
| RESEARCH ARTICLE

Challenges That Undergraduate Student Translators' Face in Translating Polysemes from English to Arabic and Arabic to English

Reima Al-Jarf

Full Professor of English and Translation Studies, Riyadh, Saudi Arabia

Corresponding Author: Reima Al-Jarf, E-mail: reima.aljarf@gmail.com

| ABSTRACT

Polysemes are words that have multiple meanings. They exist in all languages as in Arabic جناح صوت جدول جنح and English *base, plant, system, present, left*. A sample of Arabic and English polyseme translation errors was collected from homework-assignments and exams to explore the difficulties that student-translators have in translating English and Arabic polysemes. Data analysis showed that the students made more errors in translating Arabic polysemes to English than English polysemes to Arabic. They made more errors in translation polysemous compounds than single-word polysemes and the equivalent compounds had collocation errors. The students utilized different faulty strategies in translating polysemes, especially in source texts which have one-to-many equivalents (*system, affairs*). They tend to overgeneralize the equivalent they know to all contexts (*develop, system*), not the one suitable for a particular context/domain (**chemical plants; under president*). They resorted to literal translation, i.e., word for word translation rather than using fixed formulaic equivalents that are dissimilar in structure to the source polyseme. They also overgeneralized the same equivalent to all contexts (*develop, system; association*), although each shade of meaning has a different equivalent. Faulty translation of polysemic words may be due to inadequate L1 competence such as the availability of different regional Arabic designations for 'parliament' and the different designations used in American and British English for (وكيل وزارة الخارجية الامريكى); lack of proficiency in EFL, i.e. limited vocabulary knowledge; unfamiliarity with specialized meanings (**chemical plants*) and commonly used equivalents for 'affairs; resources'; lack of world knowledge (*exchange programs; الاتحاد الأوروبي*) and others. The study recommends that translation instructors develop students' vocabulary knowledge, word knowledge accuracy, schemata and world knowledge, metacognitive skills, i.e., thinking processes while translating, word and context analysis skills, i.e., using semantic and structural contextual clues to figure out the meaning of polysemes; and identifying the domain in which a polyseme is used.

| KEYWORDS

English polysemes, Arabic polysemes, translation difficulties, English-Arabic translation, student translators, polyseme translation errors, faulty polyseme equivalents.

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1. Introduction

Polysemes are words or phrases that have two or more meanings as in English *base, plant, hand, system, left*, and Arabic جناح عين مجلس. بحث تأهل كتب رواية يمثل مجلس. Other terms for words that have different meanings are homonyms, homophones, and homographs. Homonyms are words that share the same spelling and pronunciation but may have different meanings as in *lead (Past, Present); play (V, N)*. Homophones are words that are pronounced the same but have different meanings (*pair, pear; site, cite, sight; maid, made*). Homographs are words that are spelled the same but have different meanings (*mean, mind, single*).

A contrastive analysis of English and Arabic polysemes showed three types of polysemes: (i) polysemes with the same range of meanings in both languages: *Program برنامج (computer, T.V.) training تدريب, rehabilitation تأهيل*. (ii) Arabic polysemes that have several English equivalents, i.e., an equivalent for each meaning (one to many) as in *جدول اعلان تعاون صوت*. (iii) English polysemes

that have several Arabic equivalents, i.e., an equivalent for each meaning (one to many) as in (*Free, system, parliament, intensive care, lab*) (Al-Jarf, 2011; Al-Jarf, 1996; Al-Jarf, 1995; Al-Jarf, 1994).

In translation, English and Arabic polysemes pose numerous problems for EFL and translation students. A review of the literature has shown several lines of research that investigated the problems faced in comprehending and translating polysemes between some language pairs. The first line of research is the problems that polysemes pose for EFL learners. For examples, in China, Li (2022) explored the development of mental representations of polysemous words in Chinese EFL learners. First The researcher measured the students' lexical knowledge of polysemous words via word association. Then the students were divided into a high proficiency group and a low proficiency group. Thirdly, the students responded to a questionnaire to assess their English metaphoric competence and vocabulary learning strategies. The results indicated that Chinese students' polysemy learning strategies and metaphoric competence could have modulated the representational development of polysemous words in light of the meaning extension mechanisms.

Another study in China, used a questionnaire and two word meaning tests to explore EFL Chinese students' acquisition of the polysemous word meaning. The study revealed that providing the primary meaning to the students can help them guess the extended meaning of unfamiliar polysemous words than providing the other extended meanings. Students of different proficiency levels in English showed similar acquisition effects of primary meaning but different acquisition effects of the extended meaning (Wei & Lou, 2015).

A third study with Chinese students by Dodigovic, Ma & Jing (2017) analyzed a corpus of students' writing in English, and classified the lexical transfer errors to find out whether the transfer of L1 word polysemy, collocations, and multi-word units impact Chinese students' English vocabulary use, whether advanced students are more prone to L1 lexical transfer errors than less advanced students. Results indicated that the most common errors were those caused by L1 polysemy in individual words, followed by multi-word units and collocation errors. More advanced learners appeared to be slightly but not significantly less prone to lexical transfer errors.

In Iran, Iravani & Ghasemi (2012) investigated how EFL learners' comprehension of English polysemous verbs by using elaborated context, semantic frames, and meaning chains. After reading the cues, the students completed a translation and a multiple-choice task and rated their confidence in their answers. The Results indicated that when accuracy was taken into consideration and when both accuracy and confidence ratings were jointly examined, the elaborated context cue elicited significantly better performance. In the translation task, none of the three cues generated significantly better results than the no-cue condition.

In the UAE, Alnamer (2017) investigated the extent to which Arabic-speaking EFL college students are aware of polysemy in English and whether their English proficiency level plays a role in their ability to distinguish the various meanings of English polysemous words, and whether they have problems with polysemous words in unusual contexts especially the extended meanings of the target polysemous words. Results of a translation test containing fifteen English sentences containing the polysemous words "open," "run," and "make" showed that EFL Arab students have little awareness of polysemy in English, and their English proficiency level did play a role in their ability to distinguish the different meanings of English polysemous words. Results also showed that EFL Arab students have no problem guessing the primary meaning of English polysemous words, but many have difficulty guessing the extended meanings of polysemous words in unusual contexts. Some students can guess the extended meanings of the polysemous words they encounter in familiar contexts, or when they understand some cues provided to disambiguate these words.

