

A REVIEW ON THE APPLICATION OF SENSE RELATIONS IN TEACHING VOCABULARY

Nguyen Thuy Anh, La Thi Hoang Lan*

TNU - School of Foreign Languages

ARTICLE INFO		ABSTRACT
Received:	17/6/2025	This paper critically reviews previous empirical studies on the application of sense relations in vocabulary instruction to highlight gaps and minimally addressed issues, providing directions for future research within the Vietnamese context. Employing a systematic literature review methodology, approximately 10 relevant publications, including journal articles, dissertations, and conference proceedings, were rigorously selected and analyzed. The findings demonstrate that sense-relation approaches (synonymy, antonymy, hyponymy, collocations) often result in significant improvements in lexical knowledge, retention, and productive usage compared to traditional vocabulary instruction methods. However, some studies have indicated potential drawbacks, such as cognitive overload and short-term interference, when semantic groupings are excessively dense. Notably, the review also identifies substantial methodological limitations across the literature, including reliance on single-instrument measures, small and homogeneous sample sizes, and a predominant focus on theoretical or textbook analyses lacking empirical validation. Moreover, the scarcity of research specifically conducted in Vietnamese educational settings further underscores the urgent need for large-scale, longitudinal, mixed-method investigations. Consequently, future research should explicitly address these methodological and contextual shortcomings to effectively determine how sense-relations pedagogy can best support vocabulary development among Vietnamese learners of English as a foreign language.
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NGHIÊN CỨU TỔNG QUAN VỀ ỨNG DỤNG CÁC QUAN HỆ NGŨ NGHĨA TRONG GIẢNG DẠY TỪ VỰNG

Nguyễn Thúy Anh, La Thị Hoàng Lan*

Trường Ngoại ngữ - ĐH Thái Nguyên

THÔNG TIN BÀI BÁO		TÓM TẮT
Ngày nhận bài:	17/6/2025	Bài báo này trình bày tổng quan hệ thống các nghiên cứu thực nghiệm về ứng dụng quan hệ ngữ nghĩa trong giảng dạy từ vựng, qua đó xác định khoảng trống nghiên cứu và gợi ý hướng mới cho bối cảnh Việt Nam. Thông qua tổng quan hệ thống, mười ấn phẩm liên quan được tuyển chọn và phân tích. Kết quả cho thấy các cách tiếp cận dựa trên đồng nghĩa, phản nghĩa, quan hệ phân cấp và kết hợp từ thường cải thiện rõ tri thức, khả năng ghi nhớ và sử dụng từ so với phương pháp truyền thống. Tuy nhiên, một số nghiên cứu cảnh báo nguy cơ quá tải nhận thức và nhiều ngắn hạn khi nhóm nghĩa quá dày. Phần lớn tài liệu còn hạn chế phương pháp: dùng một công cụ đo đơn lẻ, cỡ mẫu nhỏ, đồng nhất và thiên về phân tích lý thuyết chưa kiểm chứng thực tiễn. Thiếu vắng nghiên cứu tại Việt Nam càng nhấn mạnh nhu cầu thực hiện các công trình quy mô lớn, đa phương pháp nhằm đánh giá hiệu quả dạy từ vựng theo quan hệ ngữ nghĩa cho người học tiếng Anh như ngoại ngữ ở Việt Nam.
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* Corresponding author. Email: lahoanglan.sfl@tnu.edu.vn

1. Introduction

Vocabulary is an essential linguistic knowledge for English learners, as Wilkins (as cited in [1, p.13]) claimed that: "[...] without vocabulary, nothing can be conveyed". However, vocabulary acquisition is never a short-term and effortless process. Recent research highlights various challenges students face. For instance, Ag et al. [2] found that students frequently struggle with pronunciation, spelling, and identifying the correct meanings of words in context. Similarly, Rosyada and Apoko [3] identified difficulties in correctly spelling and pronouncing words, developing vocabulary skills, using words appropriately, and understanding connotations. These challenges underscore the critical need for effective instructional strategies. Therefore, students must be instructed on effective strategies and methods for learning word meanings effectively. This process of imparting knowledge and skills related to new words to learners is broadly referred to as teaching vocabulary. As affirmed in [4, p.226], "teaching vocabulary can be a complex task, requiring innovative and effective strategies", highlighting the dynamic nature of this pedagogical endeavor.

