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Article

Applying WordNet In Teaching The Lexical Semantics Of English Nouns

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ABSTRACT

This paper addressed the practical application and potential impact of WordNet as an educational tool for teaching the lexical semantics of English nouns. WordNet, an extensive English lexical database, systematically organizes words into semantically interconnected groups and hierarchical classifications, providing a promising resource for utilizing a computational semantics approach in language education. Using the descriptive research method and the comparative method, the study explored the network of semantic relationships within English nouns, specifically focusing on synonymy, polysemy, hyponymy, and hypernymy. Based on the WordNet description, the paper suggested some practical techniques for teaching and learning lexical semantics within English nouns. These approaches aim to enhance the educational experience for both teachers and students by fostering a deeper understanding of the semantic relationships of English nouns through addressing readability, contextual meanings, and conceptual structures.

Key words: WordNet, semantic relations, lexical semantics, English nouns

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INTRODUCTION

Traditional approaches to teaching lexical semantics in English often rely heavily on traditional dictionaries and conventional thesauruses. While these tools are useful, they do not fully exploit the potential of modern computational resources like WordNet. Traditional methods do not provide a comprehensive understanding of the semantic relationships that exist between words, especially in the case of English nouns. WordNet, developed by Princeton University in 1986, serves as a lexical-conceptual model and database, systematically organizing words based on their semantic relationships (Miller et al., 1990)[1]. Within the domain of lexical semantics, WordNet helps clarify the relationships associated with English nouns, offering a structured framework for exploring synonymy, polysemy, hypernymy, hyponymy, etc. The main objectives of this research are as follows:

1. Investigating the semantic relationships of English nouns using WordNet.
2. Evaluating WordNet's lexical data by comparing the semantic relationships and definitions found in WordNet with those in traditional dictionaries and conventional thesauruses.
3. Proposing the pedagogical application of WordNet as an effective tool for teaching and acquiring lexical semantics.

This study seeks to bridge the gap between theoretical linguistic resources and practical language education. This research has practical significance by applying WordNet to deepen understanding of semantic relationships among English nouns.

LITERATURE REVIEW

Overview of WordNet

WordNet[a] is a large English vocabulary database developed by Princeton University in 1986 by a team of scientists, led by psychologist George Armitage Miller (Miller et al., 1990)[1]. WordNet organizes English concepts into groups of words with semantic relations. Nouns, verbs, adjectives, and adverbs in English are grouped into synonym sets, with each group representing a distinct concept. The semantic relationships between words in WordNet include synonymy, antonymy, hyponymy, hypernymy, meronymy, holonymy, entailment, and troponymy. Currently, WordNet comprises 117,000 synsets (Fellbaum, 2005)[2]. While WordNet includes parts of speech like nouns, verbs, adjectives, and adverbs, this study concentrates on the semantics of nouns. WordNet has been divided into 25 primitive concepts or root senses, covering all English nouns (Miller et al., 1990)[1]. Observing these 25 primitive concepts, we find that some concepts share common semantic features (e.g., {animal}, {person}, {plant} are

[a]https://wordnet.princeton.edu/

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Table 1: Organization of Primitive Concepts (Fellbaum, 1998)[3]

thing, entity	living thing, organism	animal	
		person	
		plant	
	non-living thing, object	artifact	
		natural object	body
		substance	food
	abstraction	attribute	
		quantity	
		relation	communication
		time	
	psychology feature	cognition	
		feeling	
		motivation	
		natural phenomenon	process
		activity	
		event	
		group	
		location	
		possession	
		shape	
		state	

all living things). Therefore, in WordNet, concepts sharing such semantic features are grouped together under a higher-level concept. Following simplification, WordNet retains only 11 primitive concepts (entity, abstraction, psychological feature, natural phenomenon, activity, event, group, location, possession, shape, state). Below is the list of these primitive concepts (reduced from 25 primitive concepts to 11 basic concepts) encompassing all English nouns in WordNet (as shown in Table 1).