In a similar study in Yemen, Abdulsafi and Al-Sa'adi (2020) administered a translation test consisting of 10 sentences to 28 students learning English at the University of Aden. Five sentences tested the polysemous word *break* and the other five tested the polysemous word *sound*. The meanings of the polysemous word in the first sentence in each set of five sentences is the direct, core meaning, whereas the meanings in the other 4 sentences are the secondary indirect meanings. The researchers found that Arabic-speaking EFL students were unable to translate the words when they were used in their indirect secondary meanings and the students were incompetent in understanding the different meanings of polysemous words.

Regarding the translation of polysemous words, Egan (2013) tried to find out whether the Norwegian translation equivalents of the English verbs "*begin & start*" and of the polysemous preposition "*at*" can aid in finding out the extent to which the former pair of verbs may be synonymous or not and in tracing the polysemous semantic network of the preposition. The data consisted of tokens of the three forms from the English original texts-of the English-Norwegian Parallel Corpus. The study found that *begin* and *start* are synonymous in some contexts, but not synonymous in syntactic frames. It also revealed that the various senses of "*at*" cluster into two main semantic sub-networks.

As for the difficulties that translation students have with polyseme, senior students majoring in translation at Can Tho University in Vietnam translated two printed informative advertisements from English to Vietnamese in 90 minutes. The findings showed that

vocabulary was more problematic than grammar. The students used equivalence to deal with polysemy, reduction and borrowing with plural nouns, addition with proper nouns and imperative mood, paraphrasing with terminology and idioms, transposition with passive voice and noun phrases. They did not apply word-for-word translation to solve any difficulties in question (Phuc & Diep, 2018).

In Turkey, Mergen and Yetkin-Karakoç (2020) employed an oral translation task with English-Turkish (L2-L1) bilinguals in which the participants translated 30 ambiguous words, (polysemes and homonyms) in contextualized sentences to find out whether word frequency affects participants' translation accuracy. The researchers found that the subjects translated polysemous words with greater accuracy than homonyms. No significant effects of students' proficiency level, and the sentential context on translating high and low frequency words.

At the University of Aden in Yemen, Salem (2014) administered a questionnaire and two tests, each of which consisted of 10 sentences containing polysemous words and a questionnaire to 15 MA translation students who translated polysemous words from English to Arabic. Data analysis showed that MA students had difficulties in choosing the suitable equivalents to polysemous words.

In a study with Iraqi students, Mohammed (2009) selected data from two English-English dictionaries to be translated by 20 senior students at the University of Mosul. The students were asked to pay attention to the underlined words in the sentences. Most of the subjects made serious translation errors because they did not pay attention to the co-text while translating the polysemic words. The students resorted to the "central or core" meanings of the polysemous words regardless of other associated meanings, i.e., meaning variants. They treated polysemous words as monosemic ones. They did not depend on collocational relations in their translation.

Few more studies explored the effect of using monolingual and bilingual dictionaries while translating sentences with polysemous words. A study by Hamlaoui (2010) administered a questionnaire to second year students majoring in English at Mentouri University, in Algeria to find out if the students benefit from bilingual dictionaries in translating the English polysemous words to Arabic. The results showed that the students do not use the dictionary adequately and hence fail in their translation. In a similar study, 30 MA translation students translated 20 sentences containing polysemous words using a monolingual dictionary. Then the students were given a second test in which they were allowed to use a bilingual dictionary. The results indicated that the use of bilingual dictionaries had a positive effect on the students' translation of polysemous words. The students also had a positive attitude towards the use of bilingual dictionaries in translating polysemous words (Jalali & Rad, 2020).

The above literature review shows that prior studies, especially those that focused on English-Arabic translation of polysemous words investigated students' ability to translate polysemous words in single sentences, not long texts, some of which were even taken from a dictionary. The tests used by those studies covered a small number of items, between 10 and 20 sentences and some studies focused on the problems that students have in 2 & 3 polysemous words. Only Mergen and Yetkin-Karakoç's (2020) test contained 30 polysemes and homonyms. Some prior studies focused on the effect of using monolingual and bilingual dictionaries on polyseme translation accuracy. In addition, the literature review shows lack of studies that investigate the acquisition of polysemous words by EFL undergraduate student-translators at the College of Languages and Translation (COLT), King Saud University, in Riyadh, Saudi Arabia and their ability to translate English and Arabic polysemes in long texts. To address this imbalance, the present study intends to explore undergraduate translation students' competence in translating a variety of Arabic polysemes to English and English polysemes to Arabic in long texts. The polyseme translation error data will consist of a large error sample collected from the spontaneous translation of long texts in home-work assignments and exams. The study also aims to identify the strategies that undergraduate student-translators employ when they encounter unfamiliar or difficult polysemes; and to identify the sources/causes of polyseme translation errors, i.e., whether the translation errors are interlingual or intralingual.

While practicing the translation of long texts in a variety of domains, undergraduate student-translators at COLT very often grapple with the meanings of polysemous words with multiple meanings. Thus, findings of this study are significant for translation instructors as they will shed light on the types of difficulties that student-translators have with polysemes and how students' translation competence can be improved.

2. Methodology

2.1 Subjects

Subjects of the current study consisted of 73 students majoring in translation at the College of Languages and Translation (COLT), KSU, Riyadh, Saudi Arabia. The students were in levels 5 & 6 (semester 5 &6) of the translation program and were enrolled in a variety of translation courses in the humanities, medical, physical sciences, engineering, Islamic, media, business, and military domains (2 hours per week each) in which they practice translating specialized texts from English to Arabic and vice versa. They

students were concurrently enrolled in 3 interpreting courses (2 hours per week each). In semesters 1-4 of the translation program, the students had completed 20 hours of English language courses per semester (Listening, Speaking, Reading, Writing, Vocabulary building). In addition to 20 hours of Arabic language courses (morphology, syntax and rhetoric). The subjects were all native speakers of Arabic with English as their L2.

