

MASTERARBEIT | MASTER'S THESIS

Titel | Title

A quantitative study investigating tertiary-level EFL students' use of vocabulary learning strategies in formal education and in extramural English practices

verfasst von | submitted by

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angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of
Master of Education (MEd)

Wien | Vienna, 2026

Studienkennzahl lt. Studienblatt |
Degree programme code as it appears on the
student record sheet:

UA 199 507 529 02

Studienrichtung lt. Studienblatt | Degree
programme as it appears on the student
record sheet:

Masterstudium Lehramt Sek (AB) Unterrichtsfach
Englisch Unterrichtsfach Spanisch

Betreut von | Supervisor:

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List of Abbreviations

AI.....	Artificial intelligence
BA.....	Bachelor of Arts
BBC.....	British Broadcasting Corporation
Bed.....	Bachelor of Education
CI.....	Confidence interval
COG.....	Cognitive strategies
DET.....	Determination strategies
DF.....	Degree of freedom
EE.....	Extramural English
EFL.....	English as a foreign language
ER.....	Extensive reading
ESL.....	English as a second language
FE.....	Formal education
FL.....	Foreign language
IR.....	Intensive reading
L1.....	First language
L2.....	Second language
L3.....	Third language
LBC.....	Learning beyond the classroom

LLS.....	Language learning strategies
M.....	Mean value
MA.....	Master of Arts
MEd.....	Master of Education
MEM.....	Memory strategies
MET.....	Metacognitive strategies
P.....	Probability value
P.....	Productive language skills
R.....	Receptive language skills
RQ.....	Research question
SD.....	Standard deviation
SLA.....	Second language acquisition
SOC.....	Social strategies
VLS.....	Vocabulary learning strategies

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1. Introduction

Contrary to the widespread assumption that language learning is limited to classrooms, language acquisition extends far beyond the confines of formal education. Some scholars have begun to criticize classroom-based language learning because, although students receive instructed exposure to language, driven by learning objectives, syllabi, and curricula, they do not encounter real-life input that reflects everyday language use (Nunan, 1987; Gilmore, 2004; Illés & Akcan, 2017). Consequently, even though schools have long been regarded as the primary sites of foreign language instruction and instructed language learning remains important, students nowadays are no longer as dependent on classroom-based learning as they once were (Richards, 2009, p. 10). One contributing factor to this shift is the global rise of English as a lingua franca (Jenkins, 2009, p. 41), accompanied by technological advancements that made learning English possible at virtually any time and in almost any setting (Hyland, 2004, p. 180). English input is readily available and easily accessible to learners via the Internet, including social media, streaming services, and online gaming, enabling learners to encounter authentic, real-life English use (de Bot, Evers, & Huibregtse, 2007, p. 68).

The recognition that language learning extends beyond formal instruction brought *out-of-school* language learning into focus for many researchers (de Bot, Evers, & Huibregtse, 2007; Berns, de Bot, & Hasebrink, 2007; Benson & Reinders, 2011). For instance, the umbrella term *language learning beyond the classroom* refers to language-related activities learners engage in outside school settings and encompasses multiple forms and dimensions that characterize this learning, such as incidental, out-of-school, informal, and self-instructed learning, among others (Benson, 2011, p. 9). In addition to these concepts, Sundqvist (2009) coined the term *Extramural English* (EE), which refers to English-language activities that learners engage in outside school, typically on a voluntary basis and often driven by personal interest rather than explicit learning goals (Sundqvist, 2009, p. 25). Although EE is typically used for entertainment purposes, the concept does not rule out EE motivated by language learning objectives. Studies have shown the positive effect of extramural English practices on improving English language skills, even when the primary reason for EE engagement is not language learning (Sundqvist & Sylvén, 2016; Peters & Webb, 2018; Schwarz, 2012; Nguyen, 2023).

A central area in language learning is the one of vocabulary learning, regardless of whether students learn the language in an extramural or school setting. Researchers have consistently stated that vocabulary is the most essential component of a language and outweighs other linguistic aspects, as it is the foundation of every language (Wilkins, 1972; Clark, 1993; Nation, 2013). Given its importance, vocabulary learning has become a central area of inquiry in the field of Second Language Acquisition, and studies have begun exploring strategies that facilitate vocabulary learning. These strategies are called vocabulary learning strategies (VLS) and include strategies such as looking up words in a dictionary, learning translations and synonyms, and guessing their meaning from context (Schmitt, 1997; Oxford, 1990). Research findings also indicate that vocabulary learning strategies are used more frequently than any other language strategies, such as ones that facilitate listening or writing (Chamot et al., 1987). Despite substantial research on vocabulary learning strategies, only one study has examined learners' use of VLS in EE activities (Calafato & Clausen, 2024). Consequently, there is limited understanding of how learners approach vocabulary learning in extramural contexts, and it remains unclear whether learners apply the same strategies in EE use as in instructed settings. Therefore, the present study seeks to fill this gap in the existing literature and examines the relationship between vocabulary learning strategies used in formal education and in EE settings.

