoms, when heaven falls on earth); (ii) those that are similar in meaning but differ in wording (when pigs fly, on cloud nine, not in a million years); (iii) those used in English, but have no equivalents in Arabic (when hell freezes over, dance on a land mine); and (iv) those used in Arabic but have no equivalents in English (يُريه النجوم في عز الظهر to show someone the stars at noon/in daylight). Responses to the elicited translation test showed that student-translators translated fewer than 35% of the test items correctly and left many blank. Expressions of impossibility that are similar in English and Arabic were easy to translate, whereas opaque ones (ghost of a chance, dance on a land mine, ما تتغطى بغربال عين الشمس the sun cannot be covered with a sieve; لا تجنى من الشوك العنب you cannot reap grapes from thorns; لما تشوف حلمة ودك when you see your ear's lobe; العين ما تقاوم مخرز the eye cannot defy a nail). English expressions of impossibility were more difficult to translate than Arabic ones as they contained unfamiliar lexical items. The most common translation strategies were literal translation, explanation/paraphrase, partial translation, and extraneous translation in that order.

2) Equivalence Problems in Translating Ibn (Son) and Bint (Daughter) Fixed Expressions to Arabic and English (Al-Jarf, 2023b)

English and Arabic general ibn (son) and bint (daughter) expressions fall into 4 categories: (i) those that are identical in form and meaning in both languages (daughters of Eve, son of Adam); (ii) those that are similar in meaning but differ in wording (step-daughter); (iii) those that exist in English, but have no equivalents in Arabic (daughter of Sappho); and (iv) those that exist in Arabic but have no equivalents in English (daughter of Yemen, i.e., coffee). Specialized expressions used in medicine, computers, business and others are exact translations in both languages (daughter company, daughter cyst, daughter isotope). Student-translators translated fewer than 13% of the elicited Arabic test items and 12% of the elicited English test items correctly and left 75% blank. Son and daughter expressions similar in both languages were easy to translate (like mother like daughter), whereas opaque ones (بنت الشقة), culture-specific ones (ابن ليون، بنت بنوت، بنت أبيها) and those requiring a specialized background knowledge were difficult (daughter board). Extraneous translation, paraphrase, literal translation, use of synonyms, transliteration of Arabic words, partial translation, and giving the same translation for different expressions were the most common strategies. Translation difficulties are due to semantic and syntactic problems that the students have.

3) Numeral-based English and Arabic Formulaic Expressions: Cultural, Linguistic and Translation Issues (Al-Jarf, 2023c)

English and Arabic numeral-based formulaic expressions fall into 4 categories: (i) those that are identical in form and meaning in both languages (seventh heaven, four eyes, fifth column); (ii) those that are similar in meaning but differ in wording (cats have nine lives, high five, cloud nine); (iii) those that exist in English, but have no equivalents in Arabic; and (iv) those that exist in Arabic but have no equivalents in English. Specialized expressions containing numerals or numerical prefixes used in business, sports, science, politics and others are exact translations in both languages (five-power agreement, five percent rule, five tigers, tripartite alliance, fifth wheel replace). Student-translators translated fewer than 25% of the elicited translation test items correctly and left many blank. Numeral-based formulaic expressions similar in both languages were easy to translate, whereas opaque ones (at sixes and sevens, double Dutch, strap); culture-specific ones (Pentateuch, Millennialism، ألف صحة، صحتين وعافية، ثوب سُبَاعِيّ، الثنائي الشيعي، ربايات الخيام، ستين داهية، and those that require a specialized background knowledge (five C's, the big five, five pillars of the UN, three-name paper) were difficult. Literal translation was the most common translation strategy.

4) Time metaphors in English and Arabic: Translation Challenges (Al-Jarf, 2023d)

Time metaphorical expressions containing second ثانية، minute دقيقة، hour ساعة، day يوم، year عام، سنة، age، era، and epoch حقبة، eternity; time زمن، وقت، fall into 4 categories: (i) those that are identical in form and meaning in both languages (golden age, around the clock); (ii) those that are similar in meaning but differ in wording (wait for ages); (iii) those that exist in English, but

have no equivalents in Arabic (time is money); and (iv) those that exist in Arabic but have no equivalents in English (لزلة الساعة tremors of the day of judgment). Specialized expressions used in both languages are exact translations (Stone Age). Student-translators translated fewer than 20% of the elicited translation test items correctly and left many blank. Time metaphorical expressions similar in both languages were easy to translate, whereas opaque ones with an idiomatic or metonymic meaning and culture-specific ones were difficult (أكل عليه الدهر وشرب too old/obsolete; زمن الروبضة insignificant people talking about crucial issues). Those that require a specialized background knowledge (العصر الطباشيري Cretaceous Period) were difficult as well. Numerous strategies were utilized in translating the time expression as literal translation, partial translation, paraphrase, using synonyms and extraneous translations.

5) Arabic and English Dar (House) and Bayt (Home) Expressions: Linguistic, Translation and Cultural Issues (Al-Jarf, 2022a)

Although dar and bayt literally mean "house" and "home," they carry a wide range of extended meanings in Arabic. They denote family lineage (دار الجرف, بيت الجرف), origin or school of thought (بيت القيم, بيت الفن), and appear in names of cities (دار السلام), (بيت النحل/النمل) and historical monuments (بيت العثمان, دور الأدارسة). They also refer to animal and insect dwellings (بيت الضيافة, بيت الطالبات), commercial and industrial entities (بيت التمويل الكويتي, دار المياه, دار الأركان), hotels and accommodations (بيت الحكمة), stores and restaurants (بيت العود), educational institutions (بيت الريفي, بيت المتنقل), publishers (بيت المال), and types of homes (بيت الله, أهل البيت, دار التقوى), financial terms (بيت الشعر), literary terminology (بيت بيتك), metonyms (بيوت كرتونية, بيوت محمية, بيوت طينية). Results from an elicited translation test showed that students translated fewer than 25% of the items correctly, leaving many blank. Items with clear English parallels—such as courthouse and publishing house—were easier to translate, whereas culturally embedded or metaphorical uses posed significant difficulty. Literal translation was the most common strategy, followed by partial translation and paraphrasing.

6) Translation Students' Difficulties with English and Arabic Color-based Metaphorical Expressions (Al-Jarf, 2019)

English and Arabic color-based metaphorical expressions fall into five categories: (i) those that are identical in form and meaning in both languages; (ii) those that are the same in meaning but differ in form, (iii) those that are identical in form but different in meaning; (iv) those that exist in English but have no equivalents in Arabic; and (v) those that exist in Arabic but have no equivalents in English. Students' responses to an elicited color-based metaphorical expressions translation test showed that the students translated fewer than 25 % correctly and left many items blank. Color-based metaphorical expressions similar in both languages were easy to translate such as *black list*, *red line*, *green light*, whereas opaque ones were difficult. Literal translation was the most common translation strategy.