2.2 Data collection

A corpus of English and Arabic polyseme translation errors was collected from the English-Arabic and Arabic-English translation of long texts from exams and homework–assignments in the humanities, medical, physical sciences, engineering, Islamic, media, business, and military translation courses. Only 70 mistranslated English polysemes and 25 mistranslated Arabic polysemes were selected for further analysis. The mistranslated English polysemes have different Arabic equivalents with different shades of meaning (one to many) and the mistranslated Arabic polyseme have different English equivalents with different shades of meaning (one to many). On exams, the students were not allowed to use monolingual and bilingual dictionaries, but in homework-assignments they could use dictionaries.

2.3 Data Analysis

The students' mistranslations of the English and Arabic polysemic words were marked by the author. Only 95 mistranslated polysemes were selected. Polysemes with deviant translations, i.e., meanings that do not match any of the meanings of a polyseme, were not included in the sample such as *proposes* أعلن, *tasks* أعمال, *term* تعبير, *by interactions* بالاشتراك, *a Rand Corporation study* دراسة ادارية مشتركة – للتعاون الواسع – دراسات الهيكل المؤقتة - التعاون - دراسات أرائد التعاونية – دراسة تعاونية – الدراسات التعاونية - دراسة مشتركة – للتعاون الواسع – دراسات الهيكل المؤقتة - التعاون - دراسات أرائد التعاونية – دراسة تعاونية – الدراسات التعاونية - دراسة هيئة خاصة *can reach* تستطيع الحدوث, *administrative* , *administration* رئاسة, *context* النصوص, *impaired* تراجع, *التسيير*.

In analyzing the translation errors, focus was mainly on the semantic errors and on some grammatical errors that affect meaning. Grammatical errors that do not affect meaning such as adding or deleting the definite article (*adaptation* التأقلم, *stimulation* التحريض), or using the wrong tense (adopt سأتخذ) were not analyzed. Only semantic errors in polyseme translation were analyzed.

To identify the strategies that undergraduate student-translators used in translating each English and Arabic polyseme, all faulty translations were compiled and subjected to further analysis. Translation strategies were classified into: (i) literal translation, i.e., word for word translation where a polysemic phrase was literally translated into an equivalent Arabic phrase although a different equivalent exists as in (bridge the gap جسر الهوة); (ii) selecting an Arabic equivalent that does not collocate with the noun in a particular context; (iii) selecting an Arabic equivalent that is not used in a particular domain or context in the target language (TL); (iv) confusing equivalents used for two different source language (SL) words; (v) inventing an equivalent when the SL word or when the TL equivalent is unfamiliar particularly in Arabic-English translation; and (vi) giving an equivalent that does not match the SL in number, tense, part of speech, and type of derivative.

To identify the sources/causes of polyseme translation errors, each error was classified into interlingual or intralingual. Interlingual errors are those due to insufficient mastery of English (L2) such as unfamiliarity with the meaning of the polyseme in English. Intralingual polyseme errors are those due to inadequate knowledge of Arabic (L1) collocations, which equivalent is used in a particular domain or context, and lack of background knowledge of certain acronyms referring to UN organization, name of certain companies, and programs.

All errors made in translating each polyseme are listed in Tables 1 & 2. Repetitious errors were listed once only as in the case of the acronym WHO which most of the students translated as the question word "who". The percentages of students who could translate some English or Arabic polysemes with a high error rate were calculated. In most cases, results of the analysis of the English and Arabic polyseme translation error data are reported qualitatively.

2.4 Reliability

Identification of the polyseme translation error sample and each polyseme and its mistranslation was verified by a colleague who has a Ph.D. in translation. She went through the list of English and Arabic polysemes in the sample and their equivalents and had to make judgments as to whether a word and a phrase was polysemous and whether the translation was incorrect. Both classifications were compared. There was a 96% agreement between the two raters. Disagreements were solved by discussion.

3. Results

3.1 Arabic-English Polyseme Translation Errors

Results of the polyseme translation error analysis revealed that translation students made more errors in translating Arabic polysemes to English than English polysemes to Arabia. For each Arabic polyseme in the Arabic polyseme sample, the students gave many faulty translation equivalents. As an example, 76% of the subjects mistranslated *المفاصل الروماتيزمية* التهابات المفاصل الروماتيزمية. They also

made more errors in translating polysemous compounds than translating single-word polysemes. In addition, the error data showed that in polysemous compounds, the students know the English equivalents to the constituents as single words, but they did not know the meaning of those compounds as a whole as fixed expressions in English which in turn reflect poor semantic and background knowledge. In some cases, the meaning of the compound as a unit is not equal to the sum of the words making up the compound.

In examples 1-22 in Table 1, there are no similarities between the Arabic compounds and their English equivalents in their lexical structure. Each phrase has a fixed formulaic equivalent in English, i.e., the English translation is a modulation of the Arabic phrase and has a block structure. Since the students are not familiar with the English version, they created their own equivalents by using several strategies each of which is described below.