In semantics, words are believed to exist and correlate with each other in a network rather than just a list of unrelated lexemes [5]. The meaning of a word, thus, "depends in part on its associations with other words" [6, p.46], and this meaning can also be called "sense". These systemic connections between words, describing how their meanings relate to one another, are known as sense relations. As defined in [7, p.25], sense relations are "the semantic relationships between words", which include well-known categories such as synonymy (words with similar meanings like happy and joyful), antonymy (words with opposite meanings like hot and cold), and hyponymy (where the meaning of one word is included in a more general word, e.g., dog is a hyponym of animal). Nghiem [8] further supports this view by emphasizing that effective vocabulary teaching goes beyond simple memorization. It involves helping learners grasp the complex connections among words such as synonyms, antonyms, hyponyms, and homonyms which serve as a foundation for enhancing both vocabulary comprehension and usage. As a result, teachers are recommended to introduce vocabulary concerning these sense relations between them. By applying this vocabulary teaching method, students' ability to memorize words is expected to be enhanced remarkably.

Due to the aforementioned correlation between vocabulary learning and sense relations, a large number of studies have been conducted to examine the effect of using sense relations in vocabulary teaching. Numerous researchers have emphasized the role of semantic relationships such as synonymy, antonymy, hyponymy, and collocation in promoting deeper lexical understanding and long-term retention. For instance, Nation [9] argued that once learners have acquired some foundational vocabulary knowledge, encountering semantically related words in sets can have a beneficial effect on learning outcomes. These findings illustrate that structured instruction involving sense relations can facilitate word meaning inference and enhance lexical depth.

However, few studies have shed light on the specific context of Vietnamese adult students. For example, Le [10] observed that Vietnamese university students rarely employed organized sense-relation strategies, such as semantic mapping or collocation awareness, indicating a notable gap in pedagogical application. While the literature on vocabulary instruction has grown, few studies systematically compare how sense relations are implemented and evaluated across different teaching contexts. One notable exception is Al-Khawaldeh et al. [11], where explicit instruction in semantic relations led to significant gains in English as a foreign language (EFL) learners' vocabulary awareness. However, broader, context-spanning evaluations remain lacking. Moreover, most existing studies tend to focus on isolated aspects of sense relations or are limited to theoretical discussions without critically analyzing practical implementations in real classroom settings. For example, White [12] investigated the use of semantic groupings in teaching Russian vocabulary but limited the scope to a single classroom without broader pedagogical evaluation. Similarly, Zeng et al. [13], in their systematic review, highlighted a

recurring disconnect between theoretically grounded vocabulary instruction and the limited empirical evidence regarding its application in authentic teaching environments.

Given these gaps, this critical review aims to synthesize and evaluate existing literature on the application of sense relations in vocabulary instruction, with a particular focus on its relevance and potential benefits for Vietnamese adult learners. It not only highlights key findings and theoretical contributions but also critically assesses methodological approaches, identifies limitations, and proposes directions for future research and pedagogical practice. Through this approach, it seeks to provide educators and researchers with deeper insights into how semantic relationships can be leveraged to enhance vocabulary acquisition in more meaningful and effective ways.

To guide this review, the following research questions are proposed:

1. *What are the effects of sense relations in teaching vocabulary?*
2. *What are the limitations of previous studies on applying sense relations in vocabulary teaching?*

To address these questions, this review adopted a structured methodology for selecting, analyzing, and synthesizing relevant studies on the use of sense relations in vocabulary instruction.

2. Methodology

This paper adopted a systematic literature review (SLR) approach as the primary method for selecting, analyzing, and evaluating existing research related to the application of sense relations in vocabulary instruction. The SLR method was considered appropriate as it provides a structured and replicable framework for examining existing academic work on a specific topic, thereby ensuring comprehensive coverage and minimizing the potential bias often found in narrative reviews. As Ranganathan and Aggarwal [14] argue, SLRs employ pre-defined protocols, systematic search strategies, and explicit study selection criteria elements lacking in narrative reviews which greatly reduce the risk of subjective bias and enhance reproducibility.

