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Lexicology between the University and Teacher Training Centres: What Role Does It Play in Training an Informed Teacher?

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ABSTRACT

Given the dynamic and ever-changing nature of meaning, as well as the complex relationships between the various meanings of words in different contexts — which makes it impossible to include them all in a dictionary — research has focused on the study of lexicon and lexicology, whether in the theoretical field of linguistics, in applied linguistics, or in the field of education. The teaching of lexicology at universities, particularly within undergraduate teacher training programmes, makes an important contribution to enabling future teachers to practise their profession in a mature and informed manner. We hypothesise that most grammatical and morphological features — and the errors resulting from them — have their roots in lexical knowledge.

In this paper, we aim to highlight the importance of lexical knowledge in the training of secondary school teachers

through three main sections: In the first section, we address the importance of both the lexicon and the dictionary in the insightful and creative training of teachers, whilst clarifying the differences between them; in the second section, we discuss the semantics of vocabulary, or the way in which lexical information associated with individual words is interconnected and extends to other components of the Arabic language in this context; In the third section, we offer suggestions for integrating lexical concepts into the core training module, or into a separate module, to overcome the difficulties observed among trainees, particularly given that the time allocated to the lexicon module at university is insufficient.

Keywords: lexicography; meaning; sayings; prototypical pattern; neuropedagogy.

Introduction

As a result of the tremendous progress made in the study of word structure through morphological processes and their syntactic, phonological and morphological characteristics, as well as the dynamics of their meanings within the framework of the complex relationships between words and other lexical elements, linguistic studies have shifted towards lexicographical studies. Lexicology is not concerned merely with compiling lists of words, as in a dictionary, but rather with understanding lexical structure and identifying the semantic relationships between lexical units; this enables their appropriate use within communicative contexts to achieve educational effectiveness. A student who does not realise and grasp that **meaning is constituted** by multiple, interrelated events, and that a word is a state with features that are activated during construction, cannot deal with the meanings of the word — which are not a single meaning but a network of meanings — generated by each contextual situation that does not necessarily exist beforehand. Lexical-perceptual meaning is not fixed; rather, it is a flexible conceptual structure shaped by an individual's personal usage and experience; at the heart of this structure lies a prototype representing the most distinctive essence of the concept; From this, networks of meanings branch out through a mechanism of **extension** that allows meaning to be transferred from the sensory realm to figurative and abstract realms, as in the transition from 'head' as a part of the body to 'capital city', 'mountain peak' and 'head'…

However, this network is not fully activated in every instance of use. Rather, it is subject to a process **of 'activation and** specification', through which a particular aspect of the conceptual structure is highlighted in accordance with the speaker's perspective and the context of the discourse. Consequently, lexicology is not limited to recording pre-existing meanings, but seeks to represent the dynamics of meaning as the product of an interaction between the [1] , semantic extensions and epistemic choices, making the word an open epistemic space to which mechanisms of experience and specialised knowledge contribute. Students must therefore understand the origins of these generated meanings, the answer to which lies in mastering the components of the mental lexicon, which forms the focus of neuroeducational studies. In the context of training, 'lexical segmentation' emerges as an effective tool for fostering creativity in the trainee's practice, by enabling them to understand language as a dynamic network of meanings and relationships, rather than merely a list of isolated words. Consequently, the lexicon comprising these lexical units — whether at university level, in training centres, or within Arabic language curricula in school education, particularly at lower secondary and upper secondary levels — takes on particular importance.

1. Vocabulary

Without grammar, very little can be conveyed; without vocabulary, nothing can be conveyed.[2]

According to Wilkins (1972), 'Without grammar, very little meaning can be expressed; without vocabulary, no meaning can be conveyed'.

Vocabulary plays a crucial role in expression and communication; we may possess knowledge of grammatical rules, but we will be unable to express ourselves or communicate if our vocabulary is limited, whereas we can still convey meaning even if our knowledge of grammatical rules is limited and underdeveloped. Therefore, Lewis (1993) argues that language learning should not rely solely on grammar, but primarily on lexical units, and that the learning and teaching of vocabulary must take place within its natural communicative context, using realistic examples relevant to personal experiences and perceptions, and by linking learning to communicative functions, in order to understand texts,

[1] Lanker (1987) argues that linguistic propositions are not based on boundary conditions, but rather on — where . It follows that the utterance is organised around a semantic centre representing the 'centre' or 'prototype', whilst the remaining elements are distributed according to varying degrees of affiliation within a schematic network. (p. 380) The origin of this concept lies in the work of Eleanor Roach (1975) (p. 544), who highlighted that some elements of a sentence are more central than others.