- 1) In examples 1 to 8, the students have difficulty translating some political terms although in translation and interpreting courses, the students learnt two different designations (equivalents) for وزارة/وزير الخارجية in American English (Secretary of State) and British English (*Foreign Office/Secretary of State for Foreign Affairs*). The Arabic term نائب is used as an equivalent to American political designations such as 'undersecretary' and 'vice president'. So, some students overgeneralized what they know from previous learning to new expressions with which they are not familiar. Since "undersecretary" was new to them, they did not know the usage restrictions in English and Arabic, so they overgeneralized 'under' to other political ranks in American English and in Arabic. They tailor-made *under president for* نائب الرئيس الأمريكي following the same structure of *Under Secretary of State*. Some extended the Arabic (*crown*) to English political designations by saying *Crown President* as in the Arabic designation *Crown Prince*.
- 2) Since, different Arab countries have different designations for "Parliament" such as مجلس الشعب، مجلس الأمة، مجلس النواب، المجلس النيابي، some students used several faulty translations for each word in the compound المجلس الكويتي such as "National council – people's association – society council – cabinet – Kuwait assembly – community council – Umah council – People council – Shura Council – council of people". In those mistranslations, they gave a variety of faulty equivalents for المجلس and a variety of faulty equivalents for الأمة rather than translating المجلس الأمة as a block phrase (expression). Some of the faulty translations are literal translation with a faulty word order and a faulty structure. They resorted to the same faulty strategies in translating التهايات المفصل الروماتيزمية and سوق الكويت للأوراق المالية.
- 3) In examples 9 to 20 in Table 1, the students resorted to literal translation of the compounds with polysemous constituents such as in translating العبء التدريسي، جامعة عالمية، الارشاد الاكاديمي، الترجمة الثنائية، خطاب تعريف، مترجم متعاون، الإنتاج العلمي، التأمينات الاجتماعية and they completely ignored the fixed formulaic expression (block equivalent) used in English. The students recalled the general meaning of the polysemous word or the equivalent that first constituent came up to their mind rather than the English equivalent used in a specific context. In Arabic, أحوال means "conditions or statuses", but بطاقة الاحوال refers to the ID card issued by the Civil Affairs Department in Saudi Arabia which is called *National ID Card* in American English. The students resorted to *intermediate schools* as they are not familiar with the specialized technical term commonly used in American/British English (*Middle or Junior High school*). العبء is polysemous in Arabic. It can mean *burden or load* but in educational settings "load" not "burden" is used to refer to the number of teaching hours taught by a teacher. Similarly, الارشاد الاكاديمي is polysemous where the equivalent *counselling* is used in a psychological context and *advising* is used in an educational context. The students seem to be more familiar with *counselling* but are not familiar with *academic advising* where academic advisors help students in managing their courses, registration and so on. In التأمينات الاجتماعية، they quickly associated التأمينات with its singular form التأمين and recalled *insurance* as its equivalent because the English formulaic expression *social security* seems to be unknown to them.
- 4) In example 25 in Table 1, مؤثر has several English equivalents (*effective, impactful, influential*) but the students did not seem to know which one collocates with 'role'.
- 5) Making up (inventing) an equivalent with all words related to money (*shares, money, currency exchange, bonds, money papers, financial, currencies, banknotes, monetary, stock changes*). Even when some used the components of the equivalent (*stock + market*), the word order was faulty (*Market of stocks, Kuwait Markets and stocks*). This reflects lack of proficiency in constructing compounds in English.
- 6) In example 20 in Table 1, the equivalent is a loan translation, and in examples 6, 8, 22 in Table 1, the English equivalent is a calque.

- 7) In all the Arabic items in Table 1, the students gave a literal translation of the Arabic polysemes, sometimes with a faulty grammatical structure, sometimes with a partial translation of the multi-word compounds (as in 7, 9, 10 in Table 1) and sometimes they invented their own English equivalent which was erroneous (See # 1, 2, 3, 4, 5 in Table 1).
- 8) In items 1 to 25 in Table 1, most Arabic polyseme translation errors are intralingual, i.e., due to students' inadequate knowledge of the English equivalents of the Arabic compound and lexical items. The students do not seem to be familiar with the English equivalents used in the political, educational, economic, and medical domains. They have poor knowledge of English collocation as in compounds in examples 8, 12, 14, 15, 17, 18, 19, 23, 25 in Table 1, where the two parts of the compound do not collocate with each other.

Table 1: Examples of Polysemous Arabic Compounds and Lexical Items with Faulty English Equivalents Given by the Students

Arabic Source Polysemes	Students' Mistranslations	Correct Equivalents
1. نائب وزير الداخلية السعودي	under state minister – internal affairs – sub minister – under secretary of internal – under foreign minister – vice minister of interior affairs inter minister – under internal minister – vice internal minister – vice president of interior minister.	Saudi deputy Minister of Interior
2. وكيل وزارة الخارجية الأمريكي	supervisor – foreign offers – American department – State department – foreign department in America – under security foreign – American responsible – prime minister – security of interior department – under secretary of foreign department – secretary of department State – foreign minister.	Under Secretary of State
3. نائب الرئيس الأمريكي	under president, under secretary, under security, prime council, crown president, security of president, prime minister.	Vice president
4. مجلس الامة الكويتي	National – National council – Nation – people's association – Nation council – society council – cabinet – Kuwait assembly – community council – Umah council – People – Shura Council – council of people	Parliament
5. مجلسي الشيوخ والنواب	house of presidential of the America - American congress senators - 2 louder & congress – senate council - house of common senator - senator - representative congress - American lords - Sinete - House of senior - House of Nobels – House of Lord - council party - House of Lord - American representative - representative corporation Houses - House representative - House of State	Senate and house of Representatives
6. الاتحاد الأوروبي	Soviet Union – United Europe	EU or European Union
7. الاعلان العالمي لحقوق الانسان	announcement - announcing - announced - agreement - advertising - world announcement	World Declaration of Human Rights
8. قمة الارض	land meeting - land summit - earth top - top earth - simmot - conference of the earth - summit of the earth.	Earth Summit
9. التهابات المفاصل الروماتيزمية (76%)	infection of this disease - arthroritis the rheumatism - viral infection - artritist - arthritis - arthritics - rheumatism infection - infelmation - airthritist.	Rheumatoid arthritis
10. سوق الكويت للأوراق المالية	Kuwait Market for shares - Kuwait Market for money - Kuwait Market for banknotes - currency exchange market - Kuwait Market for bonds - money papers - Kuwait financial Market - Market exchange - financial note bank - Kuwait Market for currencies - currency Market - Kuwait Market for financial - Market for money - current exchange - banknotes - exchange - Kuwait Market for currency - exchange - Kuwait monetary Market - Kuwait markets - stock changes Market, Market of stocks, Kuwait Markets and stocks	Kuwait Stock Market
11. بطاقة الأحوال	civil status card	national ID card
12. العبء التدريسي	Teaching burden	Teaching load
13. جامعة عالمية	universal university, global university; universality,	world-class university