More specifically, this paper examined whether tertiary-level EFL students at the University of Vienna incorporate vocabulary learning strategies used in formal education into their EE practices. To begin with, it was explored whether students employ vocabulary strategies in formal education and, if so, which vocabulary learning strategies were most frequently utilised. For this purpose, five vocabulary learning strategy categories will be considered, namely planning, determining, recording, learning, and self-management strategies. Subsequently, it was examined which EE activities students engage in and how regularly, and the underlying reasons for these practices were analysed. Building on this, the study investigated the extent to which learners implement vocabulary strategies during extramural English activities. To this end, the same set of vocabulary learning strategy categories and items were used as in the preceding investigation of formal education. Finally, to determine the extent to which tertiary-level EFL students integrate vocabulary strategies employed in formal education into their extramural English activities, the findings from the two research questions on vocabulary learning strategy use were compared to reveal differences and identify specific trends in

participants' vocabulary learning strategy use across both learning contexts. The research questions formulated to accomplish these aims are as follows:

1. To what extent do tertiary-level EFL students implement vocabulary learning strategies in formal education?
2. What types of EE activities do tertiary-level EFL students engage in?
3. What are the primary reasons for which EFL students engage in EE activities?
4. To what extent do tertiary-level EFL students implement vocabulary learning strategies in EE practices?
5. To what extent does EFL students' use of vocabulary learning strategies differ between formal education and EE settings?

The study at hand is structured into five main sections, namely the literature review, research methodology, results, discussion, and conclusion. The first section comprises the literature review, in which the theoretical foundations relevant to this study are discussed. Accordingly, it is divided into three parts, beginning with establishing a theoretical framework to clarify the concept of vocabulary and vocabulary knowledge before examining the strategies involved in its acquisition, followed by an overview of vocabulary learning strategies and existing VLS taxonomies, and finally, the concept of EE and learning beyond the classroom will be addressed. The second section outlines the research methodology and presents the research aim, the research questions, the participants in the study, the instrument used to collect data, and the data analysis, that is, how the data will be analysed. Section three presents the study's results, organized by research questions. Section four discusses, interprets, and situates the results within the existing literature, and the implications are outlined. Lastly, conclusions are drawn.

2. Theoretical foundations of L2 vocabulary knowledge

While the present study does not aim to measure vocabulary knowledge, establishing a comprehensive theoretical framework is essential for clarifying the concept of *vocabulary* before examining strategies involved in its acquisition. To this end, this chapter of the literature review examines various aspects related to vocabulary, beginning with its importance in learning English as a foreign language, followed by a detailed discussion of its definition. The following subsection explores both the breadth and depth of vocabulary knowledge, and the subsequent subsection deals with the distinction between implicit and explicit vocabulary acquisition.

2.1. Importance of L2 vocabulary knowledge

Mark Twain's (2005) quote on the impact of word choices, "the difference between the almost right word and the right word is the difference between the lightning and the lightning bug" (p. 252), can be applied to foreign language learning, as a minor slip in word choice can completely change the meaning, much like the difference between lightning and a lightning bug. In essence, if one lacks the right words, it is impossible to communicate effectively in the target language. Consequently, when learning a foreign language, the focus should be on developing sufficient vocabulary knowledge, as it forms the basis on which all languages are built. In simple terms, "words make a language" (Clark, 1993, p. 1).

To further emphasize the central role of vocabulary in language learning, many researchers prioritize vocabulary over other aspects, mainly grammar (Wilkins, 1972; Nation, 2013; McCarthy, 1990). Accordingly, Wilkins (1972) famously stated that "without grammar very little can be conveyed, without vocabulary nothing can be conveyed" (p. 11). In sum, without words, grammar cannot be applied at all. Besides ranking the importance of vocabulary above the one of grammar, Clark (1993) compares it to other linguistic aspects such as pronunciation, word structure, and syntax and argues that "without words, there would be no sound structure, no word structure, no syntax. The lexicon is central in language, and central in the acquisition of language" (p. 1). However, it is unnecessary to dispute the relative importance of the language components, as they complement one another. In simple terms, there is no language without vocabulary, yet learning vocabulary alone does not suffice to form coherent sentences, which makes grammar, along with other aspects, equally crucial in language learning. Nevertheless, in line with the conclusions of numerous researchers, one could argue that

vocabulary holds a slight edge in terms of importance, although all the linguistic aspects listed in Table 1 are essential for language learning (Nation, 2013, p. 1)

Table 1. *Goals for language learning*

General goals	Specific goals
Language items	Pronunciation Vocabulary Grammatical construction
Ideas (content)	Subject matter knowledge Cultural knowledge
Skills	Accuracy Fluency Strategies Process skills or subskills
Text (discourse)	Conversational discourse rules Text schemata or topic type scales

The importance of vocabulary is further reinforced by studies on lexical coverage, which show how the percentage of known words can affect reading comprehension. In line with this, Alderson (2005) argues that “language ability is to quite a large extent a function of vocabulary size” (p. 88). Regarding reading and successful reading comprehension, Laufer and Ravenhorst-Kalovski (2010, p. 868) argue that learners need to know about 4,000–5,000 word families to comprehend texts in the target language, which requires a 98% coverage of the lexical threshold. Moreover, to achieve fluent and independent reading, learners require approximately 6,000–8,000 word families (see section 2.3.1). In line with their findings, Steinberg (1987) states that “one’s level of vocabulary is highly predictive of one’s level of reading comprehension” (p. 90). Research findings show that learners with a larger vocabulary are also more successful in other skills. For instance, Staehr’s (2009) study found that EFL learners with an extensive vocabulary achieved better results in listening comprehension.