Previous research on WordNet in language education

WordNet is an extensive lexical database that has attracted attention in educational research for its potential to enhance language learning and teaching, particularly in the areas of lexical semantics. Several studies have investigated the efficacy of WordNet in educational contexts. Redkar et al. (2017)[4] demonstrated how Hindi WordNet was integrated into the Hindi Shabdamitra e-learning tool, significantly enhancing language education by helping learners build a wider range of vocabulary and filling gaps in Hindi e-learning resources. The integration of Hindi WordNet into the educational tool provided comprehensive lexical insights. By offering features like native speaker audio, illustrations, and simplified glosses, the tool supported both structured and flexible learning approaches. Similarly, Redkar et al. (2018)[5] detailed the adaptation of Hindi WordNet into a digital resource, emphasizing its effectiveness in improving comprehension, retention, and learner engagement in the classroom. The tool organized vocabulary using cognitive associations and synsets, and provided a multi-sensory learning experience. Initial trials in schools received positive feedback, highlighting the tool's potential to enhance language learning outcomes. Expanding the scope, Kulkarni et al. (2019)[6] introduced Sanskrit Shabdamitra, an educational application utilizing Sanskrit Wordnet, to aid in language acquisition, pronunciation, grammar, and concept comprehension. This integration not only

provided a comprehensive e-learning tool but also enhanced the accessibility and effectiveness of language education in Sanskrit. The successful application of WordNet in Sanskrit education further corroborated its role in enhancing lexical richness and pedagogical effectiveness. Furthermore, Gonzalez-Dios (2019)[7] explored the utilization of WordNet in language-for-specific-purpose (LSP) classrooms, proposing a textual genre-based approach to incorporate terms into WordNet. This approach helped students access specialized knowledge effectively, enriching WordNet with new variants and synsets. Bond et al. (2021)[8] discussed a new approach to enhance students' learning through sense tagging, which involved students in annotating corpora and updating "wordnets". This interactive approach not only deepened understanding of lexical semantics but also contributed to the enrichment of lexical resources. More recently, Moskvoretskii et al. (2024)[9] presented TaxoLLaMA, a WordNet-based model designed to solve multiple lexical-semantic tasks, achieving state-of-the-art results across various tasks. This study underscored the advanced capabilities of WordNet in solving complex semantic problems, indicating its potential to be integrated into sophisticated educational technologies and frameworks.

In general, these studies showed the significant potential of WordNet as an educational tool for teaching lexical semantics and enhancing lexical acquisition in language education settings. However, further research is needed to explore enhanced methods for deepening understanding of semantic relationships among English nouns through the application of WordNet in teaching, as well as its impact on language learning outcomes.

RESEARCH METHODOLOGY

Data Collection

Data collection for this study primarily involves utilizing WordNet to analyze semantic relationships among English nouns, including synonymy, polysemy, hyponymy, and hypernymy. The process begins with accessing WordNet online and collecting a dataset containing English nouns along with their corresponding semantic relations. Additionally, relevant data related to English nouns will be extracted from traditional dictionaries and conventional thesauruses.

Analysis of Semantic Relationships

This research undertakes an examination of the semantic relationships among English nouns utilizing the WordNet database. The investigation encompasses an exploration of synonymy, polysemy, hyponymy, and hypernymy. By analyzing these relationships, the study aims to gain valuable insights into the interconnectedness of words and deepen our understanding of their meanings and connections within the WordNet framework.

Comparative Analysis

The main goal of a comparative analysis is to contrast the semantic relationships and definitions offered by WordNet with those present in traditional dictionaries and conventional thesauruses. This process helps students gain a deeper understanding of the connections between words and the conceptual structures within WordNet's lexical data, thereby enriching their comprehension of word meanings and usage.

RESULTS AND DISCUSSION

Analysis of Semantic Relationships in English Nouns using WordNet

The analysis of semantic relationships among English nouns utilizing WordNet includes exploring synonymy, polysemy, hyponymy, and hypernymy.