14. الارشاد الاكاديمي	academic counseling	academic advising
15. الترجمة الثنائية	bilateral interpreting	Liaison interpreting
16. خطاب تعريف	Identification letter	Letter of employment
17. مترجم متعاون	cooperative translator	adjunct translator
18. الإنتاج العلمي	Scientific production	scientific output
19. مدرسة متوسطة	Intermediate school	Middle school, Junior high school
20. مجلس الشورى	consultative assembly	Consultative Council, Shura Council
21. التأمينات الاجتماعية	Social Insurance	Social security
22. المجتمع المدني	Civil community – social community – civilian society	Civil society
23. العمود الفقري للاقتصاد	Keystone, vertebral column	backbone
24. الملكية	Owns – owning – owner	property
25. دور مؤثر	influence role	Effective role

3.2 English-Arabic Polyseme Translation Errors

Table 2 shows examples of errors that undergraduate Arabic-speaking student-translators in the present study made in translating English polysemous compounds and single-word polysemes to Arabic. As in translating Arabic polysemes, poor knowledge of some words, phrase and compound meanings in English accounted for 32% of the mistranslated items as in *well-established, summation, alien & alienation, free will, adopted for animals, bosses, deficits, dichotomy, inferred, opposite direction, WHO, physics and physical*. The students seem to lack knowledge of the meaning of specialized terms commonly used in education, psychology, research and other fields in both English and Arabic especially in cases where the Arabic equivalent is a modulation of the English term as in the following examples: *adaptation, associative learning, creative thinking, deficits, Exchange programs, findings, inferred, limitations, long term, short term, observation, mobile, postulate, stimulus, sensory experiences, stimulus, special tasks, retention, thesis defense, translator's resources, trial & error, valid, localization, values education, literature review*.

In the case of multiple Arabic equivalents, the students could not match a particular Arabic equivalent with the appropriate domain in which it is used. Such errors accounted for 45% of the polysemes under study. The most difficult were *WHO* and *exchange programs* as 83% of the students gave faulty equivalents to *Exchange programs* and 66% of the students gave faulty equivalents to *WHO* (World Health Organization). Examples of faulty Arabic equivalents that do not match the domain in which they are used are *association, associative learning, observation, stimulus, valid, creative thinking, system, trial & error, physical world, physical therapy, ion conductance, potentiation, medical body, findings, world bank, bridge the gap, China Town, spatial tasks, chemical plants*.

Although the word 'system' is polysemous and is used in many contexts in English, undergraduate students in the current study tended to automatically translate it to نظام regardless of the specific meaning, context or domain in which it is used. For example, body systems such as the nervous, circulatory, or digestive systems should be translated into الجهاز العصبي/الدوري/الهضمي. and solar system should be translated into المجموعة الشمسية. Similarly, 'develop' is polysemous but the students tended to translate it into يطور in all contexts as in *develop a curriculum, develop a plan, develop a questionnaire*, although يطور is polysemous in Arabic. Therefore, different equivalents for *develop* should be used depending on the context such as يضع/يضمم منهج، يضع خطة، يضم. استبانة. Students tend to translate 'technical' as تقني i.e., give it the same equivalent as 'technological'. Both terms are not identical, and the students should not use the equivalent تقني for both. Arabic speakers say "خلل فني technical problem", and "technical terms مصطلحات فنية". The students did not use فني probably because it is also polysemous and they are probably more familiar with the meaning associated with "art" rather than technology or terminology. "Affairs" is polysemous and is used in various contexts and domains. It has several equivalents in Arabic شؤون ومسائل وأمر each of which is used in a different context and domain and in a different compound. Thus, Arabic speakers say الشؤون الصحية، الشؤون الخارجية، شؤون الطلاب، وشؤون الموظفين والشؤون المالية والإدارية بالجامعة. شؤون فقهية and أمور عائلية" أمور دينية ودينية but الشؤون المالية والإدارية بالجامعة شؤون مالية is.

Similarly *family members* was literally translated into أعضاء الأسرة rather than أفراد الأسرة which is commonly used by native speakers. Arabic speakers say أفراد الأسرة/المجتمع but أعضاء الفريق/المجلس/البرلمان. The same applies to *mobile* which was translated into هاتف جوال ignoring the other context and meanings used in English such as *mobile home* منزل متنقل and *mobile phone*.

Moreover, data analysis revealed that insufficient knowledge of Arabic (L1) accounts for 78% of the mistranslated items. In 34% of the mistranslated items, the two parts of the compound do not collocate with each other. The error data showed numerous faulty collocations in the Arabic translation. The polysemous word "resources" has two equivalents in Arabic (موارد & مصادر). The

students made the wrong choice between مصادر & موارد in translating "the translators' resources" because the selection depends on the context and the domain in which each is used. Arabic speakers say مصادر المياه، مصادر الطاقة، مصادر المعلومات، but الموارد البشرية. Another example is "Insurance" which is a technical term and has a fixed Arabic technical term. It was mistranslated into الضمان probably because the students are not familiar with the Arabic term تأمين and used ضمان instead because it is more accessible. In Arabic, التأمين على الحياة، والتأمين على السيارات، التأمين التعاوني، التأمين ضد الحريق are used. Further examples of collocation errors in the translation of polysemic compounds are موارد المترجم، مسائل مالية، الضمان الصحي التعاوني، الدفاع عن الرسالة، أعضاء الأسرة، التفكير الابداعي، التجربة والخطأ، العالم الفيزيائي، العلاج الفيزيائي، جسر الهوة، المدينة الصينية، ادبيات البحث، أعمال فراغية، النباتات الكيميائية، محافظة على الطاقة، ولاية اسلامية، بلدة اسلامية، الحالة الاسلاميه، حالة في البلاد الاسلاميه ولاية.

In some error cases shown in Table 2, the semantic error was caused by misunderstanding some English grammatical structures. For example, some students misinterpreted the preposition in the source text which resulted in a mistranslation of the polysemous word as in (*adopted for animals*) that was translated into اتبناها للحيوانات rather than استخدمت/استخدمت للحيوانات.

In another case, the students could not tell the difference in meaning between nouns derived from transitive and intransitive verbs. The polysemous word *alienation* was translated as اغتراب, although it is derived from the transitive verb *alienate* (*X alienated Y*). Due to lack of grammatical competence in English, the equivalent was faulty because it was derived from the intransitive Arabic verb اغترب which does not match *alienate*.

