

## The Inclusion of Polysemes in Non-native English Textbooks: A Corpus-based Study

**Hicham Lahlou**

English Language Studies, School of Humanities,  
Universiti Sains Malaysia, Penang, Malaysia  
Corresponding Author: [hlahlou2003@hotmail.com](mailto:hlahlou2003@hotmail.com)

**Hajar Abdul Rahim**

English Language Studies, School of Humanities,  
Universiti Sains Malaysia, Penang, Malaysia

Received:01/26/2023

Accepted:05/09/2023

Published: 06/24/2023

### Abstract

Despite the large number of studies conducted on polysemy, they mostly compare the different methods and techniques to learn a language and establish the extent to which particular sense relations facilitate the learning of second language vocabulary. To our best knowledge, no research has been conducted to determine whether or not polysemy is emphasized in non-native English textbooks. The objective of the present research was to determine the degree to which polysemy is incorporated in English textbooks. Thus, the research question guiding the current study is: To what extent is polysemy incorporated in non-native English textbooks? The study is a corpus-based research that used a data set of 500 words, i.e., 250 words from each of the two books, utilizing the *Sketch Engine* word list tool and concordance. The polysemy of the resulting words in the concordance lines generated was semantically annotated manually using *WordNet* and English dictionaries. The results indicated that polysemy is barely stressed in the textbooks under investigation. The study's results have substantial implications for polysemy in particular and second or foreign language teaching in general.

**Keywords:** Corpora, English textbooks, polysemy, second language, vocabulary

**Cite as:** Lahlou, H. , & Abdul Rahim, H. (2023). The Inclusion of Polysemes in Non-native English Textbooks: A Corpus-based Study. *Arab World English Journal*, 14 (2) 19-29.  
DOI: <https://dx.doi.org/10.24093/awej/vol14no2.2>

## 1. Introduction

To grasp information, concepts, and the meanings of words, an individual needs encyclopedic knowledge. It will be easier to understand a subject with prior knowledge. Also, if they only know one meaning of a word, it will be hard to understand what it means when used differently. According to Cienki (2007), bodily, social, and cultural experiences shape people's background knowledge. Language represents reality in the way that individuals interpret it. Words are not containers of meaning; they provide access to encyclopedic knowledge or a cognitive network (Langacker, 1987; Kecskes, 2013).

When someone hears or reads a word, their prior knowledge is triggered, which implies that the word prompts them to consider all the concepts and thoughts that go with it. A person learning a second language (L2) should pay attention to the word associations made by a native speaker. These associations, as well as the non-language variables to which they are connected, e.g., cognitive structure, meaning, and cultural experience, to use Szalay and Windle's (1968) examples, may differ from the word associations in his or her native language.

The variation between a learner's first language and English in terms of word polysemous meanings adds to the difficulties faced by English language learners in learning polysemous meanings. For example, Spanish speakers who learn the English word *fingers* use it to refer to *toes* as well because the Spanish term *dedos* is inclusive of both *fingers* and *toes* (Celce-Murcia & Larsen-Freeman, 1999). The textbooks for teaching English to non-native speakers should likewise include ideas from the students' cultures and emphasize polysemy. This guarantees that, given their past knowledge, they comprehend things accurately and know a word's multiple meanings to avoid misusing a sense in a different context (Nation, 2013).

Despite the different methods and approaches suggested and applied, the research on English language vocabulary learning indicates that acquiring vocabulary continues to be a significant barrier for non-native English students. Developing vocabulary involves various aspects, such as semantics, phonology, morphology, and syntax (Kalyuga & Kalyuga, 2008; Christison & Murray, 2014). Students who just memorize lists of individual words miss out on a variety of opportunities to learn the language, including the chance to get familiar with the figurative and metonymic meanings of words as well as the linguistic and cultural particularities of the target language. Learners who appreciate the function of conceptual metaphor and conceptual metonymy are better equipped to comprehend and memorize polysemous words, as well as idioms, with ease (Beréndi, Csábi and Kövecses, 2008; Pérez, 2017). Moreover, recognizing the link between source and target domains via metaphorical and metonymic mappings will make abstract concepts more accessible to students (Lahlou & Hajar, 2013; Lahlou, 2021; 2023).