7) Issues in translating Arabic om- and abu-expressions (Al-Jarf, 2017a)

Although, "Om" and "Abu" in Arabic literally mean "mother" and "father", Om and Abu are used in some surnames, names of cities, monuments; birds, insects, fish, animals, plants, diseases and medical conditions, brand names, in metonyms referring to animals, metonyms with general reference, metonyms with religious reference, metonyms with a negative connotation, metonyms with a positive connotation, and in describing physical appearance. They can mean "origin" or "best example." They are used in collocations and idioms and in technical expression. Furthermore, an elicited translation test results showed that students translated less than 20% correctly. Those were Arabic expressions and their English equivalents that are similar such as "*mother of invention*", and "*father of medicine*". Many items were left blank, and literal translation was the major strategy. The study recommended taking into consideration the connotative and idiomatic meaning, non-literal translation of names of birds, animals, fish, plants, diseases; explanatory equivalents in transferring the meaning of metonyms; and transliterating most proper nouns.

8) Translation of English and Arabic binomials by Advanced and Novice Student Translators (Al-Jarf, 2016b)

English and Arabic binomials fall into three categories: (i) binomials that exist in English but have no equivalents in Arabic, (ii) those that exist in Arabic but have no equivalents in English and (iii) those that exist, i.e., are similar in both languages. Translation students' responses to an elicited translation test showed that 62.5% of the English binomials on the test were left blank by all the subjects" and "fewer than 20% of the responses were correct." Transparent binomials (e.g., sooner or later → عاجلاً أم آجلاً) were translated correctly whereas opaque or culturally embedded ones (e.g., rough and ready; عاقل باطل; الحابل بالنابل) were difficult to translate. Advanced students responded to 35% of test items and beginners to 32.5%, with no significant differences in total scores. Both groups struggled with binomials lacking direct equivalents, idiomatic pairs, and culturally loaded expressions. A positive correlation ($r = .37$) indicated that students who performed better on English binomials also tended to perform better on the Arabic binomial test. The most frequent strategies were literal translation, explanation/paraphrase, partial translation, contextualized guessing, use of synonyms, reversal, and extraneous translation. Literal translation was especially common even when an established equivalent existed (e.g., bread and butter → عيش وملح instead of خبز وزبدة). Students also invented binomials or confused them with unrelated expressions, indicating limited awareness of binomials as fixed multi-word units. Overall, the

results demonstrate that both advanced and beginning translation students have serious difficulty comprehending and translating binomials in both directions.

9) *Undergraduate Student-Translators' Difficulties in Translating English Word + Preposition Collocations to Arabic (Al-Jarf, 2022g).*

This is the only study in the corpus based on naturalistic data rather than elicited tests. Analysis of a corpus of faulty word+ preposition collocations was extracted from students-translators' graduation projects showed the following: (i) cases where the Arabic word + preposition collocations match those of their English equivalents in form and meaning (depend on يعتمد على, apologize for/to يعتذر ل/عن, interested in مهتم بـ); (ii) cases where a preposition is used in the English collocation but no preposition is used in the Arabic equivalent (wait for ينتظر); (iii) cases where an Arabic preposition is used after a word but no such preposition is used in their English equivalent (gave him tea قدم له الشاي, offered him a proposal عرض عليه اقتراح, stopped participating توقف عن المشاركة, lack something يفتقر إلى). Data analysis indicated that in 84% of the errors, the students substituted a preposition by a faulty one; in 13%, they added a preposition after an Arabic word that does not require a preposition; and in 3% they deleted a preposition from a translation that requires use of a preposition. In addition, 19% of the errors were interlingual (transfer errors from English) and 81% were intralingual due to inadequate competence in L1 (Arabic). 44% were extraneous errors, 21% were due to ignorance of Arabic language rules of preposition use and 18% were due to faulty common use of the preposition in the students' local dialect. 86% were syntactic; 11% were semantic and 3% were stylistic errors.

Cluster 2: Technical Language Metaphorical and Fixed Expressions

10) *Issues in Translating English and Arabic Common Names of Chemical Compounds by Student-Translators in Saudi Arabia (Al-Jarf, 2022e)*

A contrastive analysis of English and Arabic common names revealed several types of Arabic equivalents such as: (1) pure Arabic equivalents (Acetic Acid: Vinegar 2); (الخل) borrowings (Ferric Oxide: hematite 3); (الهيماتيت) Arabized (naturalized) equivalents (Potassium Carbonate: Potash 4); (البوتاس) semi-borrowed (Sodium Hydroxide: caustic soda 5); (الصودا) (5) multiple equivalents (Ammonium Chloride: ammonia 6); (الأمونيا, النشادر) calques (English salt 7); (الملح الانجليزي) neologism (Lactic Acid حمض اللبنيك); and (8) old names (Red Antimony زنجفر). Elicited test results showed that student-translators have difficulty translating English chemical common names to Arabic. They only gave correct responses to fewer than 20% of the test items; and 55% were blank responses. Their most common translation strategies were transliteration of the English name and literal translation. The students reported that they are not familiar with most of the English and Arabic chemical common names.

Cluster 3: Human vs AI Weaknesses in Translating Metaphorical and Fixed Expressions

11) *Human vs AI translation of common names of chemical compounds: A comparative study (Al-Jarf, 2025j).*

In Al-Jarf (2022), undergraduate student-translators had difficulty translating English common names of chemical compounds (CNCC) to Arabic. They gave correct responses to fewer than 20% of the test items and left 55% blank. Their most common translation strategy was literal translation and transliteration of English names. The students reported that they are not familiar with most of the English and Arabic chemical compound names. In Al-Jarf (2025i), two samples of English and Arabic common names of chemical compounds (CNCC) were translated by Microsoft Copilot (MC). Results demonstrated that MC translated 72% of the CNCC in the sample correctly. It gave more Arabic-English than English-Arabic correct equivalents (40% & 32% respectively). It gave more correct equivalents when I specified the domain and when I asked for all the equivalents that MC knows. MC gave literal word-for-word translation to terms as (Lunar caustic > نترات الفضة الكاوي القمري); transliteration (Stearic acid > حمض الكاوي instead of مسحوق الكلورة > مسحوق الكلور instead of مسحوق الكلور); a faulty derivative (Chlorinating powder > مسحوق الكلور instead of مسحوق الكلور); and explanation (Ammonia liquor > سائل الأمونيا). Although some English chemical compounds have multiple Arabic equivalents, MC gave only one unless prompted to give all. Even though MC is characterized by breadth of knowledge of English and Arabic chemical terminology and quick access to each term and in which context(s) it is used, in few cases, it failed to match the English chemical compound name with its Arabic equivalent and vice versa. Since translation-students' knowledge of CNCC is limited, they are advised to specify the kind of terms to be translated and to ask AI to give as many equivalents as possible. They should give AI the context, nuance, and direction so that it matches the term with its correct equivalent.