Regarding productive skills, Crossley and McNamara’s research (2012) shows that writing proficiency is significantly influenced by linguistic sophistication, including vocabulary diversity and complexity, which play an important role in clarity and coherence. Meanwhile, Koizumi and In’nami (2013) observe that learners with greater lexical repertoires demonstrate more fluency and accuracy when speaking. In conclusion, word knowledge provides the foundation for all language skills. The richer and more developed learners’ vocabulary, the more precisely they can express their ideas, leading to more sophisticated and well-written texts (Laufer & Nation, 1995, pp. 307–308).

Although most academic research and publications focus on vocabulary development among school-aged learners, it is essential to note that expanding the language repertoire of university students of English is not negligible, as studies have found that vocabulary knowledge can predict academic attainment (Spencer et al., 2017, p. 193). After the acquisition of basic vocabulary, for advanced EFL learners such as university students, further vocabulary development is not only an option but often an expectation (Webb & Nation, 2017, p. 85). This is mainly the case because students tend to be less familiar with academic vocabulary and technical language in their own field (e.g., linguistics, literature...), as these words are low-frequency items that occur less often than general vocabulary terms (Coxhead, 2000, p. 213). Bailey (2007) describes competence in academic English as “knowing and being able to use general and content-specific vocabulary, specialized or complex grammatical structures, and multifarious language functions and discourse structures” (pp. 10–11). In their study, Hancioglu, Neufield, and Eldridge (2008) contended that memorizing definitions of academic words alone does not equip students for academic discourse. Instead, they recommend focusing “on revisiting and recycling the most commonly used words in order to unravel the contexts, varied meanings, register, etc., that would help turn these words into powerful tools of understanding and expression” (p. 468). Thus, the acquisition and incorporation of field-specific and academic vocabulary into one's language use requires continuous work on vocabulary, which enables students to publish, present, or participate in professional discourse (Townsend et al., 2012, p. 500)

2.2. Understanding vocabulary

At first glance, “what is vocabulary?” might seem like the simplest of inquiries. After all, most people would say it is just the words we use to speak, read, and write. Nonetheless, McCarthy (2023, p. 2) reminds us that “things are rarely as simple as they look, and we need to dig deeper into the terms we use to understand how things work”. In reviewing the extensive body of existing literature on vocabulary, published by prominent scholars in this field, such as Nation (2013), Schmitt (2000;2020), Clark (1993), McCarthy (1990;2023), Carter (2012) and Plag (2003) amongst many, it is clear that there is no universally accepted definition that includes the full scope and complexity of the term ‘vocabulary’. Scholars have proposed different definitions, and therefore, the consensus is that vocabulary cannot be reduced to a single dimension, as it “can refer to a number of different, but connected, things” (McCarthy, 2023, p. 2). Instead, vocabulary should be explored from multiple angles, such as word types,

vocabulary size, and aspects of word knowledge. Consequently, this subsection will review these dimensions to offer a thorough examination of the concept of vocabulary.

It is worth starting with the simplest approach, which McCarthy (2023) himself describes as a good starting point, namely, “for most people, vocabulary means words” (p. 2). Similarly, Schmitt (2000) points out that when talking about vocabulary, “the first idea which probably springs to mind is words” (p. 1). These observations appear both superficial and overly broad, hence prompting a further question: What, precisely, are words? There have been several attempts to define what a word is, however, the number of different definitions of this concept is such that it indicates its complexity. Accordingly, Plag (2003) acknowledges in her introductory chapter that “we speak about words without ever thinking that this could be a problematic notion.” (p. 4). In an effort to resolve the conceptual challenges surrounding the notion of *word*, Plag (2003) suggests starting with the orthographic definition, for which Carter (2012) proposed the following definition: “a word is any sequence of letters (and a limited number of other characteristics such as hyphen and apostrophe) bounded on either side by a space or punctuation mark” (p. 20). Nonetheless, the orthographic definition alone is problematic because it focuses only on written language and fails to account for linguistic phenomena such as polysemy and grammatical functions (Plag, 2003, pp. 4-5).

Secondly, a *word* can be approached from a phonological point of view, which sees a *word* as “a unit in speech surrounded by pauses” (Plag, 2003, p. 5). Nevertheless, in natural speech, pauses do not occur exclusively at the boundaries of words, as speakers often use pauses between syllables; thus, the concept of potential pauses does not provide a clear framework for defining a *word* (Plag, 2003, p. 6).

Next, there is the integrity criterion, “which says that the word is an indivisible unit into which no intervening material may be inserted” (Plag, 2003, p. 7). Similarly, McCarthy (1990) defined words as “freestanding items of language” (p. 1). In other words, a *word* should comprise at least one freestanding morpheme, suggesting that modifiers cannot be inserted within it. However, in some instances, such as “mother-in-law”, constructions violate this principle, which shows that the integrity criterion does not cover all linguistic exceptions (Plag, 2003, p. 7).

A different definition has been suggested by Clark (1993), who stated that “words constitute the smallest semantic units that can move around in an utterance” (p. 2), while Carter (2012) proposed the definition “[...] the minimum meaningful unit of language” (p. 21). Both definitions view *words* from a semantic viewpoint, as they focus on the role of the *word* as a carrier of meaning. On the one hand, these definitions do not account for multi-word expressions, as not all single concepts can be expressed by a single word, e.g., “bus conductor” (Carter, 2012, p. 21). On the other hand, the meaning of some words can only be understood in conjunction with their function in the sentence (e.g., “and”, “or”). At the same time, some morphemes cannot exist independently, even if they carry meaning (e.g., the prefix “re” in “reorganize”) (Pavičić, 2008, p. 5).