It is more accessible to learn words with more than one meaning than to learn each term separately. English language students should know how words' different meanings relate to each other and how to use figurative words and phrases. Synonymy, polysemy, and homonymy are the sense relations that have been the subject of several studies on vocabulary. Even though these research contributions are valuable, they mostly argue over how to categorize the distinctions between multiple meanings (Raukko, 2003, as cited in Clemmons, 2008), compare the different methods and techniques to learn a language and determine how well certain sense relationships help people learn L2 vocabulary. To what extent polysemy is employed in English textbooks for non-native speakers has yet to be studied.

The prevalence of polysemy in the English language inspired the present study. Numerous studies, such as Durkin and Manning (1989) and Abou-Khalil et al. (2019), have shown that over forty percent of English words are used with more than one meaning. These polysemous words are significant because they are in the top 3000 most often-used words in the English language (Makni, 2013; Ferrer-i-Cancho, 2014). It is also an essential part of vocabulary since it helps students of a second or foreign language deduce the meaning of words when they learn that they have several meanings. So, studies of vocabulary should account for polysemy. And it is vital to conduct a frequency study of both individual words and the many senses in which they are used (Schmitt, 2010). The present study aims to determine the degree to which polysemy is used in the chosen English textbooks.

## 2. Literature Review

Much research on high-frequency words in vocabulary instruction has been conducted. By guaranteeing that the terms learned are encountered often, frequency information provides a realistic foundation for maximizing students' vocabulary learning efforts (Nation & Waring, 1997). More beneficial than less frequent words, high-frequency words demand more attention in a language classroom since students encounter them more often and are more likely to memorize them (Vilkaitė-Lozdienė & Schmitt, 2020). However, occurrence range is only one critical factor among others when building a frequency list.

A vocabulary frequency list that considers various texts is vital for curriculum development and determining learning goals (Nation & Waring, 1997). However, the variety of settings in which the words are encountered is even more important than their frequency. According to this viewpoint, terms used in a broad range of settings are reacted to more effectively than those used in a narrow range of settings (Brybaert, Mandera, & Keuleers, 2018). According to Johns, Dye, and Jones (2016), when people encounter novel words in various discourse contexts, they recognize them more quickly and accurately than when the terms are provided in the same circumstance again. Other essential elements of a vocabulary frequency list include idioms and information diversity, which have differences in meaning (Nation & Waring, 1997). In building a frequency list, polysemy is essential, among others. Some words' frequency of occurrence and likelihood of having multiple meanings are linked. Zipf proposed that frequency and polysemy were related because of the economy principle (Zipf, 1949, as cited in Clemmons, 2008).

Unlike a monoseme, a polyseme has numerous meanings. And there is a systematic relationship between these meanings (Lakoff, 2008; Csábi, 2004; Dölling, 2018). For example, the term *warm* may refer to "temperature" and "clothes that make one feel warm" (Lakoff, 2008). In contrast, homonyms are words whose meanings are not systematically connected. To use Lakoff's (2008) example, the term *bank* contains meanings that are not systematically connected, such as "place where one deposits money" and "river's edge." In cognitive linguistics, polysemy is a 'radial category,' with linked senses ranging from prototypical to peripheral. Polysemous expressions demand a radially organized category, with a central member and links specified by image-schema transformations and metaphors and with the noncentral senses being motivated by less central examples, image-schema transformations, and metaphorical models (Lakoff, 2008).

Previous research has proven polysemy to be a significant barrier to text comprehension. Like in many other languages, polysemy is prevalent in the English language. Nonetheless, the complicated link between form and meaning in English makes learning and utilizing vocabulary challenging (e.g., Schmitt, 2010; Mitsugi, 2017). Evidence from various studies suggests that

youngsters can better predict the meanings of words that are not polysemous (Saemen, 1970; Nation, 2013). Students may develop their understanding of these words autonomously. In contrast, polysemes are more difficult to predict based on context.