Synonymy

Synonymy plays a central role in WordNet, where synonym sets, known as synsets, are connected through both conceptual-semantic and lexical relations (Fellbaum, 2005)[2]. Analysis of synonymy within WordNet reveals a rich network of words that share similar meanings, aiding educators in illustrating the diversity of synonyms available for English nouns. Through the analysis of a provided example in Table 2, this investigation reveals how the term "car" is synonymous with various other nouns.

First, "car" is synonymous with various other nouns such as "auto", "automobile", "machine", and "motorcar", all denoting "a motor vehicle with four wheels; usually propelled by an internal combustion engine". Additionally, "car" is synonymous with "railcar", "railway car", and "railroad car", which refer to "a wheeled vehicle adapted to the rails of a railroad". "Car" is also synonymous with "gondola", representing "the compartment suspended from an airship carrying personnel, cargo, and the power plant". Furthermore, "car" is synonymous with "elevator car", which refers to "the compartment where passengers ride up and down". Lastly, "car" is synonymous with "cable car", representing "a conveyance for passengers or freight on a cable railway". This analysis highlights the interconnectedness of synonyms within

Table 2: Illustration of the noun "car" and its synonymy extracted from WordNet source (Fellbaum & Christiane, 2005) [2]

CAR (Noun)
"S:" = Show Synset (semantic) relations
S: (n) car, auto, automobile, machine, motorcar (a motor vehicle with four wheels; usually propelled by an internal combustion engine) "*he needs a car to get to work*"
S: (n) car, railcar, railway car, railroad car (a wheeled vehicle adapted to the rails of railroad) "*three cars had jumped the rails*"
S: (n) car, gondola (the compartment that is suspended from an airship and that carries personnel and the cargo and the power plant)
S: (n) car, elevator car (where passengers ride up and down) "*the car was on the top floor*"
S: (n) cable car, car (a conveyance for passengers or freight on a cable railway) "*they took a cable car to the top of the mountain*"

WordNet's framework, demonstrating how different terms can represent similar concepts across various contexts or domains. Moreover, educators can use synonyms aligned with readability levels for English nouns through WordNet, aiding students in understanding word usage and contextual appropriateness.

Polysemy

Polysemy is the phenomenon where a word has more than one meaning. In English, many words exhibit polysemy. Therefore, when we send a query (search term) to the Princeton WordNet system, we often receive more than one synonym set in return. By examining the various senses of "bank" listed in WordNet (as shown in Table 3), we can gain insights into the complexity of semantic relationships within the English language.

The results obtained from WordNet reveal ten distinct senses of the noun "bank", covering various topics such as geographical features, financial institutions, and structural arrangements, etc. For instance, "bank" can refer to a sloping land beside a body of water, a financial institution that accepts deposits, or a container for keeping money at home. The analysis of the different senses of "bank" highlights the challenges faced by language learners and natural language processing systems in disambiguating word meanings. Notably, in WordNet, there is no distinction between polysemy and homographs, so WordNet recognizes only polysemy. Without contextual cues, it becomes difficult to determine the intended sense of a polysemous word accurately. This paper suggests using polysemy to determine the specific meaning of nouns in each context.

Hyponymy and Hypernymy

Hierarchical relationships in WordNet play a crucial role in organizing concepts in a structured manner, facilitating understanding through taxonomic systems. These relationships reflect connections and hierarchies between concepts, with the identification of semantic relationships between superordinate and subordinate levels being essential (Ferschke, 2009) [10]. One of the most important relationships in hierarchical relationships is the hyponymy and hypernymy relationship. In the analysis of the examples provided in Table 4, the hierarchical relationships illustrate hyponymy and hypernymy relations. The term "dog" has multiple meanings. In this example, "dog" refers specifically to the domestic dog, scientifically known as Canis familiaris.