Lastly, according to the syntactic definition of a word, words are the smallest, clearly regulated units of language, referred to as syntactic atoms, identified, for example, by the position of auxiliaries at the front of yes/no questions (Plag, 2003, p. 7). However, this criterion is problematic, as it does not account for blurred word boundaries or reflect linguistic variety in terms of word classes and internal structures (Plag, 2003, p. 8).

Rather than proposing a single definition of what constitutes a *word*, Plag (2003, p. 8) outlines the following properties that characterize a *word*:

- words are entities having a part of speech specification
- words are syntactic atoms
- words (usually) have one main stress
- words (usually) are indivisible units (no intervening material possible)

As indicated by the significantly condensed overview above, presented to briefly introduce the key points, the meaning of *word* has been a subject of debate, in which this paper does not intend to partake in any further depth. Instead, in this paper, a *word* is viewed in the sense of a *lexical item*, which includes “any word, abbreviation, partial word, or phrase which can figure in a dictionary (often as the headword of an entry) as the ‘target’ of some form of lexicographic description, most commonly a definition or a translation” (Atkins & Rundell, 2008, p. 163).

After recognizing that vocabulary may refer to an individual word, it should also be considered that the term can denote various aspects of language: “when we speak of the vocabulary of a

language we are speaking primarily, but not exclusively, of the words of that language” (McCarthy, 1990, p. 1) Thus, in addition to referring to individual words, *vocabulary* is often viewed as a kind of *dictionary* or a set of words (Aitchison, 1990, p. 3). However, words are not only listed in dictionaries, they are also stored in the human mind, forming an individual repertoire of the words one uses and understands. Therefore, the broader meaning of *vocabulary* refers to an individual’s vocabulary, which is stored in the mental system of the language user (Clark, 1933, p. 1). This system is also known as the *mental lexicon*, which Hedge (2000) aptly describes through the metaphors "a storehouse, a library, an encyclopaedia, and a computer" (p. 122). In doing so, Hedge (2000) points out that the lexicon is a bank or store of knowledge in the human mind, into which already acquired words are incorporated, and from which the speaker draws for comprehension and speech production. Clark (1993) emphasises this role in the following quote:

The lexicon of a language is the stock of established words speakers can draw on when they speak and have recourse to in understanding what they hear. This stock is stored in memory in such a way that speakers can locate the relevant units to use in both speaking and understanding. To do this, of course, speakers have to be able to identify words either by looking them up in memory (for comprehension) or by retrieving them as appropriate forms for conveying specific meanings (for production) (p. 2)

The concept of the mental lexicon will be further discussed in relation to vocabulary size in the following section.

2.3. Understanding word knowledge

Having set forth the initial definitions of vocabulary, this subsection elaborates on concepts related to vocabulary knowledge, namely, English vocabulary size and components of word knowledge. A long-established descriptive framework examines vocabulary by considering its size (breadth) and depth (quality) (Schmit & Schmitt, 2020, p. 38). Simply put, breadth is the number of words we know, while depth refers to the degree or thoroughness of our knowledge of a word (Read, 2004, p. 155).

2.3.1. Vocabulary size

Accordingly, building on the concept of *mental lexicon*, vocabulary often refers to the number of words that a person knows, so it is not surprising that many researchers identify the concept of *vocabulary* primarily with the size of one’s vocabulary (Nation, 2013; Schmitt, 2000). Nonetheless, defining *vocabulary size* is by no means a straightforward task, as vocabulary size depends mainly on how words are defined and categorized (Schmit & Schmitt, 2020, p. 9). To

make this distinction clearer, the notion of *counting unit* was introduced, which encompasses tokens, types, lemmas, and word families (Nation, 2013; Schmitt, 2000).

Firstly, one of the simplest and most common ways of counting words is to count each word (Schmit & Schmitt, 2020, p. 9), also referred to as *tokens*, where each word is treated and counted as a separate unit (Nation, 2013, p. 9). To illustrate this, Nation (2013) used the example sentence “It is not easy to say it correctly” (p. 9), which consists of eight words in total. Even if the word *it* occurs twice, it is counted separately for each occurrence, so that the sentence contains eight *tokens*.

Another method of counting words is *types*, in which repeated occurrences of the same word are not counted separately (Nation, 2013, pp. 9-10). The example sentence above consists of eight *tokens* but encompasses seven *types*. This counting unit is often used to measure linguistic competence or to determine the depth of someone's knowledge of a language (Nation, 2013, p. 10).

On the other hand, if we want to determine how many words a person knows, counting all *tokens* and *types* might seem odd, since different grammatical forms of a given word, such as tenses or plural forms, cannot be considered separate lexical units (Nation, 2013, p. 10). Instead, another counting unit called *lemma* can be used, which is defined as “a set of lexical forms having the same stem and belonging to the same major word class, differing only in inflection and/or spelling” (Francis & Kučera, 1982, p. 3). For example, the following forms can all be part of a single *lemma*: “the base form of a word and its inflected forms (e.g., plural/past tense/-ing form) all brought together, for example, speak, speaks, spoke, speaking, and spoken.” (McCarthy, 2023, p. 106).

According to Francis and Kučera's (1982) definition, *lemmas* are counting units that belong to the same word class, but they do not include derived forms with affixes. Such words are part of a broader counting unit called *word family*, which “is usually defined as a basic word-form and all its related derivations, so, for example, beauty, beautiful, beautifully, beautify, and beautification all belong to the same word family” (McCarthy, 2023, p.106). In other words, words that share a common root but differ in their grammatical forms are grouped within the same word family (Nation, 2013, p.11).