English language learners may acquire one sense of a polysemous word and believe it has only one meaning, especially in the early phases of language learning. This situation is likely to occur since many of the most prevalent terms in English are polysemous (Clemmons, 2008; Lahlou, 2022). Learners may comprehend the meaning based on the familiar form, yet the sense might be irrelevant in other contexts (Saemen, 1970; Nation, 2013). However, this does not mean that the multiple meanings and figurative language should be ignored in English instruction and teaching materials. According to Amaya-Chávez (2010), literal meanings are generally taught in the early levels, whereas figurative meanings are only addressed in more advanced courses. This trend may also be found in several English teaching resources. However, figurative language should be present from the beginning of learning English, but selecting semantic extensions and content sequencing is more crucial (Piquer-Píriz, 2011). Thus, it is projected that polysemy will be progressively emphasized in vocabulary instruction and English textbooks as learners progress through the grades. Furthermore, teachers' understanding and application of semantic extension in teaching vocabulary are crucial for boosting students' comprehension and retention of word meanings (Boers, 2008).

### 3. Methodology

Textbooks are crucial, even if they are not the sole resource instructors utilize to deliver teaching and help students achieve the intended learning outcomes, particularly in settings with limited resources, such as rural areas. They provide an alternative to the time and financial waste. It is possible that textbook graphics are more effective than the explanations provided by teachers. Moreover, textbooks may provide materials that are difficult to take to class (González, 2006). They are also used to guarantee that schools, where English is taught as a second or foreign language, teach a standard form of English and that the quality of this English meets international norms. To this purpose, several European and non-European nations, including Malaysia, Thailand, and Vietnam, adopted the Common European Framework of Reference (CEFR), an international standard that aids in improving and measuring English language proficiency among learners (Don et al., 2015; Nguyen, 2015).

Because many countries use it worldwide, the CEFR has become a modern educational trend, particularly in language learning, teaching, and assessments. According to a 2007 survey, the CEFR, used globally to motivate curricular, teaching, and assessment innovation, has become the most influential publication in language education (Council of Europe, 2021). The authors, therefore, chose CEFR-aligned English textbooks as one of the most critical instruments and sources of information for determining the extent of polysemy incorporation in English textbooks. The current study looks into two English textbooks used in non-English speaking secondary schools: *Close-up* for intermediate secondary students and *Full Blast Plus 4* for upper secondary students. *National Geographic Learning* and *MM publications* released these textbooks, respectively. The emphasis of Healan and Gormley's (2015) *Close-Up*, which consists of 12 units, is intermediate English. Mitchell and Malkogianni's (2018) *Full Blast Plus 4*, which consists of eight units, focuses on upper-intermediate English.

The study used data of 500 words, i.e., 250 words from *Close-up* and 250 words from *Full Blast Plus 4*. To gather data on polysemy, the authors employed the *Sketch Engine* word list tool

to compile a list of the top 250 most commonly used terms in each of the subcorpora: *Close-up* and *Full Blast Plus 4*, uploaded onto *Sketch Engine*. The data was then filtered to only polysemous content words, excluding function words and homonyms. To determine the degree to which polysemy is included in the textbooks concerned, the authors searched the concordance lines for the polysemous terms identified one by one. The polysemy of the search words in the concordance lines generated was semantically annotated manually (Brown et al., 2005) using *WordNet* and English dictionaries, including etymological dictionaries, as a guide to the actual meanings of the resulting polysemes. As the current study focuses on polysemous words, dictionaries were used in conjunction with *WordNet* to help with identifying polysemous words because the latter helps find multiple senses, definitions, examples, and so on (Brown et al., 2005); however, it does not provide information about the difference between polysemy and homonymy (Freihat et al., 2013).