The term "dog" is a hyponym under "domestic animal", which, in turn, is a hyponym under "animal". This hierarchical structure extends further, with "animal" as a hyponym of "organism", and "organism" as a hyponym under "living thing". The chain continues with "living thing" being a hyponym of "unit", which is then classified under "physical object". This hierarchy proceeds with "physical object" as a hyponym of "physical entity", and ultimately, "physical entity" as a hyponym under "entity". Conversely, "entity" serves as a hypernym encompassing "physical entity", which, in turn, is a hypernym of "physical object", with "physical object" functioning as a hypernym for "unit", and subsequently, "unit" serving as a hypernym for the classification "living thing". This sequence continues, with "living thing" functioning as a hypernym for "organism", and in turn, the term "organism" being classified as a hypernym for the category "animal". This hierarchical pattern persists, "animal" is then categorized as a hypernym of "domestic animal", and finally,

Table 3: Illustration of the noun "bank" and its polysemy extracted from WordNet source (Fellbaum & Christiane, 2005) [2]

Polysemy	BANK (Noun)
No.	"S:" = Show Synset (semantic) relations
1	S: (n) *bank* (sloping land (especially the slope beside a body of water)) "*they pulled the canoe up on the bank*"; "*he sat on the bank of the river and watched the currents*"
2	S: (n) *depository financial institution, bank, banking concern, banking company* (a financial institution that accepts deposits and channels the money into lending activities) "*he cashed a check at the bank*"; "*that bank holds the mortgage on my home*"
3	S: (n) *bank* (a long ridge or pile) "*a huge bank of earth*"
4	S: (n) *bank* (an arrangement of similar objects in a row or in tiers) "*he operated a bank of switches*"
5	S: (n) *bank* (a supply or stock held in reserve for future use (especially in emergencies))
6	S: (n) *bank* (the funds held by a gambling house or the dealer in some gambling games) "*he tried to break the bank at Monte Carlo*"
7	S: (n) *bank, cant, camber* (a slope in the turn of a road or track; the outside is higher than the inside in order to reduce the effects of centrifugal force)
8	S: (n) *savings bank, coin bank, money box , bank* (a container (usually with a slot in the top) for keeping money at home) "*the coin bank was empty*"
9	S: (n) *bank, bank building* (a building in which the business of banking transacted) "*the bank is on the corner of Nassau and Witherspoon*"
10	S: (n) *bank* (a flight maneuver; aircraft tips laterally about its longitudinal axis (especially in turning)) "*the plane went into a steep bank*"

Table 4: Illustration of the noun "dog" and its hierarchy extracted from ontology tree of WordNet source (Fellbaum & Christiane, 2005) [2]

- dog
- Noun (animal) [Canis familiaris, dog, domestic dog] - a member of the genus Canis (probably descended from the common wolf) that has been domesticated by man since prehistoric times; occurs in many breeds
- Noun (animal) [domestic animal, domesticated animal] - any of various animals that have been tamed and made fit for a human environment
- Noun (tops) [animal, animate being, beast, brute, creature, fauna] - a living organism characterized by voluntary movement
- Noun (tops) [being, organism] - a living thing that has (or can develop) the ability to act or function independently
- Noun (tops) [animate thing, living thing] - a living (or once living) entity
- Noun (tops) [unit, whole] - an assemblage of parts that is regarded as a single entity
- Noun (tops) [object, physical object] - a tangible and visible entity; an entity that can cast a shadow
- Noun (tops) [physical entity] - an entity that has physical existence
- Noun (tops) [entity] - that which is perceived or known or inferred to have its own distinct existence (living or nonliving)

the term "domestic animal" is a hypernym of the category "dog". This paper suggests utilizing hypernyms and hyponyms to explain the concept of nouns according to a hierarchical structure which facilitates the systematic arrangement of words based on their conceptual connections.

Comparing WordNet with traditional dictionaries and conventional thesaurus es

Comparing WordNet to entries found in traditional dictionaries and conventional thesauruses highlights the advantages of WordNet due to its deep hierarchical structure and semantic relationships within its lexical data.