12) *Translation of Arabic expressions of impossibility by AI and student-translators: A comparative study (Al-Jarf, 2025l).*

This study compares the difficulties that Artificial Intelligence (AI) and student-translators have in translating expressions of impossibility (EIs). A sample of English and Arabic EIs was collected and translated by Microsoft Copilot (MC) and undergraduate student translators (Al-Jarf, 2024). Data analysis showed that Arabic-English translation was easier for MC than English-Arabic translation. MC mostly gave literal word-for-word translation (once in a blue moon القمر الأزرق مرة واحدة في القمر الأزرق instead of مرة في مرة في السنة), which sometimes sounded meaningless and culturally awkward. The students translated fewer than 35% of the EIs correctly, compared to by 52% correct translations by MC. They left many blank. Expressions similar in both languages were

easy to translate, whereas opaque expressions were more difficult (near the knuckle, ghost of a chance, dance on a land mine). Both MC and students gave more correct Arabic-English than English-Arabic translations. The most common translation strategy used by both was word-for-word translation. Paraphrase/explanation, partial, and extraneous translation were the most frequently used strategies by students. MC did not leave any expressions blank. Translation errors by students were due to lack of mastery of English, limited exposure to English idioms and proverbs, unfamiliar words, lack of background knowledge, cultural gaps, and inadequate translation competence. Although MC can explain the underlying meaning on an EI, it cannot make conceptual alignment because MC translation models prioritize direct linguistic accuracy, i.e., word-for-word translation, over natural, culturally adapted phrasing.

5. Discussion

5.1 Meta-Conclusion

Across the twelve studies, a clear and consistent pattern emerges: student translators struggle profoundly with metaphorical and fixed expressions across all semantic, cultural, and structural subtypes. Whether the expressions involve impossibility expressions, kinship-based metaphors (ibn/bint & Om/Abu), numeral-based formulaic expressions, time metaphors, dar/bayt expressions, color metaphors, binomials, or word + preposition collocations, the findings converge on the same conclusion: students translate fewer than 35% correctly, leave large items on the test blank, and rely heavily on literal translation. The studies also show that expressions similar in both English and Arabic are consistently easy, while opaque, culture-specific, or specialized expressions are consistently difficult. This pattern holds across all clusters and all expression types. In the technical domain, the study on common names of chemical compounds confirms that students translate fewer than 20% correctly and default to transliteration or literal equivalents. Finally, the comparative studies demonstrate that AI outperforms students in accuracy, but AI also defaults to literal translation, especially when expressions require cultural grounding or conceptual alignment.

Overall, the corpus reveals a unified meta-conclusion: non-literal meaning, whether metaphorical, formulaic, cultural, or technical—poses a persistent, cross-domain challenge for student translators, and neither human nor AI translation models fully resolve the cultural opacity embedded in these expressions.

5.2 Meta-Interpretation

The consistent translation weaknesses observed across all studies point to deeper linguistic, cognitive, and cultural factors shaping translation performance. First, the dominance of literal translation across all expression types suggests that students rely on surface-level lexical processing rather than conceptual mapping. This indicates limited awareness of how metaphor, metonym, and set-phrases operate in English and Arabic. The high percentage of blank responses further implies low tolerance for ambiguity and limited inferencing skills when confronted with opaque expressions. Second, the difficulty with culture-specific expressions—whether impossibility expressions, om/abu expressions, or common names of chemical compounds—reveals a gap in students' cultural literacy and background knowledge. Many expressions require familiarity with religious, historical, scientific, or social references that students do not possess. Third, the studies show that structural complexity (as in binomials or collocations) interacts with semantic opacity, producing compounded difficulty. Students struggle not only with meaning but also with syntactic patterns that differ between English and Arabic. Fourth, the comparative studies show that AI systems, while more accurate overall, still fail to achieve conceptual alignment. AI tends to prioritize direct lexical equivalence, producing culturally awkward or semantically distorted translations. This confirms that cultural metaphor processing remains a human-dependent skill, even when AI is involved. Taken together, the corpus suggests that translation difficulties stem not from isolated linguistic gaps but from a systemic lack of conceptual, cultural, and cognitive readiness to handle non-literal meaning.

5.3 Cross-Cutting Insights

Across all clusters, several cross-cutting insights emerge that unify the findings of the twelve studies: (i) Cultural opacity is the strongest predictor of difficulty. Expressions tied to cultural knowledge—religion, history, idioms, social practices, or folk terminology—consistently produce the lowest accuracy rates. (ii) Literal translation is the default strategy for both students and AI. This strategy succeeds only when expressions are similar in both languages; otherwise, it leads to semantic distortion or cultural awkwardness. (iii) Blank responses are a recurring phenomenon, indicating cognitive overload and lack of inferencing strategies. (iv) Similarity facilitates accuracy. When expressions share form and meaning across English and Arabic, students perform well; when they diverge, performance drops sharply. (v) Specialized knowledge gaps (e.g., scientific, religious, historical) significantly hinder translation accuracy across all expression types. (vi) AI advantages and limitations coexist. AI is faster and more accurate overall but fails to capture cultural nuance without explicit prompting. (vii) Non-literal meaning is multidimensional. The corpus shows that metaphorical and fixed expressions are not a single category but a constellation of subtypes—structural, cultural, lexical, technical—each requiring different cognitive and linguistic skills. (viii) Pedagogical implications are consistent across studies: students need explicit training in conceptual metaphor theory, cultural literacy, inferencing strategies, and contrastive analysis.

5.4 Implications

The findings across the twelve studies carry several important implications for translation pedagogy, curriculum design, translator training, and the integration of AI tools in educational contexts. First, explicit instruction in non-literal meaning is essential. Students' persistent reliance on literal translation across all expression types indicates the need for structured training in metaphor, metonym, idiomatic and formulaic expressions in both English and Arabic. Contrastive cultural awareness must be embedded in translation courses. Difficulties with culture-specific expressions—such as impossibility expressions, om/abu expressions, and folk chemical names—show that students require systematic exposure to cultural references, historical contexts, and domain-specific knowledge. Inferencing and cognitive strategies should be explicitly taught. High rates of blank responses reveal that students need training in guessing meaning, using context, and applying conceptual mapping rather than abandoning the task.

Second, curriculum redesign is needed to include diverse categories of metaphorical and fixed expressions. Current curricula appear to underrepresent non-literal meaning, despite its centrality in real-world translation. Assessment practices should incorporate tasks that evaluate students' ability to translate opaque, culturally loaded expressions—not only literal or technical texts. Domain-specific modules (e.g., scientific, religious, historical, legal) are necessary, as many errors stem from lack of background knowledge rather than linguistic weakness alone.

Implications for AI Integration

Third, guided use of AI tools can support student translators, but only when accompanied by explicit prompting strategies. The comparative studies show that AI performs better when the user specifies domain, context, and required equivalents. AI cannot replace cultural reasoning. Although AI outperforms students in accuracy, it still defaults to literal translation for metaphorical and culturally embedded expressions. This highlights the need for human oversight and cultural interpretation. AI as a diagnostic tool: educators can use AI outputs to help students compare strategies, identify literal distortions, and understand how meaning shifts across languages.