A systematic review, as defined by Kitchenham [15], aims to identify, evaluate, and synthesize all available research relevant to a particular research question, topic area, or phenomenon of interest. This method was suitable for the current study as it facilitates a focused, critical, and methodologically transparent examination of existing literature. In alignment with this rationale, Kim [16] emphasizes that when a systematic review is conducted according to established protocols such as predefined eligibility criteria, comprehensive search strategies, and rigorous appraisal methods, it minimizes bias and improves the transparency, reliability, and overall credibility of its conclusions.

To guide the inclusion of sources, this review adopted a set of criteria informed by the PRISMA guidelines [17] with adjustments made to fit the specific objectives of this research. First, studies must involve empirical research or contain detailed pedagogical analysis. Second, sources must be obtained through reliable academic databases or platforms (e.g., peer-reviewed journals, scholarly books, or graduate theses). Third, studies must be relevant to the use of sense relations (e.g., synonymy, antonymy, hyponymy) in vocabulary teaching. Finally, research studies should focus on teaching or learning contexts, preferably involving EFL learners or teachers, with particular attention to adult or tertiary-level learners. Based on these inclusion criteria, the researcher conducted a comprehensive search across several academic databases and scholarly platforms, including ERIC, Education Research Complete (ERC), Google Scholar, ResearchGate, and Academia.edu. The search terms used included combinations of “sense relations,” “vocabulary teaching,” “semantic relations,” “EFL learners,” and “adult English learners.”

From the initial pool of results, approximately 10 relevant publications including journal articles, dissertations, and conference proceedings were selected for in-depth analysis. Each selected study was reviewed in terms of its objectives, theoretical foundation, methodology, key findings, and relevance to the Vietnamese EFL context. The insights gained from this systematic review form the basis for the critical evaluation presented in the following sections.

3. Research findings and discussion

The following section presents the results of reviewing previous studies and provides some discussion.

3.1. Effects of sense relations on vocabulary instruction

Table 1. A summary of the selected prior studies (n = 10)

Changes in teachers' beliefs about ELT and/or their instructional practices					
No.	References	Focus	Participants	Instruments	Major Findings
1	[18]	Application of semantic field theory and sense relations in vocabulary learning	Non-empirical study; no specific participant sample	Literature-based conceptual analysis (non-empirical)	The study emphasizes the importance of organizing vocabulary into semantic networks (e.g., synonyms, antonyms, hyponyms). Applying semantic field theory improves vocabulary retention, understanding, and usage, and promotes active and contextualized learning aligned with constructivist principles.
2	[19]	Applying sense relations (synonymy, antonymy, hyponymy, collocation) to vocabulary teaching	Not specified; based on textbook analysis (A New English Course)	Textual analysis of vocabulary exercises; theoretical framework using componential analysis, markedness theory, and semantic field theory	Vocabulary teaching becomes more systematic and effective when sense relations are explicitly taught. The author categorizes exercise types and explains how each contributes to building vocabulary depth, precision, and long-term retention. Emphasis on the psychological underpinnings of vocabulary grouping.
3	[20]	The relationship between lexical sense relations, vocabulary size (breadth), and word frequency in L2 learning	Chinese EFL learners (details limited)	Literature review; empirical references; theoretical synthesis	Vocabulary depth and breadth are interconnected. Lexical sense relations (e.g., synonymy, antonymy, hyponymy) are crucial to deep vocabulary knowledge. Word frequency influences learners' ability to form semantic networks and associations.
4	[21]	Examining the effectiveness of vocabulary teaching via sense relations vs. the traditional method	80 first-year English majors from Dezhou University (Shandong, China)	Experimental study with pre/posttests (immediate, delayed, and transfer tests); adapted DVK test	The experimental group, which was taught through sense relation strategies (synonymy, antonymy, hyponymy, and collocation), significantly outperformed the control group in vocabulary acquisition, retention, and even on unfamiliar words. This supports the superiority of constructing sense relations in vocabulary teaching over traditional methods.
5	[22]	Investigates whether explicit teaching of six semantic relations (hyponymy, synonymy, antonymy, polysemy, homonymy, metonymy) improves EFL learners' breadth & depth of vocabulary knowledge	50 first-year Jordanian EFL majors (29 ♀ / 21 ♂, age 20-21) at a state university; single intact class	Mixed-methods: (1) pre/post word-association & semantic-re-organisation tests; (2) 15-week classroom intervention (3 h/week); (3) semi-structured learner interviews; quantitative analyses via ANOVA & paired-samples t-tests	Learners' initial awareness of most relations was low; post-test scores rose significantly across all seven categories (p < 0.05). Vocabulary breadth, depth and reading competence all improved; 94% of students reported that the technique was motivating and helped build their mental lexicon; authors recommend multi-relation instruction and larger longitudinal studies.
6	[23]	Implementing semantic field theory to improve vocabulary teaching effectiveness and learner satisfaction	120 Chinese university students (Henan Polytechnic University)	Experimental teaching of vocabulary via semantic field methods; satisfaction survey	Semantic field theory enhances vocabulary comprehension and recall. Students learned to group words by semantic categories (e.g., personality, appearance, hobbies). Most students reported increased satisfaction, improved reading and writing skills, and better retention, emphasizing hyponymy, synonymy, antonymy, and meronymy as key relationships to teach vocabulary meaningfully.