Before establishing how many words L2 learners should know to carry out specific competences successfully, as a reference point, it should be clarified how many words there are in English. Numerous studies have estimated the vocabulary size of the English language quite differently, with published figures ranging from 400,000 to 2 million words (Claiborne, 1983; Crystal, 1988; Bryson, 1990). One explanation for this is that researchers often use different counting units. In a study based on Webster's Third International Dictionary, Goulden et al. (1990) identified 54,000 word families, which gives an idea of the number of closely related lexical units in the English language. Although the Oxford English Dictionary lists more than 600,000 words, it is difficult to determine exactly how many words make up the English language, as new terms are constantly added while old ones are gradually falling out of use (Schmitt & Schmitt, 2020, pp. 8-9).

Several studies have attempted to quantify the average number of word families that native speakers of English (L1) are familiar with. Most results show that this number generally ranges between 10,000 and 20,000 word families (Nation, 2013, p. 13). Studies with smaller sample sizes using yes/no tests, such as those conducted by Goulden et al. (1990) and D'Anna et al. (1991), found an average of about 17,000 word families. However, a study using a more rigorous methodology, which required participants to provide synonyms and explanations to demonstrate word knowledge, found that this number could be as low as 10,000-11,000 word families (Treffers-Daller & Milton, 2013).

While research on the vocabulary size of English and the lexical size of native speakers provides important data, the question of how many words language learners need to know in order to tackle different language tasks successfully remains an equally important issue. Empirical evidence suggests that the most basic communication, often used to manage basic, everyday English communications, requires the knowledge of about 120 items (Schmitt, 2000, p. 142). To exceed this basic level and to understand 90% of everyday conversations, around 3000 word families are needed (Schmitt & Schmitt, 2020, p. 11). However, for learners to master spoken language at a higher level and comprehend multiple genres and topics, approximately 6,000 to 7,000 word families are required, which provide 98% coverage in everyday interactions (Schmitt & Schmitt, 2020, p. 12). The next level, which includes more complex authentic language material such as literature or news, 80,000-90,000-word families are recommended. While between 16,000-20,000-word families are required to reach native-speaker proficiency (Schmitt & Schmitt, 2020, p. 12).

2.3.2. Aspects of vocabulary knowledge

As discussed in the previous subsection, vocabulary size is a crucial factor in determining linguistic proficiency; however, “knowledge of individual words is just the tip of the iceberg” (Stahl & Nagy, 2006, p. 10). Consequently, a key question that arises is: What does it really mean to know a word?

Nation's (2013, p. 49) components of word knowledge will be used as the framework for the theoretical discussion of vocabulary depth, as it is the most comprehensive specification of the knowledge required to master a word (see Table 2). In line with Nation's (2013) aspect of word knowledge, Read (2004, p. 155) emphasized that learners must move beyond a basic grasp of word meaning to develop a deeper understanding that includes its form, grammatical behavior, collocational range, and appropriate contextual use.

Table 2. *Aspects of word knowledge*

Form	spoken	R	What does the word sound like?
		P	How is the word pronounced?
	written	R	What does the word look like?
		P	How is the word written and spelled?
	word parts	R	What parts are recognisable in this word?
		P	What word parts are needed to express this meaning?
Meaning	form and meaning	R	What meaning does this word form signal?
		P	What word form can be used to express this meaning?
	concept and referents	R	What is included in the concept?
		P	What items can the concept refer to?
	associations	R	What other words does this make us think of?
		P	What other words could we use instead of this one?
Use	grammatical functions	R	In what patterns does this word occur?
		P	In what patterns must be used this word?
	collocations	R	What words or types of words occur with this one?
		P	What words all types of words must we use with this one?
	constraints on use (register, frequency...)	R	Where, when and how often would we expect to meet this word?
		P	Where, when and how often can we use this word?

First of all, before discussing the components listed in Table 2, it is important to underline that the distinction between receptive and productive vocabulary is partly based on an analogy between receptive (R) and productive (P) language skills. Nation (2013, p. 47) defines receptive vocabulary as the ability to identify a word's form and meaning during input-based

activities, and productive vocabulary as the capacity to recall and accurately produce that word when expressing meaning through speaking or writing.

Nonetheless, the two concepts are not always sharply separated, as learners might recognize words passively without having the capacity to use them actively. This has led researchers to differentiate between receptive and productive knowledge. The former includes words that learners can understand when encountered without being able to use them. In contrast, the latter refers to words learners can actively use in speaking or writing (Nation, 2013, p. 47). This distinction is important because it shows that word knowledge exists along a continuum rather than as an absolute state of either knowing or not knowing a word. Therefore, word knowledge “is a matter of degree rather than a question of either/or” (Faerch et al., 1984, p. 99).

Commenting on Nation's (2013, p. 49) table, there is quite a lot to master before we can say we know a word. First of all, we need to know its form, which consists of three main components: the spoken form, the written form, and the word elements. In learning the spoken word form, learners must be able to recognise the word when they hear it and recall and pronounce it correctly (Nation, 2013, p. 65). In the case of the written form, understanding letter-sound correspondence is essential, especially when the orthographic systems of the L1 and the target language differ significantly (Nation, 2013, pp. 71-72). Moreover, the analysis of word parts, such as prefixes and suffixes, contributes to easier processing and memorisation of new words, as it supports the understanding of word structure and meaning (Nation, 2013, p. 72).