Fourth, there is a need for longitudinal studies: the consistent patterns across a decade suggest the value of tracking how students' metaphor-translation competence develops over time. Expansion of expression types: future research can explore additional categories such as legal metaphors, religious metaphors, political formulae, and social media expressions. Human–AI comparative frameworks should be further developed, as the corpus shows that both humans and AI struggle—but in different ways.

Finally, conceptual metaphor training is crucial for improving students' ability to map meaning across cognitive domains. Cultural literacy enhancement is necessary to reduce errors stemming from unfamiliarity with cultural references. Strategic flexibility must be cultivated so students can move beyond literal translation and choose paraphrase, explanation, or culturally adapted equivalents when needed.

5.5 Positioning This SR Within the Global Metaphorical and Fixed Expressions Translation SRs

Within the global landscape of SRs on figurative language and non-literal meaning, this SR occupies a distinct and previously unaddressed position. Existing SRs on metaphorical or figurative translation—such as figurative language in novels (Anisa, 2026), figurative expressions in narrative texts (Khalaf & Moindjie, 2026), and public signs (Amenador & Wang, 2022), tend to focus on *single genres*, *single expression types*, or *single translation contexts*. These reviews typically examine metaphor or formulaic expressions within literary, audiovisual, or public communication domains, and they do not integrate multiple subtypes of metaphorical and fixed expressions within a unified analytical framework. In contrast, the present SR synthesizes a broad, multi-category corpus that spans culturally embedded metaphors, structural formulaic expressions, kinship-based metaphors, numeral-based expressions, binomials, collocations, color metaphors, time metaphors, and common names of chemical compounds. This breadth positions the study as the first SR to treat metaphorical and fixed expressions not as isolated phenomena but as an interconnected system of non-literal meaning across English and Arabic.

Furthermore, unlike global SRs that rely on heterogeneous studies produced by multiple researchers, this SR is grounded in an author-bounded research program, allowing for a level of conceptual coherence, methodological consistency, and cross-study comparability that is rarely achievable in broader reviews. This coherence enables the identification of recurring patterns in student translators' performance across expression types—patterns that global SRs, with their fragmented datasets, cannot easily capture. Finally, this SR introduces a dimension absent from all existing metaphor-translation reviews: a human–AI comparative component, as seen in the studies on AI vs student translation of chemical names and AI vs student translation of impossibility expressions. No global SR to date has examined how AI systems handle metaphorical and fixed expressions relative to human translators, nor how cultural opacity affects both.

Taken together, this SR extends the global literature by offering: a multi-category synthesis of metaphorical and fixed expressions, a culturally grounded Arabic–English perspective, a methodologically unified corpus, and a human–AI comparative lens absent from all prior SRs. Thus, this study not only fills a gap in the global SR landscape but also reframes how metaphorical and fixed expressions can be systematically reviewed across languages, cultures, and translation modalities.

5.6 How This SR Connects to the Author's Previous SRs

Across the author's extensive body of SRs, this SR aligns with a long-standing research trajectory that synthesizes coherent sets of studies across diverse linguistic, pedagogical, technological, and sociocultural domains. Previous SRs have examined areas such as translation errors, AI translation quality, transliteration, interpreting pedagogy, vocabulary, grammar, reading instruction, social media in EFL, mobile-assisted learning, and many other domains.

Within this broader program, the present SR introduces a new thematic focus not previously synthesized: the translation of metaphorical and fixed expressions as a unified system of non-literal meaning. While earlier SRs addressed linguistic skills, pedagogical practices, or translation performance, none examined semantic opacity, cultural load, and conceptual mapping across multiple expression types in English–Arabic translation.

This SR also extends the author's translation-focused reviews by shifting from surface-level linguistic errors to deep-structure meaning processing, integrating cultural metaphors, structural formulaic expressions, kinship-based metaphors, numeral-based expressions, color metaphors, time metaphors, binomials, collocations, and folk chemical names within a single conceptual framework.

Methodologically, this SR continues the author's signature approach of author-bounded systematic synthesis, which provides conceptual coherence, comparable data structures, and unified analytical categories across studies. This continuity strengthens the methodological contribution established in earlier SRs that synthesized the author's research on reading, vocabulary, grammar, assessment, cultural learning, and AI translation.

A further contribution of this SR is the introduction of a human–AI comparative dimension, a feature not present in earlier reviews. By analyzing how AI and student translators handle culturally loaded metaphorical and fixed expressions, this SR expands the author's research program into the intersection of translation studies, cognitive linguistics, cultural semantics, and AI-assisted translation.

Overall, this SR integrates seamlessly into the author's broader scholarly agenda while adding a new semantic-cognitive layer, a new comparative perspective, and a new thematic domain that enriches the cumulative understanding of translation competence and non-literal meaning in English–Arabic contexts.

5.7 Limitations

These boundaries clarify the scope of the evidence and highlight opportunities for future research to expand participant groups, diversify data, and explore additional translation contexts.

Although this SR offers a coherent synthesis of twelve studies on metaphorical and fixed expressions within a unified research program, the following limitations should be acknowledged:

(i) The review is based exclusively on studies conducted by a single researcher. While this ensures methodological and conceptual coherence, it limits the diversity of theoretical perspectives, research designs, and analytical approaches that might emerge from multi-author or cross-institutional studies.

(ii) The included studies provide cross-sectional snapshots of student performance rather than longitudinal evidence. Consequently, the review does not trace how metaphor-translation competence develops over time or how instructional interventions shape long-term learning trajectories.

(iii) Although the corpus covers a wide range of metaphorical and formulaic expression types not previously examined in the literature, it does not include metaphorical expressions built around defeatist expressions, love-related metaphors (e.g., *my eye*, *my heart*, *my soul*, *my life*, *my lifetime*), body-part terms (e.g., *eye*, *head*, *heart*), everyday object pairs (*pen and notebook*; *pen and paper*), kinship expressions (*brother*, *sister*), possessive particles (*dhū*, *dhāt*, *dhawāt*), or figurative uses of animal names, plant names, flowers, vegetables, and place names containing *head* or *mountain*, honorific titles (*prince*, *sheikh*), and metaphors related to water or life and death.

(iv) Eleven of the twelve studies rely on elicited translation tests rather than naturalistic data. This design choice was necessary because highly specialized expressions—such as kinship-based metaphors, *dar/bayt* expressions, impossibility expressions, numeral-based formulaic expressions, color metaphors, binomials, and chemical compound names—rarely appear in students' assignments or graduation projects. However, elicited tests may not fully reflect real-world translation contexts.

(v) Only two studies in the corpus examine human vs AI comparative performance translation weaknesses. Both rely on a single AI model (Microsoft Copilot). Findings may vary across other AI systems (ChatGPT, Gemini, DeepSeek ... etc.), prompting strategies, model architectures, or future updates, which limits the generalizability of the AI-related results.

These boundaries clarify the scope of the evidence and highlight opportunities for future research to expand participant groups, diversify data sources, incorporate additional genres, and explore broader translation contexts.