<i>Changes in teachers' beliefs about ELT and/or their instructional practices</i>					
No.	References	Focus	Participants	Instruments	Major Findings
7	[24]	Investigates the use of sense relations (synonymy, antonymy) in vocabulary acquisition and how these shape teaching approaches in EFL contexts	Not specified in (the article is conceptual and literature-based, not empirical)	Literature review, theoretical and pedagogical analysis	The study emphasizes the importance of teaching vocabulary through semantic networks (synonyms and antonyms), focusing on contextual and connotative meaning. It suggests that understanding stylistic, emotive, and contextual nuances should enhance learners' lexical competence and teachers' instructional effectiveness.
8	[25]	Whether teaching new vocabulary in semantic sets or semantically-unrelated sets leads to better learning and faster retrieval	60 fourth-grade EFL pupils (taught 80 target words)	Questionnaire Interview	Whether teaching new vocabulary in semantic sets or <i>semantically-unrelated</i> sets leads to better learning and faster retrieval.
9	[26]	Mapping the lexical sense-relation network in L1 through a free word-association test	110 Iranian undergraduates (aged 18-24) at Ferdowsi U.	Questionnaire Classroom observations	Mapping the lexical sense-relation network in L1 through a free word-association test
10	[27]	Conceptual review of sense relations (synonymy, hyponymy, antonymy) and their pedagogical value for language learning	(The article is a library-based review, not an empirical study)	Literature synthesis/ analytical discussion	Clarifies two core families of relations inclusion/identity and opposition/exclusion and argues that explicit instruction in these relations enhances learners' semantic awareness and vocabulary depth

Drawing on Table 1, prior investigations into the pedagogical use of sense relations in vocabulary teaching likewise yielded mixed results. On the positive side, a cluster of quasi-experimental and classroom-based studies including studies of [18], [23] and [26] consistently indicated that lessons organised around synonymy, antonymy, hyponymy, or collocation accelerate lexical growth, boost delayed retention, and even transfer to untaught items, thereby outperforming traditional word-list approaches. Yet, these gains were not universal. One line of work on teaching words in tightly knit semantic sets by Erten and Tekin [25] raised the possibility of short-term interference, suggesting that younger learners might retrieve items more slowly or confuse closely related meanings when too many related words were introduced at once. In addition, almost a third of the corpus ([18], [19], [24], [27]) consisted of conceptual or textbook analysed that endorse semantic-field techniques but provided no empirical evidence, leaving questions about actual classroom impact unanswered. Taken together, the literature suggested that sense-relation frameworks could significantly enhance vocabulary depth and durability when carefully scaffolded; however, their effectiveness appeared to be sensitive to learner age, cognitive load, and the granularity of semantic groupings. More longitudinal, large-scale trials - especially beyond Chinese and Iranian university contexts - were still needed to clarify when semantic clustering supported, and when it hindered vocabulary acquisition.