#### 4. Results and Discussion

To identify the degree to which polysemy was employed in the books under study, the top 250 most commonly used words in *Close-up* and the top 250 most frequently used words in *Full Blast Plus 4* were selected for analysis using the *Sketch Engine* Wordlist generation of the word frequency lists. After data filtration, the number of polysemous content words in the data sample discovered was 110 for *Close-up* and 103 for *Full Blast Plus 4*. The resulting lemmas were classified as verbs, nouns, adjectives, and adverbs. As outlined in Table 1, 75 polysemous words selected from each textbook under investigation were identical (see Table 1). This similarity was invaluable in establishing if *Close-up* and *Full Blast Plus 4* use the same or different meanings for these common words.

Table 1. *Close-Up and Full Blast Plus 4's Selected Polysemes*

Close-Up		Close-Up & Full Blast Plus 4				Full Blast Plus 4	
carefully	important	be	look	thing	past	just	always
mountain	eat	have	see	ask	come	become	car
useful	different	do	give	try	place	boy	game
remember	underline	use	new	sentence	happen	back	let
expression	long	word	now	watch	decide	art	keep
sport	house	go	year	need	learn	follow	person
study	young	read	show	find	change	discuss	computer
describe	leave	make	work	day	next	part	job
love	plan	people	know	play	well	really	even
food	continuous	get	talk	form	way	call	home
partner	picture	think	take	other	week	film	opinion
teacher	complete	write	student	start	hear	girl	stop
olive	like	time	help	information	buy	feel	man
finish	option	say	idea	tell	great	money	shop
family	example	very	want	friend	same	perfect	only
report	music	good	question	simple	note	last	
future	task	answer	first	choose	text		
world		action	listen	correct	live		
		perfect		only	last		

Based on the concordance lines retrieved from the corpora, 39 of the 110 polysemes in *Close-up* were employed with a single sense despite having two to ten related senses. It was also discovered that 27 of the 110 polysemes were utilized with two meanings, although they have three to thirty-five related meanings (see Figure 1).

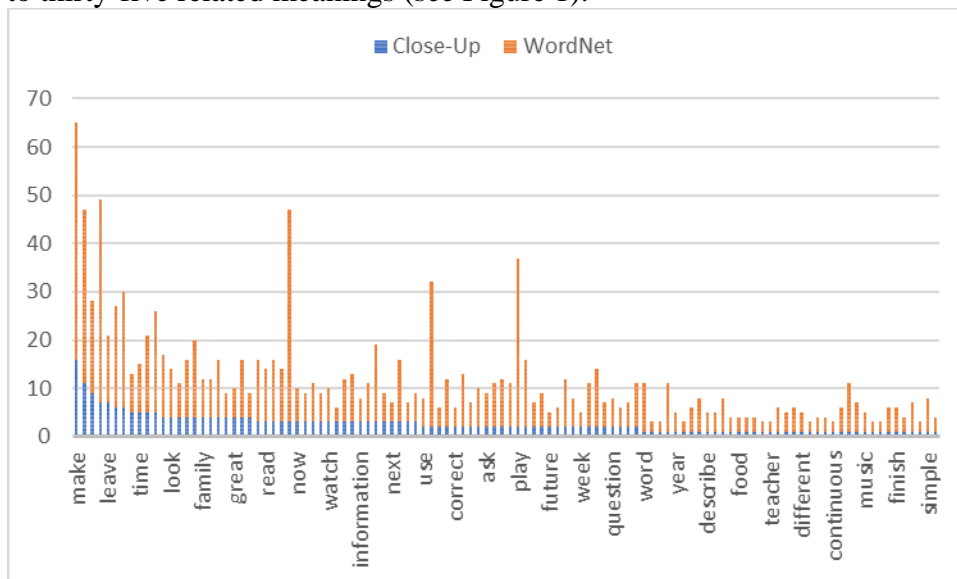


Figure 1. Close-Up’s Word Meanings v WordNet’s Word Meanings

In comparison, 28 of the 103 polysemes in *Full Blast Plus 4* were used with a single meaning despite having related meanings ranging from two to eleven. Besides, 31 polysemes were used with two senses, though they have a range of three to twenty-eight related meanings (see Figure 2).