6. Recommendations & Directions for Future Research

Based on the synthesis of the twelve studies, the following recommendations are offered for enhancing translation pedagogy, strengthening student competence, and expanding future research on metaphorical and fixed expressions:

- Translation programs should incorporate structured instruction on metaphor, metonyms, idiomatic and formulaic expressions. Students need guided exposure to how figurative meaning operates in English and Arabic. Since many errors stem from cultural unfamiliarity, translation courses should integrate cultural background knowledge related to kinship metaphors, impossibility expressions, color symbolism, time metaphors, and other culturally embedded forms. Students should be trained to move beyond literal translation and to use paraphrase, explanation, conceptual mapping, and culturally adapted equivalents when needed. For specialized categories such as chemical names, numeral-based expressions, and technical metaphors, targeted modules can help students acquire the necessary background knowledge.
- Future studies may explore additional categories of metaphorical and fixed expressions, such as legal metaphors, political metaphors, religious formulae, or social-media-based figurative language. Research could examine how students mentally process opaque expressions, what cues they rely on, and how they make sense of unfamiliar figurative forms.
- AI-human comparative studies Building on the two AI-related studies in the corpus, future work may compare different AI systems, prompting strategies, or hybrid human-AI workflows to understand how figurative meaning is handled computationally.
- Studies may investigate how instructional interventions, such as metaphor workshops, cultural modules, or guided translation tasks, affect student performance in real classroom settings.
- Larger corpora of authentic student translations, assignments, and projects may reveal additional patterns of difficulty beyond those captured through tests.

These recommendations aim to strengthen translation pedagogy and open new avenues for research on figurative and culturally loaded expressions in English–Arabic translation.

7. Conclusion

This SR synthesizes twelve studies that collectively illuminate the challenges student translators face when dealing with metaphorical and fixed expressions across a wide range of semantic, cultural, and structural categories. Despite the diversity of expression types—impossibility expressions, kinship metaphors, numeral-based formulae, time metaphors, color metaphors, binomials, collocations, *dar/bayt* expressions, *om/abu* expressions, and folk chemical names—the findings converge on a consistent pattern: students struggle most with opaque, culture-specific, and specialized expressions, and rely heavily on literal translation. The review highlights the importance of cultural literacy, conceptual mapping, and domain knowledge in achieving accurate translation of non-literal meaning. It also shows that AI systems, while outperforming students in accuracy, still default to literal rendering and require explicit prompting to produce culturally appropriate equivalents. By integrating these studies into a unified analytical framework, this review contributes a comprehensive understanding of how English–Arabic translators handle figurative and fixed expressions, and identifies pedagogical and research pathways for strengthening translation competence. The findings reaffirm the need for explicit instruction, cultural grounding, and strategic flexibility in translation training, and open new directions for future inquiry into the cognitive and cultural dimensions of figurative language translation.

Conflicts of Interest: The author declares no conflict of interest.

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

Publisher's Note: All claims expressed in this article are solely those of the author and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers.

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. DOI: [10.32996/jcsts.2026.8.6.6](https://doi.org/10.32996/jcsts.2026.8.6.6). [Google Scholar](#)
- [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/ijahs.2026.6.2.1](https://doi.org/10.32996/ijahs.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](https://doi.org/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. DOI: [10.32996/bjtep.2026.5.3.5](https://doi.org/10.32996/bjtep.2026.5.3.5). [Google Scholar](#)
- [5] 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](https://doi.org/10.32996/ijtis.2026.6.1.2). [Google Scholar](#)
- [6] 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](https://doi.org/10.32996/jcsts.2026.8.3.2). [Google Scholar](#)
- [7] 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/jhss.2026.8.3.9](https://doi.org/10.32996/jhss.2026.8.3.9). [Google Scholar](#)
- [8] 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](https://doi.org/10.32996/jeltal.2026.8.1.2). [Google Scholar](#)
- [9] 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. DOI: [10.32996/jlds.2026.6.5.1](https://doi.org/10.32996/jlds.2026.6.5.1). [Google Scholar](#)
- [10] Al-Jarf, R. (2026k). A systematic self-review of EFL Grammar studies (2000–2025): teaching, technologies, and learning outcomes. *Journal of Learning and Development Studies*, 6 (7), 01–21. DOI: [10.32996/jlds.2026.6.7.1](https://doi.org/10.32996/jlds.2026.6.7.1). [Google Scholar](#)
- [11] Al-Jarf, R. (2026l). 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](https://doi.org/10.32996/jcsts.2026.8.5.16). [Google Scholar](#)
- [12] Al-Jarf, R. (2026m). A systematic self-review of global dimensions in L1 school textbooks (2003–2006) with implications for contemporary curricula. *Journal of Learning and Development Studies*, 6(8), 1–18. DOI: [10.32996/jlds.2026.6.8.1](https://doi.org/10.32996/jlds.2026.6.8.1). [Google Scholar](#)
- [13] Al-Jarf, R. (2026n). A systematic self-review of studies on cultural learning, global issues, and pedagogical practices in second language contexts (2003–2025). *International Journal of Cultural and Religious Studies*, 6(3), 9–32. DOI: [10.32996/ijcrs.2026.6.3.2](https://doi.org/10.32996/ijcrs.2026.6.3.2). [Google Scholar](#)
- [14] Al-Jarf, R. (2026o). 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](https://doi.org/10.32996/jweep.2026.8.3.3). [Google Scholar](#)
- [15] Al-Jarf, R. (2026p). 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](#)
- [16] Al-Jarf, R. (2026q). 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](https://doi.org/10.32996/bjal.2025.6.1.1). [Google Scholar](#)
- [17] Al-Jarf, R. (2026r). 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](https://doi.org/10.32996/jlds.2026.6.1.3). [Google Scholar](#)
- [18] Al-Jarf, R. (2026s). 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](https://doi.org/10.32996/jweep.2026.8.1.3). [Google Scholar](#)
- [19] Al-Jarf, R. (2026t). 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](https://doi.org/10.32996/jcsts.2026.8.4.2). [Google Scholar](#)
- [20] Al-Jarf, R. (2026u). 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. DOI: [10.32996/jhss.2026.8.4.11](https://doi.org/10.32996/jhss.2026.8.4.11). [Google Scholar](#)
- [21] Al-Jarf, R. (2026v). 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](https://doi.org/10.32996/fell.2026.3.1.1). [Google Scholar](#)
- [22] Al-Jarf, R. (2026). English-Arabic Language Dynamics: A Systematic Self-Review of English Hegemony in Educational and Sociolinguistic Landscapes. *International Journal of Linguistics, Literature and Translation*, 9 (6), 69–88. <https://doi.org/10.32996/ijllt.2026.9.6.9>. [Google Scholar](#)
- [23] Al-Jarf, R. (2026w). 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](https://doi.org/10.32996/bjtep.2026.5.1.3). [Google Scholar](#)