After mastering the form, one of the most important aspects of word knowledge is the relationship between form and meaning (Nation, 2013, p. 73). This means that it is not enough for learners to know the written or spoken form of a word, they must be able to assign the correct meaning to it. The strength of the form-meaning relationship determines how quickly learners can retrieve the meaning of a word and how effectively they can use the correct word when trying to express a concept (Nation, 2013, p. 73). Words often have multiple meanings, which can be treated in two ways. On the one hand, learners can store separate mental representations for each meaning, on the other hand, they can develop a comprehensive, abstract concept that covers the various uses of the word (Nation, 2013, p. 74). Nagy (1997, p. 66) describes two ways learners identify word meanings that can help learners grasp meaning shapes. Firstly, *sense selection*, where specific meanings are memorized and chosen based on context, and *reference specification*, where learners recall a general concept and narrow it

down contextually. Moreover, association-based methods, such as linking words to other words, for example, through synonyms, opposites, or superordinate-subordinate relationships, play a key role in the organisation of the mental lexicon and help to develop a deeper understanding of meanings, expand learners' vocabulary, and support comprehension and expression (Nation, 2013, p. 79).

At this stage, the third and final category of components is introduced, namely the aspects of word usage that focus primarily on grammatical functions and collocations. First, "it is necessary to know what part of speech it is and what grammatical patterns it can fit into" (Nation, 2013, p. 82). Apart from grammatical functions, which include tense, irregular forms, and word order, learners should recognise collocations, which indicate the typical way words are used together. Thus, successful word use depends on grammatical appropriateness and the use of appropriate collocations.

This concludes the first subsection on vocabulary, addressing its importance, meaning, size, and dimensions of knowledge. In the following chapter, learning strategies that can be employed to develop both vocabulary size and depth will be examined.

2.4. Incidental vs. intentional vocabulary learning

The previous subsections discussed how much vocabulary is needed to understand and use English at different levels and for different purposes, and what knowing a word actually entails. This subsection focuses on the distinction between intentional and incidental vocabulary learning in order to explore the different ways learners can acquire vocabulary knowledge. Moreover, since incidental learning encompasses informal learning outside educational institutions which "holds immense significance in language learning processes" (Teng & Reynolds, 2025, p. 1), this distinction is particularly relevant to this study, as one of its main focuses is EE, which includes English-language activities in which learners participate outside of school on their own initiative (discussed in subsection 4.2). Although the concept of EE emphasizes that learning is most commonly not the primary aim of English engagement (Sundqvist, 2009, p. 25), studies have shown that frequent exposure to a foreign language can improve language skills and lead to vocabulary development as a secondary effect (Webb, 2020, p. 224).

Accordingly, Schmitt (2000) stated that there are "two main processes of vocabulary acquisition: explicit learning through the focused study of words and incidental learning

through exposure when one's attention is focused on the use of language, rather than the learning itself" (p. 116). Despite the forms of vocabulary learning, in the second language acquisition research, vocabulary learning has been considered an intentional learning process through which learners acquire new words consciously (Tomlinson, 1998, p. 4). By definition, intentional vocabulary learning is a deliberate process in which learners focus their attention on specific target words (Tomlinson 1998, p. 4). In essence, after students choose which words they want to learn, they determine how they will learn them so they can memorize and use them, and transfer them into their mental vocabulary (Schmitt, 2000, p. 131). The latter is why intentional learning is defined as a process where "learners are aware of when and what they are learning" (Tomlinson, 1998, p. 4). At this point, referring back to Nation's (2013, p. 54) aspects of word knowledge, learners do not only need to focus on which vocabulary item they want to learn, they also need to plan their learning and decide which word aspects they want to focus on, namely form, meaning, or use. Once learners decide which aspect of the vocabulary they want to learn, they can intentionally focus on that aspect and engage actively with word forms and meanings through activities such as creating flashcards, repeating the word, looking up translations, or studying definitions (Webb, 2020, p. 226). This focused and deliberate engagement with vocabulary items creates strong neural connections, which promote acquisition and help transfer these words into learners' mental vocabulary (Schmidt, 1990, p. 132).

Schmidt (1990, pp. 131-133) identifies three relevant levels that characterise intentional learning, namely perception, noticing, and understanding. First, perception is the mind's automatic organization and representation of external events. Secondly, after perception, noticing begins when learners consciously pay attention to what they have perceived. Lastly, after perceiving and noticing information, understanding follows, which also includes metacognition and problem-solving to fully comprehend the information (Schmidt, 1990, p. 132). In the case of vocabulary learning, perception occurs when learners encounter a new word, then noticing happens when learners consciously pay attention to it, and lastly, understanding develops when the learners try to understand its meaning, form, usage, and connection to other words. As it is not the easiest process, intentional vocabulary learning can be supported with additional vocabulary learning strategies, such as planning, recording, and learning strategies that help learners acquire specific vocabulary items (Schmidt, 1990, p. 133).