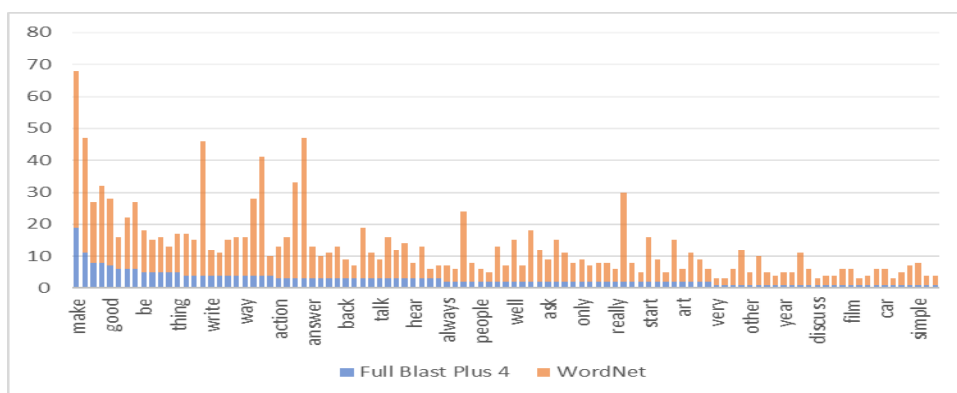


Figure 2. Full Blast Plus 4’s Word Meanings v WordNet’s Word Meanings

To determine whether there is any gradual introduction of new or different meanings from *Close-up* and *Full Blast Plus 4*, the 75 common words in these textbooks were investigated. According to *WordNet*, 15 of the 75 common words in *Close-up* and *Full Blast Plus 4* were employed with just one sense, even though the real meanings of these words span anywhere from two to ten. Moreover, these words had the same basic literal sense in both textbooks. 29 of the common terms whose use ranges from two to eleven senses in both textbooks were used with the same number of senses and with the same meanings. The number and diversity of senses for 18 of

the 75 common words in these textbooks increased slightly in *Full Blast Plus 4*, except for the verb *to make*, which gained three more meanings. This shows minimal progress in the process of introducing new senses. However, the meanings of 13 of the common words in *Full Blast Plus 4* decreased. Some of these terms brought new senses or semantic projections, while others were either repeating the same senses and contexts or repeating the same senses with fewer semantic expansions.

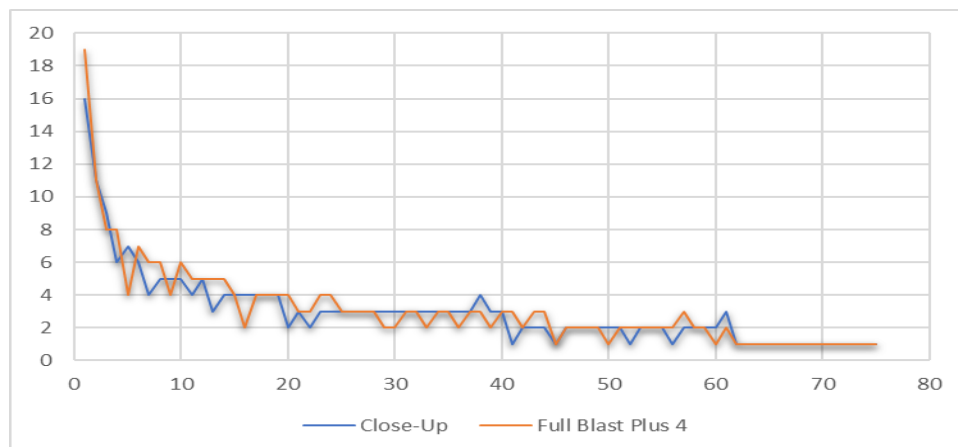


Figure 3. Meanings of Close-up and Full Blast Plus 4's Common Words

Overall, these results would seem to suggest a minimal emphasis on polysemy, mainly when the data consists of the top 250 words from each of the textbooks under investigation, which belong to different levels, that is, intermediate and upper-intermediate.