Comparing WordNet with traditional dictionaries

WordNet and traditional dictionaries are both valuable linguistic tools, each offering distinct features for understanding language. Traditional dictionaries, like the Oxford Learner's Dictionary (Murray,1928) [11], utilize a alphabetical format, providing a straightforward means of locating word entries. While convenient for resolving issues related to word usage or determining the priority of meaning, traditional dictionaries neglect questions concerning the synchronic organization of lexical knowledge (Miller et al., 1990) [1]. Consequently, users often encounter limitations and time-consuming searches due to the alphabetical organization hindering the exploration of lexical connections efficiently. Additionally, some traditional dictionaries lack structural coherence and may resort to circular definitions, using the word Wa to define the word Wb, then in other places using the word Wb itself to redefine the word Wa (Miller et al., 1990) [1]. In contrast, WordNet is based on semantic relationships rather than mere word forms. Unlike traditional dictionaries, WordNet does not contain information about pronunciation, etymology, or meaning explanations with pictures or diagrams. Instead, it focuses on the network of semantic relationships such as synonymy, polysemy, hyponymy and hypernymy and so on. The hallmark of WordNet lies in its tree-shaped organization, where the root represents a very general parent concept. Based on the hypernymy relationship, it was divided according to branch into more specific child concepts, and then also from these child concepts, it was continued to break down into more detailed concepts, and so on until there is no need to divide anymore (about ten levels on average) and the last node is the noun (Miller et al., 1990) [1]. By storing only the unique characteristics of each concept and inferring additional properties from parent concepts, WordNet overcomes the redundancy inherent in traditional dictionaries, optimizing storage space without compromising on completeness. By organizing words according to their meanings, WordNet not only aids in vocabulary acquisition but also enhances retention by anchoring new words to existing ones within the network. Moreover, WordNet usually offers more definitions compared to many traditional dictionaries, such as the Oxford Learner's Dictionary (as shown in Table 5).

The comparison between the Oxford Learner's Dictionary and WordNet for the noun "book" highlights the key differences in their approaches. Both tools are valuable for defining words, but each has distinct strengths and limitations. The Oxford Learner's Dictionary offers a concise set of seven definitions, focusing on the most common and straightforward uses of the word, such as a physical object for reading, a written work in printed or electronic form, and financial records. These definitions are particularly user-friendly and suitable for learners seeking quick and clear explanations. In contrast, WordNet offers multiple layers of meaning of "book", presenting eleven distinct meanings that span a broader range of contexts, including metaphorical, specialized, and religious uses. WordNet not only covers the traditional definitions but also includes meanings related to scripts in theater, collections of playing cards in games, and sacred religious texts. Moreover, WordNet's emphasis on semantic relationships and hierarchical organization provides a richer understanding of how "book" fits within a broader network of concepts, offering users insights into the word's various meanings and their connections.

Comparing WordNet with conventional thesaurus es

WordNet and conventional thesauruses, like Roget's 21st Century Thesaurus [12], both aim to group words based on their meanings, but they differ significantly in approach and utility. Conventional thesauruses are useful for quickly finding word alternatives by providing lists of synonyms. However, these thesauruses typically present words in isolation, without offering meanings, examples, or guidance on how to use the words in context. This lack of contextual information can lead learners to use words incorrectly or struggle to determine appropriate usage in different situations. WordNet, in contrast, addresses these limitations by organizing words into synonym sets based on their semantic relationships. Each synonym set in WordNet is accompanied by a brief definition, and many

Table 5: Comparison of definitions for the noun "book" extracted from Oxford Learner's Dictionary (Murray, 1928)[11] and WordNet (Fellbaum & Christiane, 2005)[2]