[2] Wilkins (1972), p. 111.

speak fluently and express ideas naturally.[3] This is because the expression of meaning has been, and remains, the focus of modern studies across all disciplines.

1.1. Lexicon and Dictionary

A lexicon differs from a dictionary; the latter is a tangible entity — a book, whether in paper or digital form — whilst a lexicon is an abstract entity or a collection of words associated with concise and interconnected information stored in the mind and described in the dictionary. The relationship between these two entities — the lexicon and the dictionary — can be likened — to the relationship between language, understood as a set of phonological, morphological and syntactic rules, and a grammar book that sets out these rules.[4]

The information in a dictionary is organised according to practical considerations. Words are arranged alphabetically or by place of articulation to facilitate browsing and use. In contrast, a lexicon is organised on the basis of groups of words linked by similarities in form, meaning and morphological structures, such as morphological derivations and semantic networks.[5]

Lakoff (1987) argues that a lexicon is not merely a list of words with fixed meanings, but rather a reflection of the way in which the human mind organises life experiences; for vocabulary is linked to the cognitive categorisation that a person constructs; The lexicon is built upon human experience, which challenges the classical concept associated with traditional philosophy, beginning with Aristotle, who held that meaning is bound by necessary and strict conditions and clear, defined boundaries, and is represented by the prototype. The relationship between concepts, human experience and our knowledge of patterns is based on similarity to the prototype, rather than on logical rules.[6] Nishen (2001) therefore emphasises the importance of teaching vocabulary within semantic networks rather than as separate lists (such as the travel domain: airport – aeroplane – ticket – flight…), which helps to organise vocabulary within the mental lexicon…[7]

Dictionaries that mimic the structure of the mental lexicon are known as semantic dictionaries, which organise words based on semantic proximity; for example, the word ‘saw’ is placed near ‘hammer’ and the word ‘melody’ near ‘music’... These dictionaries are considered the most effective for language learning due to their similarity to the mental lexicon.

1.2. The mental lexicon

Cognitive psycholinguistics suggests that vocabulary is stored in the brain within a complex network of connections; Aitchison (2012) argues that vocabulary acquisition is a fundamental gateway to linguistic knowledge, whereby words are acquired through experience and interaction with the physical world, and are stored in the mind according to organisational patterns such as semantic fields, phonetic similarities, etymological relationships, and so on. However, she simultaneously rejects a sharp distinction between lexicon and grammar; she emphasises that the speaker does not retrieve individual words and then subject them to external rules, but rather retrieves linguistic units of varying sizes (ranging from a single word to a ready-made phrase), which approximates the concept of a ‘syntactic lexicon’.[8]

This ability enables humans to retrieve and interpret words. Storage relies on a flexible and expandable human memory, provided that the information is organised; unorganised information is difficult to retrieve. Therefore, this ability must be based on a system; the word is analysed in a fraction of a second, and a decision is made as to whether it belongs to the ‘non-word’ category. There is a specific ability to search for words and make a lexical judgement in half a second. It is a tightly organised mental lexicon that underpins the capacity for intensive storage and rapid retrieval.[9] Tokohama-Espinosa (2010) asserts that learning is a complex cerebral process based on the construction of interconnected neural networks, whereby knowledge is not stored in isolation but within integrated systems of relationships. In this context, vocabulary acquisition takes on particular importance, as vocabulary is linked to semantic memory, which relies on association and context; this makes vocabulary teaching a process that goes beyond rote memorisation to the construction of meaning within cognitive networks.[10]

Learning is the result of the brain’s ability to alter its structure and functions in response to experience. Furthermore, meaning-based learning is more likely to be retained than rote

[3] Lewis (1993), pp. 50–52.

[4] Presol, (2021), p. 133.

[5] Al-Fasi al-Fahri (1999), p. 17.

[6] Lakoff (1987), pp. 5–7.

[7] Nishen (2001), p. 27.

[8] Aitchison (2012), pp. 3–25.