- [24] Al-Jarf, R. (2026x). 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/jhss.2026.8.1.6. [Google Scholar](#)
- [25] Al-Jarf, R. (2026y). Interpreting pedagogy, difficulties, technologies, and skill correlates in the Saudi context: A Systematic Self-Review (2000–2022). *International Journal of Translation and Interpretation Studies*, 6(4), 1-19. DOI: 10.32996/ijtis.2026.6.4.1. [Google Scholar](#)
- [26] Al-Jarf, R. (2026). Linguistic landscapes and signages in focus: a synthesized self-review of multi context research (2021-2025). *Journal of Pragmatics and Discourse Analysis*, 5(3), 01-17. <https://doi.org/10.32996/jpda.2026.5.3.1>. [Google Scholar](#)
- [27] Al-Jarf, R. (2026z). Listening and speaking instruction, assessment and technologies in the Saudi EFL context: a systematic self-review. *British Journal of Applied Linguistics*, 6 (2), 18-39. DOI: 10.32996/bjal.2025.6.2.3. [Google Scholar](#)
- [28] Al-Jarf, R. (2026aa). 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](#)
- [29] Al-Jarf, R. (2026bb). Spelling error types, strategies, sources, and instructional interventions among EFL freshman students: A systematic self-review. *British Journal of Teacher Education and Pedagogy*, 5(5), 28-44. DOI: 10.32996/bjtep.2026.5.5.4. [Google Scholar](#)
- [30] Al-Jarf, R. (2026cc). Student autonomy in second language learning: A systematic self-review of training, skill development, and technology-enhanced practices (2004–2025). *British Journal of Teacher Education and Pedagogy*, 5(6), 59-85. <https://doi.org/10.32996/bjtep.2026.5.6.5>. [Google Scholar](#)
- [31] Al-Jarf, R. (2026dd). 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](#)
- [32] Al-Jarf, R. (2026ee). 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](#)
- [33] Al-Jarf, R. (2026ff). 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](#)
- [34] Al-Jarf, R. (2025a). AI translation of full-text Arabic research articles: The case of educational polysemes. *Journal of Computer Science and Technology Studies*, 7(1), 311-325. DOI: 10.32996/jcsts.2025.7.1.23. [Google Scholar](#)
- [35] Al-Jarf, R. (2025b). AI translation of the Gaza-Israel war terminology. *International Journal of Linguistics, Literature and Translation*, 8(2), 139-152. DOI: 10.32996/ijllt.2025.8.2.17. [Google Scholar](#)
- [36] Al-Jarf, R. (2025c). Can Artificial Intelligence (AI) translate Arabic abu-brand names with different prompts. *Journal of Computer Science and Technology Studies*, 7(9), 768-779. DOI: 10.32996/jcsts.2025.4.1.91. [Google Scholar](#)
- [37] Al-Jarf, R. (2025d). *Can ESP students use Artificial Intelligence for translating common names of chemical compounds*. 6th INNO-LSP International Conference on Innovative Trends in Teaching Languages for Specific Purposes in the Context of Current Social Instability. Ovidius University of Constanța, Romania. September 18- 19, 2025. [Google Scholar](#)
- [38] Al-Jarf, R. (2025e). Copilot's English translation of contrastive emphatic negation in Arabic discourse: An analytical study. *International Journal of Linguistics, Literature and Translation*, 8(12), 214-230. DOI: 10.32996/ijllt.2025.8.12.24. [Google Scholar](#)
- [39] Al-Jarf, R. (2025f). Copilot vs DeepSeek's translation of denotative and metonymic abu- and umm- animal and plant folk names in Arabic. *Journal of Computer Science and Technology Studies*, 7(10), 367-385. DOI: 10.32996/jcsts.2025.7.10.39. [Google Scholar](#)
- [40] Al-Jarf, R. (2025g). *DeepSeek, Google Translate and Copilot's translation of Arabic grammatical terms used metaphorically*. Conference on Foreign Languages and Literature in the Context of Culture. Perm State University, Russia. April 4, 2025
- [41] Al-Jarf, R. (2025h). DeepSeek, Google Translate and Copilot's translation of Arabic grammatical terms used metaphorically. *Journal of Computer Science and Technology Studies*, 7(3), 46-57. DOI: 10.32996/jcsts.2025.7.3.6. [Google Scholar](#)
- [42] Al-Jarf, R. (2025i). Google Translate then and now: Translations from five languages into English and Arabic (2012–2025). *Journal of Computer Science and Technology Studies*, 7(12), 413-427. DOI: 10.32996/jcsts.2025.7.12.50. [Google Scholar](#)
- [43] Al-Jarf, R. (2025j). Human vs AI translation of common names of chemical compounds: A comparative study. *Frontiers in Computer Science and Artificial Intelligence*, 4(4), 11-24. <https://doi.org/10.32996/fcsai.2025.4.4.2>. [Google Scholar](#)
- [44] Al-Jarf, R. (2025k). Pan Arab linguistic and translation errors and strategies in bilingual linguistic landscapes. *International Journal of Translation and Interpretation Studies*, 5(3), 17-38. DOI: 10.32996/ijtis.2025.5.3.4. [Google Scholar](#)
- [45] Al-Jarf, R. (2025l). Translation of Arabic expressions of impossibility by AI and student-translators: A comparative study. *Journal of Computer Science and Technology Studies*, 7(8), 288-299. DOI: 10.32996/jcsts.2025.7.8.33. [Google Scholar](#)
- [46] Al-Jarf, R. (2025m). Translation of Arabic folk medical terms with om and abu by AI: A comparison of Microsoft Copilot and DeepSeek. *Journal of Medical and Health Studies*, 6(4), 45-58. DOI: 10.32996/jmhs.2025.6.4.8. [Google Scholar](#)
- [47] Al-Jarf, R. (2025n). Translation of English and Arabic "sleep" terms and formulaic expressions by Artificial Intelligence: A comparison of Copilot and DeepSeek. *International Journal of Linguistics, Literature and Translation*, 8(11), 95-108. <https://doi.org/10.32996/ijllt.2025.8.11.10>. [Google Scholar](#)
- [48] Al-Jarf, R. (2025o). Translation of zero-expressions by Microsoft Copilot and Google Translate. *Journal of Computer Science and Technology Studies (JCSTS)*, 7(2), 203-216. <https://doi.org/10.32996/jcsts.2025.7.2.20>. [Google Scholar](#)
- [49] Al-Jarf, R. (2024a). Expressions of impossibility in Arabic and English: Unveiling students' translation difficulties. *International Journal of Linguistics, Literature and Translation*, 7(5), 68-76. DOI: 10.32996/ijllt.2024.7.5.9. ERIC ED651472. [Google Scholar](#)
- [50] Al-Jarf, R. (2024b). The Gaza-Israel War Terminology: Implications for Translation Pedagogy. *International Journal of Middle Eastern Research*, 3(1), 35-43. DOI: 10.32996/ijmer.2024.3.1.5. ERIC ED650283. [Google Scholar](#)
- [51] Al-Jarf, R. (2024c). To translate or not to translate: The case of Arabic and foreign shop names in Saudi Arabia. *International Journal of Translation and Interpretation Studies*, 4(1), 33-40. DOI: 10.32996/ijtis.2024.4.1.5. [Google Scholar](#)