Definitions of the noun "book"	
Oxford Learner's Dictionary[1]	WordNet[2]
1. a set of printed pages that are fastened inside a cover so that you can turn them and read them	1. a written work or composition that has been published (printed on pages bound together)
2. a written work published in printed or electronic form	2. physical objects consisting of a number of pages bound together
3. a set of sheets of paper that are fastened together inside a cover and used for writing in	3. a compilation of the known facts regarding something or someone
4. a set of things that are fastened together like a book	4. a written version of a play or other dramatic composition; used in preparing for a performance
5. the written records of the financial affairs of a business	5. a record in which commercial accounts are recorded
6. a section of a large written work	6. a collection of playing cards satisfying the rules of a card game
7. a record of bets made on whether something will happen, somebody will win a race, etc.	7. a collection of rules or prescribed standards on the basis of which decisions are made
	8. the sacred writings of Islam revealed by God to the prophet Muhammad during his life at Mecca and Medina
	9. the sacred writings of the Christian religions
	10. a major division of a long written composition
	11. a number of sheets (ticket or stamps etc.) bound together on one edge

[1]https://www.oxfordlearnersdictionaries.com/definition/english/book_1?q=book
[2]http://wordnetweb.princeton.edu/perl/webwn?s=book&sub=Search+WordNet&o2=&o0=1&o8=1&o1=1&o7=&o5=&o9=&o6=&o3=&o4=&h=00

synonyms are illustrated with examples of their usage in sentences. Overall, WordNet differs from conventional thesauruses in two significant ways. Firstly, WordNet links not only word forms or strings of letters but also specific senses of words, thus distinguishing closely related words by meaning. Secondly, WordNet labels the semantic relationships between words, whereas the groups of words in a thesaurus lack a clear pattern other than semantic similarity (Fellbaum, 2005)[2]. A clear example of these differences can be seen when comparing the synonyms for the noun "house" from Thesaurus.com and WordNet (as shown in Table 6).

A conventional thesaurus, such as Thesaurus.com, might list words like "apartment", "building", and "condo" as synonyms for "house", presenting them in a flat, isolated manner without providing any context or guidance on how to use these synonyms correctly. This approach can be limiting, as it leaves the user to figure out which synonym is most appropriate in a given context. For instance, while "apartment" and "house" are both dwellings, they are not always interchangeable due to differences in connotation and usage. WordNet, on the other hand, organizes these synonyms according to specific senses of the word "house", such as "a dwelling", "a business firm", or "an audience in a theater". Each sense is defined and illustrated with example sentences, providing a deeper understanding of how each synonym can be applied in various situations. Furthermore, WordNet's emphasis on semantic relationships including synonymy, polysemy, hyponymy, and hypernymy provides a structured framework for understanding lexical semantics. This structured and detailed approach supports deeper learning and retention, making WordNet a more effective tool for lexical acquisition compared to conventional thesauruses, which often present words without sufficient context or usage guidance.

Table 6: Illustration of synonyms for the noun "house" extracted from Thesaurus. com (Roget, 2013) [12] and WordNet (Fellbaum & Christiane, 2005) [2]

Finding synonyms of the noun "house"	
Thesaurus. com[1]	WordNet[2]
*Strongest matches: apartment box building condo condominium dwelling home mansion residence shack *Strong matches: abode; castle; cave; co-op; coop; crib; cubbyhole; den; diggings; digs; domicile; dump; edifice; flat; flophouse; habitation; homestead; joint; kennel; layout; lean-to; pad; pigpen; pigsty; rack; residency; roof; roost; setup; shanty; turf *Weak matches: bullpen; commorancy; crash pad; hole in the wall; home plate; pied-à-terre	S: (n) house (a dwelling that serves as living quarters for one or more families) "*he has a house on Cape Cod*"; "*she felt she had to get out of the house*" S: (n) firm, house, business firm (the members of a business organization that owns or operates one or more establishments) "*he worked for a brokerage house*" S: (n) house (the members of a religious community living together) S: (n) house (the audience gathered together in a theatre or cinema) "*the house applauded*"; "*he counted the house*" S: (n) house (an official assembly having legislative powers) "*a bicameral legislature has two houses*" S: (n) house (aristocratic family line) "*the House of York*" S: (n) house (play in which children take the roles of father or mother or children and pretend to interact like adults) "*the children were playing house*" S: (n) sign of the zodiac, star sign, sign, mansion, house, planetary house ((astrology) one of 12 equal areas into which the zodiac is divided) S: (n) house (the management of a gambling house or casino) "*the house gets a percentage of every bet*" S: (n) family, household, house, home, menage (a social unit living together) "*he moved his family to Virginia*"; "*It was a good Christian household*"; "*I waited until the whole house was asleep*"; "*the teacher asked how many people made up his home*"; "*the family refused to accept his will*" S: (n) theater, theatre, house (a building where theatrical performances or motion-picture shows can be presented) "*the house was full*" S: (n) house (a building in which something is sheltered or located) "*they had a large carriage house*"