[9] Al-Fasi Al-Fahri (2002), p. 13.

[10] Tokiohama Spinoza (2010), pp. 120–185.

memorisation.[11] As the brain processes information through interconnected neural networks, the greater the number of senses involved in learning, the stronger the memory traces. [12]

Tokohama Spinoza points out that knowledge acquisition and learning occur via interconnected neural networks, which is consistent with the concept of the lexicon as a semantic network within the mind. Learning occurs through the strengthening of connections between neurons. Experience constitutes the way in which the brain organises knowledge. Knowledge is organised in the form of networks rather than as separate units. Tokuhama Spinoza (2010) argues that semantic memory forms the basis for the storage of meanings and vocabulary, as the construction of meaning depends on linking new information to prior knowledge. [13] This reflects the networked nature of the mental lexicon. In this context, neuroeducational studies show that knowledge is not stored as isolated units, but rather in the form of interconnected networks, which explains the phenomenon of polysemy as a result of the flexibility of concepts and their adaptation to context.[14]

1.3. Lexicology

Lexicology seeks to identify the inherent characteristics of words and to clarify how they are interconnected, through their interrelated meanings and how they are integrated into a set of expressions that possess a linguistic essence (both syntactic and semantic). Lexicological knowledge requires expertise in phonology, morphology, semantics and syntax. The aim of lexicology is to develop a theory of the lexicon, that is, to construct a hypothesis about how the lexicon is organised, and then to design a lexical model – a formal system – that represents this organisation, thereby demonstrating that lexical patterns are organised around central models, with other categories deviating gradually from the centre.[15]

1.4. Lexicology

Lexicography deals with the practical work of compiling dictionaries for practical use; its main aim is to identify effective ways of presenting the linguistic features of words in dictionaries according to specific criteria, such as the type of dictionary and the target learner group.[16]

2. Lexical Semantics

2.1. Meaning

The literary and scientific humanities seek to study meaning, as it reflects the way in which we think and understand ourselves; it is central to the study of language and other sciences.[17]

For many, 'meaning' is intuitively regarded as the central issue in the study of language, and is far more important than understanding the details of word order or morphology. I believe that, over the years, linguists have sought to reach a broad consensus that the study of language helps us to understand human nature.[18] Language is part of the human cognitive system; it is not a system independent of human cognition and human experience, but rather a reflection of conceptual structure. Therefore, understanding meaning requires linking language to an encyclopaedic body of knowledge about meaning. According to Evans and Green (2006), the meaning of a word is not limited to a narrow lexical definition, but is linked to a vast network of associated knowledge and experiences.[19] Concepts are organised through prototypicality theory, which explains that linguistic expressions are not based on strict boundaries, but rather centre around a central prototype representing the most typical form of the expression, whilst the remaining elements are classified according to their degree of similarity.[20]

2.2. The semantic network and polysemy

Evans (2009) argues that meaning is not a fixed entity stored within words, but rather the result of a dynamic process constructed through linguistic use. Words do not carry pre-existing meanings, but are linked to lexical concepts that provide access to broader cognitive schemata, which are activated according to context. Within this framework, Evans explains polysemy as a network of interconnected semantic extensions, rather than a separate list of meanings, making

[11] Tokyo-Hama Spinoza (2010), pp. 120–155.

[12] Ibid., pp. 175–205.

[13] Spinoza, (2010), pp. 132–148.

[14] Ibid., p. 170

[15] Presol (2021), pp. 136–137.

[16] Ibid., p. 137.

[17] Galim et al. (2002), p. 10.

[18] Ibid.

[19] Evans and Green (2006), pp. 157–160.

[20] Ibid., pp. 248–255.

meaning a contextual cognitive phenomenon based on the interaction between language and experience.[21]

Evans's theory is an extension of Forth's theory (1959), which holds that lexical units are related to other units, and that the meanings of these units can only be described or defined through observation of the other units with which they co-occur. This theory focuses on the linguistic contexts in which a word appears and on the importance of exploring the word's connections with other words, thereby going beyond the traditional definition of a word.[22]

2.3. Lexicon and Syntax

Linguistic literature is almost unanimous in its agreement that lexical items are not independent linguistic atoms; Lewis (1993) emphasises the primacy of the lexicon over grammar, arguing that language consists of 'lexical clusters' rather than rules alone. Language consists of a grammatically organised lexicon, not of a lexical grammar; language is the lexicon, not abstract rules.