- [52] Al-Jarf, R. (2024d). *Translation of medical terms by AI: A comparative linguistic study of Microsoft Copilot and Google Translate*. In Y. M. Elhadj et al. (Eds.): I2COMSAPP 2024, LNNS 862, pp. 1–16. https://doi.org/10.1007/978-3-031-71429-0_17. Springer Nature Switzerland AG 2024. [Google Scholar](#)
- [53] Al-Jarf, R. (2024e). *Translation of medical terms by AI: A comparative linguistic study of Microsoft Copilot and Google Translate*. I2COMSAPP'2024 Conference, 23-25 April 2024, Nouakchott, Mauritania. [Google Scholar](#)
- [54] Al-Jarf, R. (2023a). *English and Arabic acronyms: Translation aspects*. In S.V. Shustov (Ed), Foreign Languages in The Context of Culture. Perm State National Research University. pp. 76-82. UDC: 811.411.21. [Google Scholar](#)
- [55] Al-Jarf, R. (2023b). Equivalence problems in translating ibn (son) and bint (daughter) fixed expressions to Arabic and English. *International Journal of Translation and Interpretation Studies*, 3(2), 1-15. DOI: 10.32996/ijtis.2023.3.2.1. ERIC ED628181 [Google Scholar](#)
- [56] Al-Jarf, R. (2023c). Numeral-based English and Arabic formulaic expressions: Cultural, linguistic and translation issues. *British Journal of Applied Linguistics*, 3(1), 25-34. DOI: 10.32996/bjal.2023.3.1.2. ERIC ED628151. [Google Scholar](#)
- [57] Al-Jarf, R. (2023d). Time metaphors in English and Arabic: Translation challenges. *International Journal of Translation and Interpretation Studies (IJTIS)*, 3(4), 68-81. DOI: 10.32996/ijtis.2023.3.4.8. [Google Scholar](#)
- [58] Al-Jarf, R. (2022a). Arabic and English dar (house) and bayt (home) expressions: linguistic, translation and cultural issues. *Journal of Pragmatics and Discourse Analysis (JPDA)*, 1(1), 1-13. ERIC ED624367 [Google Scholar](#)
- [59] Al-Jarf, R. (2022b). Challenges that undergraduate student translators' face in translating polysemes from English to Arabic and Arabic to English. *International Journal of Linguistics, Literature and Translation (IJLLT)*, 5(7), 84-97. DOI: 10.32996/ijllt.2022.5.7.10. ERIC ED620804. [Google Scholar](#)
- [60] Al-Jarf, R. (2022c). Emerging political expressions in Arab spring media with implications for translation pedagogy. *International Journal of Linguistics, Literature and Translation*, 5(11), 126-133. DOI: 10.32996/ijllt.2022.5.11.15. [Google Scholar](#). ERIC ED634153. [Google Scholar](#)
- [61] Al-Jarf, R. (2022d). English-Arabic and Arabic-English interpreting competence of undergraduate student interpreters: A comparative study of directionality. *International Journal of Social Science and Education Research Studies (IJSSERS)*, 2(1), 39-44. ERIC ED618628. [Google Scholar](#)
- [62] Al-Jarf, R. (2022e). *Issues in translating English and Arabic common names of chemical compounds by student-translators in Saudi Arabia*. In Kate Isaeva (Ed.). Special Knowledge Mediation: Ontological & Metaphorical Modelling. Springer. DOI: 10.1007/978-3-030-95104-7. [Google Scholar](#)
- [63] 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*, 2(1), 80-90. Doi: 10.32996/ijtis.2022.2.1.11. ERIC ED619940. [Google Scholar](#)
- [64] Al-Jarf, R. (2022g). Undergraduate student-translators' difficulties in translating English word + preposition collocations to Arabic. *International Journal of Linguistics Studies*, 2(2), 60-75. DOI: 10.32996/ijls.2022.2.2.9. ERIC ED621368. [Google Scholar](#)
- [65] Al-Jarf, R. (2021a). An investigation of Google's English-Arabic translation of technical terms. *Eurasian Arabic Studies*, 14, 16-37. [Google Scholar](#)
- [66] Al-Jarf, R. (2021b). Critical analysis of translation tests in 18 specialized translation courses: Shortcomings and recommendations. *European Journal of Education and Pedagogy*, 3(5), 1-7. DOI :10.24018/ejedu.2021.2.3.86. [Google Scholar](#)
- [67] Al-Jarf, R. (2020). Issues in translating English and Arabic plurals. *The Journal of Linguistic and Intercultural Education - JoLIE*, 13(1), 7-28. <https://doi.org/10.29302/jolie.2020.13.1>. [Google Scholar](#)
- [68] Al-Jarf, R. (2019). Translation Students' Difficulties with English and Arabic color-based metaphorical expressions. *Fachsprache*, 41 (Sp. Issue), 101-118. <https://doi.org/10.24989/fs.v41iS1.1774>. ERIC ED622935. [Google Scholar](#)
- [69] Al-Jarf, R. (2018a). *Effect of background knowledge on auditory comprehension in interpreting courses*. In Renata Jancarikova (Ed.) Interpretation of Meaning across Discourse, pp. 97-108. Muni Press, Brno, Czech Republic. <https://doi.org/10.5817/CZ.MUNI.M210-8947-2018>. [Google Scholar](#)
- [71] Al-Jarf, R. (2018b). *Effect of background knowledge on auditory comprehension in interpreting courses*. 4th Brno Conference on Linguistics Studies in English titled "Interpretation of Meaning in Spoken and Written Discourse". Masaryk University, Brno, Czech Republic. Sept 16-17, 2010. ERIC ED665097.
- [72] Al-Jarf, R. (2018c). Multiple Arabic equivalents to English medical terms: Translation issues. *International Linguistics Research*, 1(1); 102-110. <https://doi.org/10.30560/ilr.v1n1p102>. ERIC ED613073. [Google Scholar](#)
- [73] Al-Jarf, R. (2017a). Issues in Translating Arabic Om- and Abu-Expressions. *Alatoo Academic Studies*, 3, 278-282. ERIC ED613247. [Google Scholar](#)
- [74] Al-Jarf, R. (2017b) *Issues in using twitter in interactive translation pedagogy*. 22th Annual TCC Online Conference. Hawaii, USA. April 18-20, 2017. <https://www.researchgate.net/publication/404260401>. [Google Scholar](#)
- [75] Al-Jarf, R. (2016a). *Issues in translating English technical terms to Arabic by Google Translate*. Third International Conference on Information and Communication Technologies for Education and Training (TICET), Khartoum, Sudan, March 12-14. 17-31. [Google Scholar](#)
- [76] Al-Jarf (2016b). *Translation of English and Arabic binomials by advanced and novice student translators*. In Larisa Ilynska and Marina Platonova (Eds) Meaning in Translation: Illusion of Precision (Pp. 281-298). Cambridge Scholars Publishing. ERIC ED639264. [Google Scholar](#)
- [77] Al-Jarf, R. (2015). *What instructors and students should know about interpreting problems*. College of Languages and Translation, King Saud University, Riyadh, Saudi Arabia. January 28. [Google Scholar](#)
- [78] Al-Jarf, R. (2013). *L2/L1 meaning transfer errors by student-interpreters*. 5th Nitra Conference on Discourse Studies titled "Context, References and Style". Constantine the Philosopher University, Nitra, Slovakia. March 20-12. <https://www.academia.edu/167767883/> [Google Scholar](#)