## 5. Conclusion

Polysemy, one of the significant components of vocabulary that, if not mastered, may be a considerable barrier to acquiring language and enhancing understanding, was the focus of the current research. The study aimed to determine the degree of polysemy in *Close-up* and *Full Blast Plus 4*. Both textbooks shared the majority of the polysemes identified. Despite the intermediate level, where concrete and literal meanings with some extended meanings were already introduced, and the gap between the intermediate and upper-intermediate levels, over a quarter of the polysemes in each of these two textbooks were used with only one meaning, and another quarter were used with only two meanings. Importantly, less than a quarter of the common polysemes had a minor rise in the number of senses and variety of meanings. According to these results, the selected English textbooks did not emphasize the multiple meanings of words.

These results are in line with prior research that found a lack of emphasis on polysemy and meaning extensions in English instruction in general and word lists used in teaching materials in particular (e.g., Nation & Waring, 1997; Clemmons, 2008; Piquer-Píriz, 2011). Thus, the current study's results support Krashen's (2004) criticism of teaching word lists that include the most commonly used words in the English language but provide only superficial senses of words and fail to address the multiple grammatical usages and meanings they may have (Krashen, 2004, as cited in Clemmons, 2008).

The results of the current study provide insightful new information on the status of polysemes' employment in the English textbooks selected for this study. The study's results have significant implications for polysemy in particular and second/foreign language education. The

results about the degree to which polysemy is included in these textbooks alert educators to the reality of polysemes in English textbooks for non-native students. It is thus recommended that teachers become less reliant on non-native English textbooks in the long run and employ diverse instructional resources and improvised materials, which some teachers already do, to be able to teach their students words' multiple senses, taking into account factors like their learners' age and grade, communicative needs and developing knowledge of the world need (Piquer-Píriz, 2011). They should also utilize diverse approaches to teaching polysemes, especially the cognitive linguistics-oriented approaches, gradually making them aware of the cognitive mechanisms that motivate semantic extension. This study employed a sample of the top 250 most common words in each of the two English textbooks. Future studies on polysemy will need to sample more polysemes and other English textbooks to attain more exhaustive data.

### Acknowledgement

This research is funded by Universiti Sains Malaysia Short Term Research Grant (No. 304/PHUMANITI/6315486).

### About the Authors

**Hicham Lahlou** (Ph.D.) is a Senior Lecturer at the English Language Studies Section, School of Humanities, Universiti Sains Malaysia. His research interests include cognitive linguistics, semantics, morphology, and corpus linguistics.

<http://orcid.org/0000-0003-2796-9877>

**Hajar Abdul Rahim** (Ph.D.) is a professor of linguistics at the English Language Studies Section, School of Humanities, Universiti Sains Malaysia. Her current research interests include TESL, Corpus Linguistics and Lexical Studies.

<https://orcid.org/0000-0002-6852-9766>

### References

- Abou-Khalil, V., Helou, S., Flanagan, B., Chen, M. R. A., & Ogata, H. (2019). Learning isolated polysemous words: identifying the intended meaning of language learners in informal ubiquitous language learning environments. *Smart Learning Environments*, 6(1), 13. <https://doi.org/10.1186/s40561-019-0095-0>
- Aitchison, J. (2012). *Words in the mind: An introduction to the mental lexicon* (4th ed). Chichester, UK: John Wiley & Sons.
- Amaya-Chávez, E. (2010). The gaps to be filled: the (mis)treatment of the polysemous senses of *hand*, *cool* and *run* in EFL text books. In Low, G., Todd, Z., Deignan, A. & Cameron, L. (eds.), *Researching and applying metaphor in the real world* (pp. 81–104). Amsterdam & Philadelphia: John Benjamins.
- Beréndi, M., Csábi, S., & Kövecses, Z. (2008). Using conceptual metaphors and metonymies in vocabulary teaching. In F. Boers and S. Lindstromberg (eds). *Cognitive linguistic approaches to teaching vocabulary and phraseology*, 65–98. Berlin: Mouton de Gruyter.