'Language consists of lexical items, not of grammatical rules that have become lexical items.'[23]

Furthermore, Jackendoff views the lexicon as the foundation of three structures: phonological structure, syntactic structure and semantic structure.

Systemic Functional Linguistics (SFL) does not differ greatly from this approach, in that language is not a fixed structure, but rather a dynamic system of choices used to construct meaning within an interactive social context; One of its fundamental principles is that the lexicon is an organised system of coded signs used to organise the vocabulary of a language, whilst grammar is an organised system of choices used to organise sequences of signs in texts. They do not differ in nature, but rather form a unified layer within language, known as the 'grammatical lexicon'. In other words, according to Martin (2001), it can be said that everything in language — from vocabulary and grammatical structures to complete texts — develops to express very specific discursive functions, in the form of 'levels' linked to a specific speech act in communicative situations; It is this focus on the fundamental communicative functions of language and the systemic choices afforded by the linguistic system that distinguishes systemic functional linguistics from other linguistic models.[24]

2.4. Cognitive grammar

Langacker (1982) argued for the need to study language within the broader context of knowledge rather than treating it as an isolated system; Consequently, he situates syntax within this context and regards syntactic structures as symbolic in their own right, thereby enabling the structuring and encoding of conceptual content in accordance with conventions; he emphasises that it is futile to analyse lexical units without reference to their semantic value. Semantic structures are specific to knowledge systems with an open scope; Langacker defends the hypothesis that lexical meanings cannot be separated from encyclopaedic knowledge.[25]

According to this approach, the conception of linguistic phrases and words is based on two fundamental poles: phonology and semantics. Thus, the noun phrase 'the tree' has a semantic pole, insofar as it constitutes conceptual content and a semantic structure, and a phonological pole. Lexical units are not linguistic atoms, as they consist of features, which are the smallest units in syntactic analysis. The verb ***'nahy'*** (***to forbid***), for example, possesses phonetic features formed through the production and perception of sound (phonetic characteristics, including intonation, stress and rate of speech…) and semantic features (the concept and its relationships with other concepts) that define the verb as issuing a command to prohibit another person, as well as morphological features that enable syntactic analysis, including the feature of being a verb — a feature which grammar interprets as instructions or guidelines for applying specific inflectional morphemes to expand the verbal phrase and which requires the presence of two internal arguments. The verbal prohibition is treated as a subordinate clause, the addressee of the command as a complement (the addressee), and the subject is interpreted as the person who issued the prohibition.

This structure is based on the elements provided by the lexicon; all syntactic constituents, such as relations of order and subordination, are derived from the lexicon, and some constituents are reflections of major categories such as the verbal compound (m-f), the nominal compound (m-s) and the descriptive compound (m-w), the prepositional compound (m-

[21] Evans (2009), p. 174.

[22] Al-Sayyid Yusuf (1990), p. 134.

[23] Lewis (1993), p. 89.

[24] Christopher Cleidhill (1991), p. 8.

[25] Brissol (2021), pp. 85–86.

h) and the adverbial compound (m-z), whilst other functional components are regarded as reflections of secondary or functional categories such as: pure agreement, definition, time, direction, structure, restriction and others.

Secondary functional categories select specific lexical categories as redundant. The more languages differ in terms of the characteristics of the main categories, the more they also differ in terms of the secondary categories. This is the source of errors made by non-native language learners; for example, feminisation is not always realised through the known secondary inflectional forms, but may occur in their abstract forms, as in *'shams', 'yad'*, 'nashz'*, 'hamil' and 'tan*'.[26]

Conceptual, selective and pivotal information for the formation of structures is derived from the lexicon and the constraints of linguistic constructions. Words are complex and condensed structures — they are a condensation of what could have been a sentence — and therefore the analysis of a word does not differ fundamentally from the analysis of a sentence. Grammatical rules apply not only to sentences but also to words. Furthermore, the lexical unit can be divided into a number of words, [27] , where the latter represents a phonological, phonetic, conceptual and functional structure that constitutes the clearest manifestation of the cultural characteristics that form a model of the physical world.[28]

The fundamental idea behind cognitive grammar is that there is no place for purely grammatical form; Consequently, teaching language in the light of this integration requires a shift from a focus on memorising words to developing semantic networks through context and use in functional situations, thereby achieving deeper learning that is more in line with the brain's mechanisms, as these two aspects are inseparable.