Misunderstanding the relationship between the constituents of a compound sometimes affects the correct choice of the equivalent. In translating *arms control*, the students confused two derived forms in Arabic (تحديد & الحد) which are denotatively different. The commonly used equivalent in Arabic is الحد من الأسلحة not تحديد الأسلحة which is not used at all and means *identifying* or *selecting arms*. Another instance of misunderstanding the relationship between the constituents of a compound is determining which constituent should come first in the translation. For example, *values education* was translated as قيم التعلم (i.e., *values of education*) rather than تعليم القيم (*teaching values*).

Some students did not pay attention to the part of speech of the source lexical item, i.e., they did not match the part of speech of the polyseme and its equivalent. *Administrative* which is an adjective was mistranslated into التسيير which is a noun and means *administration* rather than giving an Arabic equivalent that is an adjective. Since there is no adjective derived from التسيير, a better equivalent would be اداري. In translating compounds, *free Will* (Adjective + Noun) was translated into حرية الإرادة (Noun + Noun) rather than الإرادة المحضة (Noun + Adjective) although in Arabic the Adjective follows the noun unlike English.

Other mismatches of the Part of Speech of the SL polysemes and the Part of Speech of TL equivalent are in translating a noun like الملكية into a verb, gerund or agent (owns, *owning*, *owner*) and the adjective مؤثر in the compound دور مؤثر into the noun *influence* instead of the adjective *influential*.

Further examples of translation incompetence are the tendency to give a plural equivalent to singular or non-count English nouns as in *association* الترابطات; *insurance* تأمينات; *literature review* ادبيات البحث. When *quality* means standard, the Arabic equivalent نوعية/جودة should be singular. But the plural given by the students changed the meaning altogether because *qualities* means صفات/سمات and the plural نوعيات means *types*.

In translating derivatives such as *physics & physical*, some students translated an English noun form and an adjectival form with a corresponding Arabic noun form فيزياء and adjectival form فيزيائي regardless of the context in which the adjective is used. In English the adjective *physical* is used in all contexts. But since the Arabic equivalent to *physics* is فيزياء, this does not mean that the Arabic equivalent to *physical* is always فيزيائي as in the faulty translations given by some subjects. *Physical world* was mistranslated as العالم الفيزيائي rather than العالم المادي/المحسوس; *physical therapy* was mistranslated into العلاج الفيزيائي rather than العلاج الطبيعي. The correct Arabic equivalents to *physical* in some compounds are *physical education* التربية البدنية; *metaphysical* ما وراء الطبيعة; *physical examination* فحص جسدي; *physical address* العنوان الفعلي, *physical agents* العوامل الفيزيائية and so on.

Likewise, an adjective with a negative particle in English may not necessarily mean the same as the adjective without the negative particle in Arabic. Some students mistranslated *non-primary* into غير ابتدائي instead of غير أولي, because *primary* means ابتدائي as in *primary school* and mistakenly, the students translated *non-primary* by just adding the negative particle غير to the Arabic equivalent ابتدائي.

Regarding the faulty strategies that the students utilized in the English polysemes translation error data, literal translation, i.e., word for word translation was the most common rather than giving a modulation or a fixed designation or expression used in Arabic as in the following faulty translation المكتشفات، البنك العالمي، البنك الدولي العالمي، بنك العالم، البنك الدولي الجسم الطبي، جسر الهوة، الدفاع عن الرسالة الخارجي، برامج التبدل، تبادل البرامج، تغيير البرامج، تعديل البرامج، البرامج المتغيرة.

In few cases, the students invented equivalent for items with which they were not familiar such as (*Ion conductance, Potentiation*). In another case they gave a semantically incongruous equivalent (Spatial tasks اعمال فراغية ; chemical plants. نباتات كيميائية. Localization التوضيح; bridge the gap جسر الهوة because there is not verb derived from جسر.

Table 2: Examples of Polysemous English Compounds and Lexical Items with Faulty Arabic Equivalents Given by the Students

English Source Polysemes	Students' Mistranlations	Correct Equivalents
1. adaptation	التأقلم	تكيف أقلمه تهينة توافق
2. adopt	سأخذ	يتبنى
3. adopted for animals	تتبنها الحيوانات	اعتمد للحيوانات، يستخدم للحيوانات
4. alien, alienation	غريب، اغتراب	ابعاد تغريب
5. areas	باحات	مناطق مجالات
6. arms control	تحديد الأسلحة	الحد من التسلح
7. association	الترايطات	جمعية علمية، رابطة
8. associative learning	التعلم الترايطي	التعلم بالتداعي، التعلم بالترايط أو الاقتران
9. bosses	زعماء	رؤساء في العمل، أرباب العمل القيمون على العمل
10. bridge the gap	جسر الهوة	رأب الصدع
11. changes	تبدلات	تغيرات
12. chemical plants	النباتات الكيميائية	مصانع المواد الكيميائية
13. China town	المدينة الصينية	الحي الصيني
14. connections	موصلات	روابط توصيلات واسطات الربط إرتباطات
15. consensus	توافق الآراء	إجماع
16. conservation	محافظة	الحفاظ ترشيد الطاقة
17. cooperative health insurance	الضمان الصحي التعاوني	التامين الصحي
18. creative thinking	التفكير الابداعي	التفكير الابتكاري
19. critical	حيوي	نقدي حرج حاسم
20. deficits	الإعاقات	عجز نقص قصور
21. dichotomy	انفصال	تفرع ثنائي انقسام
22. essence	الذات	الكنه، الجوهر
23. establish an Islamic state	اسلامية المنظمة، بلدة إسلامية، الحالة، حالة في البلاد الاسلامية، ولاية، ولاية الاسلامية	دولة اسلامية
24. exchange programs (83%)	برامج التبدل، تبادل البرامج، تغيير البرامج، تعديل البرامج، البرامج المتغيرة	برامج التبادل
25. experiences	التجارب	خبرات
26. sensory experiences	التجربة الحسية	خبرات حسية/محسوسة
27. family members	أعضاء الأسرة	أفراد الأسرة/المجتمع، أعضاء الفريق/المجلس/البرلمان
28. financial affairs	مسائل مالية	شئون مالية، أمور مالية
29. findings	المكتشفات	النتائج
30. free will	حرية الإرادة	الإرادة المحضة
31. gradient	ميول	الانحدار التدرج
32. human	المخلوق البشري	انسان
33. inferred	تخمين	مستنتج مستخلص
34. insurance	تأمينات	تأمين
35. ion conductance	الناقلية الايونية	التوصيل الأيوني
36. limitations	مثالب	محددات محدوديات محدودية
37. literature review	ادبيات البحث	الدراسات السابقة
38. localization	التوضيح	تحديد موضع، تموضع، جعله محليا، توطين، توطين
39. long-term	طويل الأجل	المدى الطويل/ طويل المدى
40. short-term	قصير الأجل	المدى القصير/ قصير المدى
41. medical body	الجسم الطبي	الهيئة الطبية
42. mobile	متحرك	جوال نقال متنقل
43. non-primary	غير ابتدائي	غير أساسي - غير أولي
44. observation	ملحوظة	ملاحظة