- Boers, F., & Lindstromberg, S. (2008). How cognitive linguistics can foster effective vocabulary teaching. In F. Boers and S. Lindstromberg (eds.), *Cognitive linguistic approaches to teaching vocabulary and phraseology* (pp.1-61). Berlin: Mouton de Gruyter.
- Brown, J., Frishkoff, G., & Eskenazi, M. (2005, October). Automatic question generation for vocabulary assessment. In *Proceedings of Human Language Technology Conference and Conference on Empirical Methods in Natural Language Processing* (pp. 819-826).
- Brysbaert, M., Mandera, P., & Keuleers, E. (2018). The word frequency effect in word processing: An updated review. *Current Directions in Psychological Science*, 27(1), 45-50. <https://journals.sagepub.com/doi/10.1177/0963721417727521#:~:text=https%3A//doi.org/10.1177/0963721417727521>
- Celce-Murcia, M., & Larsen-Freeman, D. (1999). *The grammar book: An ESL/EFL teacher's course* (2<sup>nd</sup> ed.). United States: Heinle & Heinle.
- Cienki, A. (2007). Frames, Idealized Cognitive Models, and Domains. In Geeraerts, D. & Cuyckens, H. (eds.). *The Oxford Handbook of Cognitive Linguistics*. New York: Oxford University Press.
- Clemmons, K. (2008). *The problem of polysemy in the first thousand words of the General Service List: A corpus study of secondary chemistry texts*. University of Central Florida.
- Council of Europe. (2021). Historical overview of the development of the CEFR. Retrieved from <https://www.coe.int/en/web/common-european-framework-reference-languages/history>
- Christison, M., & Murray, D. (2014). *What English language teachers need to know: Designing curriculum*. New York: Routledge.
- Csábi, S. (2004). A cognitive linguistic view of polysemy in English and its implications for teaching. *Cognitive linguistics, second language acquisition, and foreign language teaching*, 233, 256.
- Dölling, J. (2018). *Systematic polysemy*. The Blackwell companion to semantics.
- Don, Z. M., Abdullah, M. H., Abdullah, A. C., Lee, B. H., Kaur, K., Pillai, J., & Hooi, M. Y. (2015). *English Language Education Reform in Malaysia: The Roadmap 2015-2025*. Putrajaya: Ministry of Education.
- Durkin, K., & Manning, J. (1989). Polysemy and the subjective lexicon: Semantic relatedness and the salience of intraword senses. *Journal of Psycholinguistic Research*, 18(6), 577-612. <https://doi.org/10.1007/BF01067161>
- Ferrer-i-Cancho, R. (2014). The meaning-frequency law in Zipfian optimization models of communication. *arXiv preprint arXiv:1409.7275*. <https://doi.org/10.48550/arXiv.1409.7275>
- Freihat, A. A., Giunchiglia, F., & Dutta, B. (2013). Regular polysemy in wordnet and pattern based approach. *International Journal On Advances in Intelligent Systems*, 6.
- González Moncada, A. (2006). On materials use training in EFL teacher education: Some reflections. *Profile Issues in Teachers Professional Development*, (7), 101-116.
- Johns, B. T., Dye, M., & Jones, M. N. (2016). The influence of contextual diversity on word learning. *Psychonomic Bulletin & Review*, 23, 1214–1220. <https://doi.org/10.3758/s13423-015-0980-7>
- Kalyuga, M., & Kalyuga, S. (2008). Metaphor awareness in teaching vocabulary. *Language Learning Journal*, 36(2), 249-257. <https://doi.org/10.1080/09571730802390767>