3. Lexicon Studies in Universities and Training Centres

3.1. Lexicography in Moroccan universities: the example of the Bachelor's programme in Education

In Moroccan universities, a single module is devoted to lexicology as part of the Bachelor's programme in Education, specialising in secondary vocational education, alongside other linguistic components in the third semester. This linguistic module remains almost entirely isolated and detached from its roots, much like other modules related to linguistics; it lacks any extension, even though the programme, in general, has a comprehensive and coherent structure rather than being merely a collection of separate content. Furthermore, upon reviewing the curriculum content — which is based on a progressive presentation of lexical unit topics — we find that it begins with the history of the Arabic lexicon, distinguishing between word dictionaries, meaning dictionaries and dictionaries of the modern Arabic language; it then moves on to the subject of lexicography and dictionaries as a field for organising conceptual usage, followed by the section on lexicography and the lexicon, which explores the relationship between theoretical and practical dimensions; then the section on dictionary structure, in terms of the organisation of entries, definition patterns and cross-reference mechanisms; and finally the section on types of dictionaries, according to their diverse functions and media. The description also includes a section on the semantics of lexical items in their structural, generative and cognitive dimensions, alongside a section on morphology and word formation, followed by linguistic generation, which covers processes of abbreviation, the coining of new terms, compounding, repetition, metaphor and derivation; and concludes with 'lexical fields', which address the semantic relationships between lexical elements such as synonymy and antonymy in both their forms, generalisation and specialisation, specialisation and generalisation, collocation, phonetic similarity and polysemy.[29]

This description reveals an epistemological and methodological problem, namely the combination of divergent theoretical conceptions within the same unit, without clarifying the epistemological frameworks that organise these conceptions or defining the boundaries of their overlap. It is noteworthy that this section includes concepts derived from the Arabic linguistic tradition, where the lexicon is studied in the light of issues such as derivation, antonymy, synonymy, word forms, and the structural relationships between form and meaning, amongst other things, within a framework that does not distinguish between the interrelationships of lexicon, grammar and morphology, It then integrates, within the same topics, modern concepts such as semantic fields and lexical relations — concepts belonging to the structuralist approach — before adding other concepts from cognitive linguistics, such as cognitive semantics, prototypicality and the schematic organisation of vocabulary. However, this integration has been carried out in an

[26] Brissol (2016), pp. 30–31. See also Al-Fassi Al-Fahri (1997), p. 69.

[27] See Al-Fasi Al-Fahri (1997).

[28] Brisol (2016), p. 31.

[29] The definition appears in the glossary section of the approved curriculum for the Bachelor's degree in Education

unsystematic manner, with the concepts being presented as adjacent elements, whilst in reality they belong to different — and at times even conflicting — interpretative models and theories concerning the nature and function of the lexicon (structural semantics, generative semantics and cognitive semantics) and its relationship with syntax, morphology and other components. The danger of this situation lies in the fact that it creates a kind of cognitive confusion for the student, who finds themselves surrounded by adjacent concepts that are not linked by a clear epistemological vision; for example, the student studies derivation as a structural mechanism for organising meaning in accordance with the traditional concept, then semantic fields are presented as a systematic organisation of vocabulary from a structuralist perspective, followed by an explanation of meaning in the light of context or a paradigmatic pattern within a cognitive framework, without clarifying that each of these levels is based on different theoretical assumptions regarding language, meaning and the mind. Consequently, the subject shifts from being a space for building coherent lexical competence to one where disparate concepts coexist, which may weaken the student's ability to construct a coherent theoretical representation of vocabulary and render lexical knowledge fragmented, lacking a clear interpretative structure.