45. opposite direction	الجهة المقابلة	الاتجاه المعاكس
46. pathways	ممرات	المسارات
47. physics & physical	فيزياء & فيزيائي	العالم المادي/ المحسوس/ الملموس العلاج
48. physical world	العالم الفيزيائي	الطبيعي
49. physical therapy	العلاج الفيزيائي	
50. postulate	فرضية	مسلمة
51. potentiation	الكمونية	التقوية
52. qualities	النوعيات	سمات صفات
53. reasoning	جدل	المنطق التفكير الاستدلال
54. retention	حفاظ	تذكر احتفاظ
55. sample	انموذج	عينة
56. spatial tasks	أعمال فراغية	مهام مكانية
57. stimulation	التحريض	اثارة تنشيط تحفيز تنبيه استثارة حث
58. stimulus	حافز	مثير منبه حافز محفز
59. summation	تراكم	خلاصة
60. synchronous	متواقت	متزامن
61. system	نظام	الجهاز الهضمي، المجموعة الشمسية، نظام تعليمي
62. technical	تقني	فني
63. thesis defense	الدفاع عن الرسالة	مناقشة الرسالة
64. translator's resources	موارد المترجم	مصادر المترجم
65. trial & error	التجربة والخطأ	المحاولة والخطأ
66. valid	صحيحة	صديق صالح
67. values education	قيم التعلم	تعليم القيم
68. well-established	معترف	راسخ - مستقر - ناجح
69. WHO (66%)	من	منظمة الصحة العالمية
70. world bank (66%)	البنك العالمي - البنك الدولي العالمي - بنك العالم - البنك الدولي الخارجي	البنك الدولي

4. Discussion

Analysis of the polyseme translation errors has revealed that undergraduate students in the current study made different kinds of errors in translating polysemes from English to Arabic and Arabic to English. This finding is similar to findings of prior studies with Arabic-speaking students in the UAE, Iraq, Yemen and Algeria by Alnamer (2017), Abdulsafi and Al-Sa'adi (2020), Salem (2014), Mohammed (2009), Hamlaoui (2010) and Jalali & Rad (2020).

However, the results of the present study are partially consistent with results of a study by Dodigovic, Ma and Jing (2017). As in the present study, Dodigovic, Ma & Jing found that the most common errors among Chinese students were those caused by L1 polysemy in individual words, followed by multi-word units and collocation errors. In the present study, the subjects made more errors in translating L1 polysemes to English but more polysemic compound translation errors than single-word polyseme errors.

Moreover, results of the English and Arabic polyseme translation errors have revealed that undergraduate students in the current study utilized different faulty strategies in translating polysemous words and compounds. The most common strategy was resorting to literal translation, i.e., word for word translation (*exchange program; findings of study*). The second most common strategy was the tendency to overgeneralize the equivalent that they know or could access to all contexts (*develop, system, association*), not the one that is suitable for a particular context/domain (**chemical plants*). In many polysemes under study, each shade of meaning has a different equivalent. In other cases, the students used erroneous equivalents (*Soviet Unions*; الاتحاد الأوروبي); Spatial tasks أعمال فراغية; chemical plants نباتات كيميائية; Localization التوضع; bridge the gap جسر الهوة).

The faulty strategies that the students utilized in the current study are similar to those found in other studies by the author in which she analyzed errors in translating a variety of structures by student-translators at COLT such as errors in translating common names of chemical compounds (Al-Jarf, 2022c), English and Arabic plurals (Al-Jarf, 2022b; Al-Jarf, 2020), English and Arabic color-based metaphorical expressions (Al-Jarf, 2019), translating Arabic om- and abu-expressions (Al-Jarf, 2017), English and Arabic binomials (Al-Jarf, 2016b), English neologisms (Al-Jarf, 2010a), interlingual pronoun errors (Al-Jarf, 2010b), word+particle collocation (Al-Jarf, 2009), SVO word order errors (Al-Jarf, 2007) and grammatical agreement errors (Al-Jarf, 2000). In all of those studies, literal translation and overgeneralizations were the most common strategies. The students tend to translate imitatively rather than discriminately. Erroneous or invented translations were also found.

On the contrary, the strategies that the students utilized in the current study are different from those used by Vietnamese students in Phuc and Diep's (2018) study. Vietnamese student-translators did not apply word-for-word translation. They used equivalence with polysemy, reduction and borrowing with plural nouns, addition with proper nouns and imperative mood, paraphrase with terminology and idioms, transposition with passive voice and noun phrases.