- Keckes, I. (2013). Intercultures, encyclopedia knowledge, and cultural models. In Sharifian, F., & Jamarani, M. (eds.), *Language and Intercultural Communication in the New Era* (pp.39-59). New York: Routledge.
- Lahlou, H., & Hajar, Abdul Rahim. (2013). A Cognitive Linguistic Analysis of the Concept TEMPERATURE in English and Arabic. *Arab World English Journal*. Special Issue on Translation, 2, 118-128.
- Lahlou, H. (2021). *Concepts in Physics: A Comparative Cognitive Analysis of Arabic and French Terminologies*. Kuala Lumpur: Institut Terjemahan & Buku Malaysia (ITBM).
- Lahlou, H. (2022, December 1–2). A Corpus Analysis of Polysemy in CEFR-Based English Textbooks [Conference Presentation]. 6th International Conference on Linguistics, Literature and Culture, Universiti Sains Malaysia (USM), Penang, Malaysia. <https://doi.org/10.13140/RG.2.2.13189.42729>
- Lahlou, H. (2023). The Cognitive Mechanisms Underlying the Concept of سرعة (Speed) in Arabic. *Arab World English Journal for Translation and Literary Studies*, 7(1). 21-32. <http://dx.doi.org/10.24093/awejtls/vol7no1.2>
- Lakoff, G. (2008). *Women, Fire, and Dangerous Things: What Categories Reveal About the Mind*. Chicago and London: The University of Chicago Press.
- Langacker, R. W. (1987). *Foundations of Cognitive Grammar: Theoretical prerequisites* (Vol. 1). California: Stanford University Press.
- Makni, F. (2013). *Teaching Polysemous Words to Arab Learners: A Cognitive Linguistics Approach* (Doctoral dissertation, University of the West of England).
- Mitsugi, M. (2017). Schema-Based Instruction on Learning English Polysemous Words: Effects of Instruction and Learners' Perceptions. *Journal of Pan-Pacific Association of Applied Linguistics*, 21(1), 21-43.
- Nation, P., & Waring, R. (1997). Vocabulary size, text coverage, and word lists. In Schmitt, N., & McCarthy, M. (eds.), *Vocabulary: Description, Acquisition, and Pedagogy* (pp. 6-19). Cambridge: Cambridge University Press.
- Nation, I.S.P. 2013. *Learning Vocabulary in Another Language*. Cambridge, UK: Cambridge University Press.
- Nguyen, N. H. (2015). Vietnam's National Foreign Languages Project 2020: Challenges, Opportunities, and Solutions (pp. 62-64). In Bigalke, T. W., & Sharbawi, S. (eds.), *English for ASEAN Integration: Policies and Practices in the Region*. Brunei: Universiti Brunei Darussalam.
- Pérez, R. G. (2017). Teaching Conceptual Metaphors to EFL Learners in the European Space of Higher Education. *European Journal of Applied Linguistics*, 5(1), 87. <https://doi.org/10.1515/eujal-2015-0036>
- Piquer-Píriz, A. M. (2011). Motivated word meanings and vocabulary learning: The polysemy of hand in the English for Young Learners classroom. *Metaphor and the social world*, 1(2), 154-173.
- Saemen, R. A. (1970). Effects of Commonly Known Meanings on Determining Obscure Meanings of Multiple-Meaning Words in Context. Report from the Project on Individually Guided Elementary Language Arts.
- Schmitt, N. (2010). *Researching vocabulary: A vocabulary research manual*. Springer.

- Szalay, L. B., & Windle, C. (1968). Relative influence of linguistic versus cultural factors on free verbal associations. *Psychological reports*, 22(1), 43-51.  
<https://psycnet.apa.org/doi/10.2466/pr0.1968.22.1.43>
- Vilkaitė-Lozdienė, L., & Schmitt, N. (2020). Frequency as a guide for vocabulary usefulness: high-, mid-, and low-frequency words. In Webb, S. (ed.), *The Routledge handbook of vocabulary studies* (pp. 81-96). London: Routledge.