Consequently, the problem lies not merely in the multiplicity of references — for this multiplicity is a healthy phenomenon and a source of intellectual richness — but in the absence of a methodological framework that contextualises this multiplicity and transforms it into a coherent, organised and comprehensive structure. Unframed and ungrounded pluralism leads to concepts deviating from their theoretical logic, resulting in the use of concepts from structural, generative or cognitive linguistics to explain phenomena that were previously addressed within a different, traditional framework, without questioning the limits of transfer or the conditions of adaptation. This results in a form of cognitive confusion that bewilders the student and leaves them lost, unable to understand what they are studying; for the fragmented approach lacks much internal coherence, as it does not build knowledge according to a clear theoretical and epistemological sequence, but rather through a thematic accumulation of concepts with disparate points of reference. This makes it more akin to a collection of disparate topics than to a course unit with a coherent thematic structure. This problem is exacerbated by the limited time allocated to this vast amount of scattered knowledge, which should have been distributed across other study units or organised within a different study unit; this prevents the information from being absorbed and consolidated in a way that ensures it is deepened and contextualised. Consequently, teaching becomes an intensive presentation of diverse information rather than the construction of a coherent conceptual framework around vocabulary as a relational system that extends to other components of the modules taught in the same term or in other terms. To make matters worse, the content of this module is absent from teacher training centres.

3.2. Vocabulary in teacher training centres: between cognitive weakness and pedagogical absence

Vocabulary is a fundamental element in building linguistic competence among both trainee teachers and learners alike; however, its presence in teacher training centres remains limited, underdeveloped, implicit, and lacking any structured approach. For the most part, the study of vocabulary is treated as a secondary element within the subjects of texts, expression or composition, or as a branch of linguistics, where its concepts are integrated into lessons on grammar, morphology and lexicology without establishing a comprehensive linguistic framework to organise the internal relationships between them. This fragmentation leads to phenomena such as synonyms, antonyms, derivation, modern terminology and metaphor being treated as isolated practical examples, rather than being considered within a comprehensive lexical framework that links word structure, meaning structure and generative mechanisms. Furthermore, this discipline is not treated as a field in its own right requiring careful educational planning. This contradicts Wilkins' (1972) assertion that the lexicon constitutes the core of meaning in language, '[30] ', and Nation's (2001) view that the development of lexical competence requires multidimensional knowledge encompassing form, meaning and usage, ' [31] '. This shortcoming results in inadequate training for trainee teachers, who lack clear strategies for teaching information relating to vocabulary and lexical semantics, such as constructing semantic fields, utilising lexical networks, or linking words to their contextual uses. Furthermore, training programmes do not sufficiently integrate the relationship between vocabulary, grammar and morphology, even though, as **Clark** points out**,** the acquisition of linguistic structure occurs in constant interaction with lexical knowledge.[32]

Furthermore, training centres do not draw on the findings of recent research in the fields of cognitive linguistics and neuropedagogy, which confirm that vocabulary learning

[30] Wilkins (1972), p. 111.

[31] Nason (2001), p. 27.

[32] Clark (1993), p. 48.

depends on the construction of semantic networks within the brain and on linking meaning to experience and context.[33] This makes vocabulary training more akin to rote memorisation than to deep understanding. Consequently, the development of vocabulary teaching in training centres requires the integration of a dedicated module on vocabulary teaching. This integration requires the restructuring of training modules, through the creation of a separate module entitled 'Vocabulary', 'Principles of Vocabulary Teaching' or 'Vocabularistics', aimed at equipping trainee teachers with the necessary tools to analyse vocabulary, strategies for teaching it, and methods for linking it to other components. We propose a description of this module covering the following areas:

The etymological dimension: This dimension involves defining key concepts, such as lexicon, dictionary, lexicography and lexicology, whilst taking into account the evolution of lexical studies from the Arabic heritage to modern linguistics. It also covers the semantics of vocabulary, lexical networks, semantic relationships (synonymy, antonymy, generalisation), and the contextual/pragmatic use of vocabulary. Furthermore, this dimension addresses lexical derivation and word formation.

An applied component based on:

- Linking this knowledge to classroom practice through practical activities, such as metaphor, so that the course is not limited to the theoretical aspect.

- Training trainee teachers in strategies for developing lexical competence (mind maps, semantic fields and derivation).

- Strengthening the link between vocabulary and other components of language, particularly grammar and morphology.