Some researchers argue that although learning is typically a deliberate decision, which makes it a conscious process, most vocabulary items are learned incidentally (Carter, 2012; Hulstijn, 2001; Gregg, 1984; Seliger, 1983). Consequently, Seliger (1983, p. 187) has argued that “obviously, it is at the unconscious level that language learning takes place”. Incidental learning is, therefore, often juxtaposed with intentional learning. Moreover, incidental learning means that the learning is viewed as “a by-product of the learner being engaged in a listening, reading, speaking or writing activity” (Hulstijn, 2001, p. 265). In other words, the only intention of learners is to read, listen to English material, or participate in spoken or written English interaction, and, in doing so, they acquire new knowledge of the language, such as new vocabulary items. Although their participation in these English language activities is a conscious decision, they might not engage in them to learn new words. This process can happen incidentally, as a by-product or secondary benefit of their engagement with the language (Webb, 2020, p. 226). However, the success of the incidental learning can also depend on various factors, such as context and learner proficiency. Carter (2012, p. 194), for example, stated that more proficient learners are more likely to learn new vocabulary incidentally, as they understand the majority of the items that make up the spoken or the written text. Hence, when they encounter a new word, they can infer its meaning from the context and remember the word more easily. In these cases, vocabulary acquisition is more likely to be incidental.

Schmidt (1990, p. 132) argues that sometimes it is difficult to draw a clear distinction between conscious and unconscious learning in second language acquisition. Therefore, he states that whether language learning occurs intentionally or incidentally depends on several factors. One of these factors is repetition. Several researchers maintain that in order to acquire a word successfully, learners must be exposed to it multiple times (Chen & Truscott, 2010; Jenkins et al., 1984; Webb, 2020). Additionally, the likelihood of retaining words successfully is higher in spaced repetition (Gu & Johnson, 1996, p. 655; Nation, 2013, p. 72). When reading, for example, learners encounter unknown vocabulary items, the likelihood of learning and retaining them is only about 5% to 14% (Nagy, 1997, p. 74). Therefore, incidental learning is possible, but it requires willingness to learn, practice, and use over time to ensure its retention. Accordingly, Craik and Tulving (1975) stated that

what determines the level of recall or recognition of a word event is not intention to learn, the amount of effort involved, the difficulty of the orienting task, the amount of time spent making judgements, or even the amount of rehearsal the items receive; rather it is the qualitative nature of the task, the kind of operations carried out on the items, that determines retention. (p. 270)

To learn more about whether incidental vocabulary learning is plausible during various language-related tasks, extensive research has been conducted on this topic. One of the most researched language skills in this context has been reading, particularly extensive reading, in which learners read for enjoyment. Extensive reading has been researched extensively in connection with implicit learning, because during reading, learners process a lot of information in the target language and encounter unfamiliar vocabulary. Consequently, Nagy, Herman, and Anderson (1985) argued that “incidental learning from context during free reading is the major mode of vocabulary acquisition” (p. 234). In their study, they have investigated incidental vocabulary acquisition from free-time reading among 50 8th graders. The students were divided into groups and read two different texts, each containing 15 low-frequency target words. Before the main study, students’ prior vocabulary knowledge was measured with a checklist test. After reading, students participated in an oral interview in which they explained word meanings and completed a multiple-choice vocabulary test. The study found that students knew more words from the passage they had read than from the one they had not. Consequently, these results showed that students have acquired new vocabulary items from the text, therefore, it can be concluded that incidental learning through reading can lead to vocabulary growth over time (Nagy et al., 1985, p. 252).

In a case study, Pigada and Schmitt (2006) investigated whether extensive reading alone can produce measurable incidental vocabulary development and which word aspects can be learned most effectively during this process. The participant in the case study was a 27-year-old Greek L1 speaker who is fluent in English and at a lower-intermediate level in French. For the study, four French graded readers were selected, and the participant read them over a timespan of one month. To measure results, the study tracked learning of 133 target words across three word knowledge aspects: spelling, meaning, and form. Moreover, pre- and post-test interviews and a spelling dictation test were used, and responses were scored on a partial-knowledge test to ensure the participant was not guessing them. The results showed a relevant difference between pre- and post-reading phrases in vocabulary improvement, but the progress was uneven across the word knowledge aspect. Spelling improved the most, and knowledge of article use with nouns increased significantly. However, the development of meaning was smaller, and meaning learning was minimal, especially for vocabulary items that occurred only once in the text. Therefore, the results show that extensive reading is an effective activity for incidental learning of various aspects of word knowledge, especially pronunciation and grammar; however, a single exposure to the items does not lead to meaning learning (Pigada & Schmitt,

2006, pp. 12-18). Consequently, these results are in line with Nation's (2013, p. 72) view that to acquire a word effectively, learners must be exposed to it multiple times.

Regarding incidental vocabulary development from audiovisual and audio activities, such as watching television and listening to music, studies have found results similar to those in reading. In their study, Peters and Webb (2018) investigated whether participants can acquire vocabulary incidentally from viewing a TV programme. They conducted two experiments with Dutch university students, in which one group watched a one-hour BBC documentary. They selected 64 target vocabulary items from the documentary and used pre- and post-tests to measure aspects of vocabulary knowledge. The first experiment assessed whether participants could recall the meaning of target words, and the second experiment aimed to ascertain the degree of meaning recognition using a multiple-choice test. The study concluded that viewing the TV programme led to significant incidental vocabulary learning, as measured by meaning recall and recognition. Results showed that participants learned about four target words after watching the TV programme for one hour. Moreover, they found a positive relationship between frequency of occurrence and learning, and that the participants' prior vocabulary knowledge influenced their vocabulary development (Peters & Webb, 2018, pp. 562-569).