Furthermore, the polyseme translation errors showed that the sources/causes of faulty English-Arabic and Arabic English translation of polysemes are:

- (1) Inadequate competence in Arabic (L1) as exemplified in the students' inadequate semantic knowledge of some Arabic polysemes. The students do not seem to know the meaning of *ميوول* which means *interests*, *اغتراب* & *تغريب* في رؤساء في *العمل* & *زعماء* *التحريض*, *الدفاع عن الرسالة*, *متوافقت*, *الإرادة المحضة*, *جسر الهوة*, *النباتات الكيميائية*, *العمل* & *زعماء*. They do seem to know that the different Arabic equivalents that exist for 'system' such as *النظام التعليمي*, *المجموعة الشمسية*, *الجهاز الهضمي*, *النظام التعليمي* and the equivalents used in different domains as in *base in chemistry*, *in math*, *in construction engineering*, *in common language*. They are unfamiliar with the specialized meanings of some commonly used Arabic equivalents for English polysemes such as *affairs*; *resources*, *mobile*.
- (2) Lack of proficiency in English (L2), i.e., limited vocabulary knowledge and inaccurate word meaning in English. The students do not seem to know the exact meaning of *critical*, *deficits*, *dichotomy*, *essence*, *bosses*, *connections*, *gradient*, *inferred*, *limitations* and so on. They lack knowledge of and confuse the different designations used in American, British English and Arabic for *وكيل وزراه الخارجية الامريكى - وكيل* *agent*, *deputy*, *vice*, *under secretary* and the regional varieties of the Arabic equivalents used for *Parliament*.
- (3) Lack of background knowledge of some concepts in English such as *exchange programs*; *social security*, *World Bank*, *WHO* and others. They are unfamiliar with specialized meanings of some polysemes (**chemical plants*) and commonly used Arabic equivalents for *affairs*; *resources*, *mobile*.

Here again, as in the sources/causes of polyseme translation errors in the current study, the inadequate competence in Arabic (L1), lack of proficiency in English (L2), and lack of background knowledge were causes of errors in prior studies on the translation of common names of chemical compounds (Al-Jarf, 2022c), plurals (Al-Jarf, 2022b; Al-Jarf, 2020), om- and abu-expressions (Al-Jarf, 2017b), binomials (Al-Jarf, 2016b), neologisms (Al-Jarf, 2010a), pronouns (Al-Jarf, 2010b), word+particle collocations (Al-Jarf, 2009), SVO word order errors (Al-Jarf, 2007), grammatical agreement (Al-Jarf, 2000) and lack of background knowledge in Interpreting (Al-Jarf, 2018a).

5. Recommendations

Undergraduate student-translators in the present study have numerous problems in translating polysemes from English to Arabic and Arabic to English. To help develop students' competence in translating English and Arabic polysemes, the current study recommends the following:

- 1) Since in most cases, there is no one-to-one correspondence between English and Arabic lexical meaning of polysemes, a single-word polyseme or a polysemous compound might have one meaning used in a variety of contexts as in the English polyseme *base* which is used in mathematics, engineering, chemistry and common language, therefore, the students need to check the meaning of polysemous words, and polysemous compounds first in a monolingual English or Arabic dictionary such as Webster, Longman and Almaany Online dictionaries to learn the related parts of speech, derived forms, the range of meanings, the domains and contexts in which each meaning is used and other details (Al-Jarf, 2022f; Al-Jarf, 2020a; Al-Jarf, 2014).
- 2) Developing students' vocabulary repertoire and word knowledge accuracy by listening to mobile audiobooks and mobile reading and vocabulary apps and tasks (Al-Jarf, 2022d; Al-Jarf, 2022e). Teach the different meanings of polysemes in context and use mind maps to connect polysemous words and compounds with their meanings, domains, and contexts (Al-Jarf, 2022a; Al-Jarf, 2021c; Al-Jarf, 2015a; Al-Jarf, 2006a).
- 3) Training the students to analyze the context around the polysemic word or compound, i.e., using the different types of semantic and structural contextual clues in the text they are about to translate before they translate it and identify the domain in which the polysemous word or compound is used (Al-Jarf, 2001).
- 4) Developing students' specialized vocabulary by reading and analyzing specialized text such as news headlines and news stories, advertisements, scientific texts, medical terms and business texts (Al-Jarf, 2021b; Al-Jarf, 2018b; Al-Jarf, 2007a); Al-Jarf, 2006b; Al-Jarf, 1998).
- 5) If the students use Google Translate to get the equivalent of a polysemous lexeme or compound, they should not take the translation for granted and should check other dictionaries to find a meaning that is suitable for a particular context. Google translation of compounds gives faulty word order. It is also inconsistent in translating terms with varying prefixes, roots combined with the same suffix, compounds, and blends (Al-Jarf, 2021a; Al-Jarf, 2016a).

- 6) Developing students' grammatical competence and awareness of translation issues to be taken into consideration when translating singular/plural forms, compounds, tenses, and when to attach the definite article to a polyseme using online learning tasks and translation activities (Al-Jarf, 2022b; Al-Jarf, 2020c; Al-Jarf, 2017; Al-Jarf, 2005; Al-Jarf, 2000).
- 7) Developing students' awareness of the differences between English and Arabic derived forms of polysemes and English and Arabic compound structures, compound types and when to start with first constituent and second constituent of the compound in translation, when derived nouns, adjectives or adverbs have the same meaning and when they have different meanings (Al-Jarf, 2015b; Al-Jarf, 2004).
- 8) Developing students' schemata and world (background) knowledge through reading mobile books, newspaper, and magazine articles. The students may read texts about the same topic or news story in both English and Arabic to learn the technical terms used in L1 and L2 especially those that are structurally dissimilar (Al-Jarf, 2018a).
- 9) Developing metacognitive skills, i.e., thinking processes while translating, i.e., thinking about the variety of meanings of the polyseme in the SL and TL, the specific context and field it is used in, its parts of speech and so on.
- 10) Engaging students in collaborative and interactive translation practice of English and Arabic polysemes using social media such as Twitter and Facebook, online discussions forums, online learning management systems, and blogs (Al-Jarf, 2020b; Al-Jarf, 2008; Al-Jarf, 2017a).

As undergraduate student-translators have difficulties in figuring out the correct equivalent for a polyseme in the TL, they also have difficulties distinguishing synonyms and near synonyms and in which cases they are similar or dissimilar equivalents. The difficulties that student-translators have in translating polysemes that are synonyms and near synonyms from L1 to L2 and vice versa are still open for further investigation by Arab researchers in the future.

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

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