- [79] Al-Jarf, R. (2012). *Electronic translation between Arabic and European languages: Current status and future perspectives*. 6th Annual Conference of Ibn Sina Institute for Human Sciences titled: The Future of Arabic Language Teaching in Europe. LILLE, France. June 22-24. [Google Scholar](#)
- [80] Al Jarf, R. (2011). *How to use a translation memory*. College of Languages and Translation. May 25, 2011. <https://www.researchgate.net/publication/390873814>. [Google Scholar](#)
- [81] Al-Jarf, R. (2010a). Interlingual pronoun errors in English-Arabic translation. International symposium on Using Corpora in Contrastive and Translation Studies (UCCTS). Edge Hill University, Ormskirk, UK. July 27-29. ERIC ED614074. [Google Scholar](#)
- [82] Al-Jarf, R. (2010b). Translation students' difficulties with English neologisms. *Analele Universității "Dunărea De Jos" Din Galați Fascicula XXIV ANUL III* (2). 431-437. Romania. [Google Scholar](#)
- [83] Al-Jarf, R. (2009a). *How to use the OmegaT translation memory*. Sultan Qaboos University, Muscat, Oman. April 12-13. [Google Scholar](#)
- [84] Al-Jarf, R. (2009b). *Word+particle collocation errors in English-Arabic translation*. 40 Years of Particle Research. Bern, Switzerland. February 11.-13. [Google Scholar](#)
- [85] Al-Jarf, R. (2007). SVO word order errors in English-Arabic translation. *META*, 52(2), 299-308. DOI10.7202/016072ar. ERIC ED623835. [Google Scholar](#)
- [86] Al-Jarf, R. (2003). *An analytical study of translation tests*. College of Languages and Translation Symposium Series, King Saud University. Riyadh, Saudi Arabia. December 1. [Google Scholar](#)
- [87] Al-Jarf, R. (2002a). *Linguistic and measurement considerations in Translation tests*. 13th World Congress of the Association Internationale de Linguistique Appliquee (AILA). Singapore, December 16-21. www.researchgate.net/publication/350314137. [Google Scholar](#)
- [88] Al-Jarf, R. (2002b). *Reflections on translation assessment*. American Association of Applied Linguistics (AAAL) Conference. Salt Lake City, Utah, April 6-9. www.researchgate.net/publication/350314093. [Google Scholar](#)
- [89] Al-Jarf, R. (2001a). Electronic dictionaries in translation classrooms in Saudi Arabia. *Linguistica Communicatio*, 10, 27-134. ERIC ED613066. [Google Scholar](#)
- [90] Al-Jarf, R. (2001b). *Issues in translation assessment*. 5th CTELT Annual Conference "Teaching, Learning and Assessment", Dubai, United Arab Emirates, May 9-10. www.researchgate.net/publication/350314112. [Google Scholar](#)
- [91] Al-Jarf, R. (2000). Grammatical agreement errors in L1/L2 translation. *International Review of Applied Linguistics*, 38, 1-15. <https://doi.org/10.1515/iral.2000.38.1.1>. [Google Scholar](#)
- [87] Al Maaytah, S., et al (2024). Using machine translation English-Arabic procedures and challenges-a systematic review. *Power System Technology*, 49(1), 588-607.
- [88] Adiel, M. & Ahmed, M. (2016). Problems in translating metaphorical expressions. *International Journal of Humanities Social Sciences and Education*, 3(6), 46-50.
- [89] Almaaytah, S. & Alzobidy, S. (2023). Challenges in rendering Arabic text to English using machine translation: a systematic literature review. *IEEE Access*, 11, 94772-94779.
- [90] Amenador, K. & Wang, Z. (2022). A systematic review of the Chinese-English translation of public signs. *Sage Open*, 12(2), 21582440221094611.
- [91] ANISA, L. (2026). *A systematic literature review on the translation strategies for figurative language in novels*. Doctoral dissertation. Raden Intan State Islamic University Lampung, Indonesia.
- [92] Ashuja'a, A., et al. (2019). Exploring strategies of translating metaphor from English into Arabic with reference to scientific texts. *International Journal of Comparative Literature & Translation Studies*, 7(3), 26.
- [93] Benito-Santiago, H., et al. (2022). Machine Translation of texts from languages with low digital resources: A systematic review. *Mexican International Conference on Artificial Intelligence*, 41-56. Cham: Springer Nature.
- [94] Castañeda, A., et al. (2025). A systematic review: Fansubbers and audio-visual translation. *2025 Institute for the Future of Education Conference (IFE)* (pp. 1-9). IEEE.
- [95] Genovese, A., et al. (2024). Artificial intelligence in clinical settings: A systematic review of its role in language translation and interpretation. *Annals of translational medicine*, 12(6), 117.
- [96] Hu, X., Halina, H. & Zin, Z. (2025). A systematic literature review of film title translation. *Theory and Practice in Language Studies*, 15(7), 2227-2238.
- [97] Ismail, M., et al. (2025). Translation strategies of Arabic-Malay religious texts: A Systematic review of scopus-indexed literature. *International Journal of Research and Innovation in Social Science (IJRISS)*, 9, 22.
- [98] Khalaf, F. & Moindjie, M. (2026). The translation techniques of figurative expressions in novel texts: A systematic literature review. *Journal of Cultural Analysis and Social Change*, 2619-2626.
- [99] Nguyen, T., et al. (2025). The benefits and challenges of AI translation tools in translation education at the tertiary level: A systematic review. *International Journal of TESOL & Education*, 5(2), 132-148.
- [100] Raído, V. (2024). Artificial Intelligence in healthcare translation: A contemporary systematic review. *The Social Impact of Automating Translation*, 123-146.
- [101] Saeed, A. (2025). Machine translation evaluation between Arabic and English during 2020 to 2024: A review study. *Arts for Linguistic & Literary Studies*, 7(2), 665-678.
- [102] Sidiya, A., et al. (2024, January). From analysis to implementation: A comprehensive review for advancing Arabic-English machine translation. *21st Learning and Technology Conference*, 109-114. IEEE.
- [103] Su, K. (2021). Translation of metaphorical idioms: A case study of two English versions of Honglouloumeng. *Babel*, 67(3), 332-354.
- [104] Tirkkonen-Condit, S. (2002). Metaphoric expressions in translation processes. *Across languages and cultures*, 3(1), 101-116.
- [105] Van Lancker-Sidtis, D. & Rallon, G. (2004). Tracking the incidence of formulaic expressions in everyday speech: Methods for classification and verification. *Language & Communication*, 24(3), 207-240.