[1]https://www.thesaurus.com/browse/house
[2]http://wordnetweb.princeton.edu/perl/webwn?s=house&sub=Search+WordNet&o2=&o0=1&o8=1&o1=1&o7=&o5=&o9=&o6=&o3=&o4=&h=0000

Practical Applications for Teaching and Learning

The study's findings carry significant implications for teaching lexical semantics. WordNet stands out as a valuable resource for teachers, aiding in the clarification of word meanings and relationships in the English language. One practical application involves using WordNet to create vocabulary exercises that help students explore and understand synonyms. Teachers can design activities where students use WordNet to find synonyms for a given word and then create sentences using these synonyms in different contexts. For example, students can use WordNet to explore various synonyms of the noun "forest", such as "woodland", "timberland", and "jungle". Each term refers to a large area covered chiefly with trees and undergrowth, but with different implications regarding size, density, and geographic location. This activity helps students grasp the slight differences in meaning and appropriate usage of these synonyms. Additionally, WordNet's capability to illustrate polysemy can be utilized to teach students about words with multiple meanings. In a lesson focusing on the word "bank", students would use WordNet to identify its various meanings, such as a financial institution, the side of a river, and a place to store money at home. They would then create sentences for each meaning, fostering a deeper understanding of how context determines word meaning. WordNet's hierarchical structure of hyponyms

and hypernyms can also be used to teach students about categorical relationships between words. For example, a lesson on animals might involve students using WordNet to trace the hypernym "animal" down to specific hyponyms like "dog" and "cat". This exercise helps students understand how specific terms fit within broader categories, enhancing their conceptual understanding of language. Furthermore, WordNet supports teachers in teaching about semantic fields. Teachers can guide students to explore groups of related nouns, for instance, "vehicle" including "car", "truck", "bicycle", and "motorcycle". This approach enables learners to understand how nouns within a semantic domain share common characteristics and functions. By engaging in such exercises, students develop a deeper appreciation for the meaning and usage within specific categories of nouns. In summary, WordNet is an invaluable tool for teaching lexical semantics, offering teachers resources to enhance students' understanding of word meanings, relationships, and semantic categorizations in the English language.

CONCLUSION

Overall, the study emphasizes WordNet's potential as a valuable tool for teaching and learning lexical semantics in English nouns, offering valuable insights into semantic relationships like synonymy, polysemy, hyponymy and hypernymy. Practical applications of WordNet in the classroom, such as vocabulary exercises, context-based learning, and hierarchical categorization, have improved language acquisition and comprehension among students. The findings suggest that WordNet can improve lexical instruction by using synonyms to match varying readability levels, employing polysemy to clarify noun meanings in different contexts, and integrating hypernyms and hyponyms to illustrate hierarchical relationships among nouns. Notably, WordNet offers a more extensive array of definitions compared to other dictionaries, such as the Oxford Learner's Dictionary. Incorporating WordNet in teaching and studying enhances students' language acquisition and comprehension skills, fostering a deeper understanding of word meanings and relationships within the English language. While this study offers valuable insights, it also has limitations, including the scope of the dataset and the focus on nouns only. Future research should explore the application of WordNet across different parts of speech and in diverse educational settings.

BIODATA

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COMPETING INTERESTS

The authors declare that they have no competing interests.

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