3.2. Limitations of the previous studies

As Table 1 demonstrated, research on the application of sense relations in vocabulary instruction still suffered from several methodological and contextual shortcomings.

Firstly, many studies relied heavily on theoretical frameworks or textbook-oriented

methodologies including studies of [18], [19], [22], [24] and [27] often lacking concrete empirical data from actual classroom contexts. While studies of [21] and [23] incorporated experimental designs with pre- and post-tests, they typically did not utilise methodological triangulation through interviews, classroom observations, and learner surveys.

Secondly, limitations in sample size and participant specification remained pronounced. Illustratively, Zhang [21] examined only 80 secondary-level learners, while Erten and Tekin [25] worked with a cohort of merely 60 university students. Other investigations including studies of [18], [19], [24] and [27] offered scant demographic detail, providing at most cursory descriptions of their samples. Such shortcomings curtailed the findings' statistical power and external validity, thereby obscuring the extent to which sense-relation-based vocabulary pedagogy could be reliably extrapolated to heterogeneous educational contexts.

Thirdly, several studies such as [18], [24] and [27] remained predominantly theoretical and lacked substantial empirical investigation into authentic classroom experiences. This theoretical focus limited the practical applicability of their findings for teachers in real-world scenarios.

To date, systematic empirical investigations into the application of sense relations in vocabulary pedagogy within Vietnamese educational contexts remained exceedingly scarce. This paucity of localized studies had resulted in a significant gap in the evidence base concerning the approach's alignment with national curricula, its feasibility in real-world teaching environments, and its applicability in preparing learners for high-stakes assessments. These limitations underscored the urgent need for large-scale, mixed-method, and longitudinal research to rigorously determine the conditions under which semantic field-based instruction contributes meaningfully to the development of lexical competence among EFL learners in Vietnam.

Drawing on the body of research rigorously screened and critiqued through our systematic literature review, the following section synthesized the key pedagogical implications and overarching conclusions that emerged from these studies.

4. Implications and conclusion

This review has examined the role of teaching vocabulary through sense relations such as synonymy, antonymy, hyponymy, meronymy, and polysemy and how these approaches influence learners' vocabulary development. The findings indicate that when appropriately implemented, sense relation-based instruction can lead to noticeable improvements in vocabulary comprehension, retention, and productive use. Nonetheless, the current body of research remains limited in both methodological scope and contextual diversity, which calls for caution in generalizing the findings.

A recurring limitation across the reviewed studies is the frequent reliance on single-measure designs, most commonly pre-and post-tests. While these instruments provide useful initial data, they do not capture the full complexity of vocabulary learning processes. Additionally, the scope of this review was constrained by the limited number of studies included ($n = 10$), which may not fully represent the broader landscape of research on sense relation-based instruction. Future research should therefore adopt more comprehensive and mixed-methods approaches. These may include classroom observations, learner interviews, student writing analysis, and reflective journals, which together can offer deeper insights into how sense relations support vocabulary learning and in what contexts they are most effective.

Pedagogically, instructors should replace isolated word lists with semantically organized clusters, supported by visual mapping tools, and sequence or space these clusters to mitigate cognitive overload, particularly for lower-proficiency learners. At the curricular level, aligning sense-relation techniques with Vietnam's national learning outcomes and assessments, and embedding them in teaching materials and teacher-training programs, can enhance communicative competence and lexical depth across classrooms.

In conclusion, the current evidence suggests that vocabulary instruction grounded in sense

relations has considerable potential to enrich learners' lexical knowledge. However, to fully realize this potential, further well-designed, mixed-method, and longitudinal research, particularly within Vietnamese educational settings, is essential. Such research will help clarify the most effective ways to implement these strategies and provide stronger guidance for teachers, material writers, and policy-makers seeking to improve vocabulary instruction in EFL contexts.

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