- Adopting neuropedagogical approaches and drawing on their findings, which confirm that vocabulary learning depends on the formation of interconnected networks within the brain and on linking words to sensory and contextual experiences. This is because effective learning occurs when new knowledge is linked to existing cognitive networks.[34] This can be utilised in the design of lexical activities based on interconnection, classification and usage. Consequently, we can advocate for **the inclusion of a comprehensive 'vocabulary' module** in the curriculum, not as a cognitive luxury, but as a cognitive and educational necessity that allows for the construction of a coherent view of vocabulary as a living and evolving linguistic system, linking word production, meaning-making and the organisation of semantic relationships between lexical items. However, this approach must be understood within the context of restructuring language teaching as a whole, so that the module does not become a mere quantitative addition, but rather a mechanism for integrating linguistic knowledge into a single comprehensive framework that serves classroom practice, unifies it into a coherent whole, and restores the importance of vocabulary as the foundation of meaning-making. This shift will contribute to the training of teachers capable of developing learners' lexical competence, thereby enhancing their ability to comprehend, produce and communicate.

3.3. The Importance of Mind Maps for Understanding Meaning within the Framework of Neuropedagogy

Mind maps are considered an effective educational tool for teaching vocabulary from a neuropedagogical perspective, as they enable the transformation of lexical structure from its abstract form into a visual representation that mimics the dynamics of brain function. Just as the mental lexicon consists of interconnected semantic networks, mind maps reflect this structure by organising concepts into radial networks Or a typical pattern; from a neuropedagogical perspective, this technique helps to strengthen neural connections and stimulate long-term memory, thanks to its reliance on multisensory input (the five senses) and visual representation. Consequently, the integration of mind maps into vocabulary teaching enables the construction of dynamic meaning based on understanding, experience and application, rather than rote memorisation and mechanical recitation. Mind maps are considered an essential educational tool, as they mimic the network structure of mental vocabulary as described by cognitive linguistics. As mentioned earlier, the lexicon does not consist of isolated, independent units, but rather of conceptual networks based on prototypes and semantic extensions, where meanings are organised around a prototype, from which an infinite number of usages branch out[35] . Lankker endorses this view, arguing that linguistic knowledge is inherently network-based, and that lexical units are understood within the framework of interconnected links within a dynamic conceptual system.[36]

From this perspective, mind maps, as developed by Tony Buzan (2018), represent a visual embodiment of this structure,

[33] Evans and Green (2006), p. 6; and Thomas (2019), p. 74.

[34] Thomas (2019), p. 72.

[35] Lakoff (1987), pp. 12–57.

[36] Lanker (2008), pp. 7–16.

organising concepts in a diagrammatic form that reflects the mechanisms of interconnection and branching in thought.[37]

From the perspective of neuropedagogy, this concept aligns with the work of Stanislas Dehaene (2014), who explains that learning is based on the strengthening of neural networks or synapses through interconnection and repetition, and that the brain processes information in the form of interconnected, branching and non-linear patterns.[38] Marie-Hélène Imordino-Yang (2016) also points out that effective learning requires the engagement of emotional and sensory dimensions, which mind maps achieve through their use of colours, images and visual organisation.[39] Consequently, the use of mind maps in vocabulary teaching is not limited to facilitating comprehension; it also contributes to the construction of dynamic meaning based on the interaction between linguistic structure and neural processing, thereby enhancing deep understanding and developing learners' lexical competence.

Conclusion

In this paper, we have shown that lexicology is concerned with the study of vocabulary not only in terms of its phonological, linguistic and morphological structure, but also in terms of its semantic relationships, its organisation in the mind, and its role in the production of meaning. Furthermore, vocabulary acquisition and an understanding of the types of relationships between words, as well as the information stored within them, form the foundation upon which syntactic and morphological development is built, as the learner uses words as a starting point for constructing syntactic patterns, thereby making the lexicon the starting point for the development of linguistic competence.

Neuropedagogy, as explained by Stanley DeHaan in his work, emphasises that learning is based on the formation of neural networks and the strengthening of links between concepts, as well as the interaction between memory, attention and context. The brain does not store words in isolation, but rather in the form of interconnected semantic networks; this means that learning vocabulary and its associations is, in essence, a reorganisation of the brain through the formation of relationships between meanings. We have addressed this topic in three sections: in the first, we discussed the conceptual foundations of lexicology; in the second, the semantics of vocabulary; and in the third, lexicology in the context of universities and training centres, whilst attempting to put forward some proposals to ensure that lexicology occupies the place it deserves, particularly in training centres.

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