A similar study was conducted by Perez (2020), who investigated incidental vocabulary learning among Dutch university students who were instructed to watch a documentary and focus on the overall meaning rather than on vocabulary learning. The learning was assessed immediately after watching the documentary with four different post-tests. The result showed that watching the documentary significantly improved participants' language skills in recognising spoken input. However, participants did not perform well on meaning recall, as they could not produce the meanings of the words. This suggests that participants need more and repeated exposure to retrieve the meaning. Another outcome of this study was that participants with a larger vocabulary size showed higher recall on the immediate tests (Perez, 2020, pp. 762-769). The latter result parallels the finding of Carter (2012, p. 194), who found that more proficient students tend to excel more in incidental learning.

Finally, Nie et al. (2022) investigated whether listening to English songs can contribute to incidental vocabulary learning among 114 Chinese tertiary-level EFL students. More precisely, they focused on three different aspects of vocabulary knowledge, namely, spoken form recognition, grammatical knowledge, and meaning recall. Before the testing, students

completed a vocabulary level test to measure their receptive vocabulary, and then they were grouped into one control and three experimental groups that listened to two different English songs they were not familiar with. The researchers selected 26 target vocabulary items across the two songs and assessed them using multiple-choice tests administered before, shortly after, and 4 weeks after listening to the songs. The results showed that the experimental groups outperformed the control group, with higher development across all three measured aspects, especially in spoken form recognition. However, these improvements did not last, as the four-week-delayed test showed that grammar recognition and meaning recall were closer to the results of the initial testing phase. Moreover, the results showed that exposure frequency played a significant role in vocabulary acquisition, with three repetitions yielding larger vocabulary gains. Similar to the study by Peters and Webb (2018), the results showed that prior vocabulary knowledge was associated with greater improvement across the three aspects of word knowledge. Consequently, these results again show that repetition is needed to ensure effective acquisition (Gu & Johnson, 1996, p. 655), and more proficient readers are more likely to learn new words incidentally (Carter, 2012, p. 194).

To conclude, the studies above have shown that retention depends less on how hard or how long learners study a word and more on how deeply they process it, for example, by connecting it to meaning, translations to other languages, and personal experiences. In other words, deeper, more meaningful processing leads to better retention.

3. From language to vocabulary learning strategies

This chapter addresses one of the central topics of the thesis, namely vocabulary learning strategies (VLS). The first subchapter will provide an overview of general language learning strategies, thereby establishing a conceptual foundation for the subsequent discussion. On this basis, the focus will then narrow down to vocabulary learning strategies, and the chapter will conclude with a review of prominent VLS taxonomies and existing research on VLS.

3.1. Language learning strategies

The concept of language learning strategies (LLS) in second language acquisition (SLA) gained prominence in the mid-1970s when researchers began examining the differences between more and less successful language learners (Rubin, 1975; Stern, 1975; Naiman et al., 1978). These early investigations were motivated by the attempt to discover what “good

language learners” did that set them apart (Rubin, 1975, p. 42). For instance, Rubin's (1975) influential work has shown that successful language learners often use a variety of techniques, including active guessing of unknown words, drawing on multiple sources, and constant self-monitoring (Rubin, 1975, pp. 45-48). Rubin's understanding of language learning strategies was grounded in these observations, and she defined them as “the techniques or devices which a learner may use to acquire knowledge” (Rubin, 1975, p. 43). Following this initial definition, Rubin (1981) proposed a framework that categorises LLS into two main groups. The first group includes strategies that directly influence the learning process, such as clarification and verification, monitoring, memorization, guessing, inductive reasoning, deductive reasoning, and practice. The second group encompasses strategies that indirectly facilitate learning, such as opportunities for practice and the use of communication strategies (Rubin, 1981, in O'Malley & Chamot, 1990, p. 4).

While earlier studies aimed to identify the behaviours of good language learners (Rubin, 1975; Stern, 1975; Naiman et al., 1978), later research focused more on developing taxonomies based on empirical investigations that can be integrated into learning practices. With this new emphasis, research on language learning strategies has grown significantly, and researchers such as Oxford (1990) and O'Malley and Chamot (1990) developed detailed strategy taxonomies to model and examine those employed by language learners. It is widely recognized that “even though researchers such as Joan Rubin, O'Malley, and Chamot were pioneers in the field of LLS, it is the work of Rebecca Oxford that many associate with the rise of LLS strategy research” (Rose, 2012, p. 138).

Accordingly, a significant turning point in the field came when Oxford (1990) published her widely cited work on language learning strategies, which was pivotal in promoting the idea that strategies could be explicitly taught and learned. Oxford (1990) defined language learning strategies as “specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations” (p. 8). In addition to this clear definition, her research also addresses features, assessment, instruction, and strategy application. Most importantly, it includes a thorough taxonomy that categorizes strategies into two principal classes, *direct* and *indirect*, which are then broken down into six specific groups: *memory*, *cognitive*, and *compensation* within the direct strategies, and *metacognitive*, *affective*, and *social* within the indirect strategies (Oxford, 1990, p. 14). Memory strategies aid word retention through associations and vocabulary revision, while

cognitive strategies can be used to engage with the language through note-taking, summarising, and highlighting key points. When learners encounter knowledge gaps, compensation strategies help them overcome their difficulties, such as guessing, translating, and even ignoring words. Metacognitive strategies enable learners to take control of their learning by planning, monitoring progress, and reflecting on outcomes. Lastly, affective and social strategies address emotional regulation and interaction with others (Oxford, 1990, p. 17).

Around the same time, O'Malley and Chamot (1990) proposed a classification system based on a review of existing research. They defined language learning strategies as “special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information” (O'Malley & Chamot, 1990, p. 1). Moreover, they divided learning strategies into three main types. The first category, *metacognitive* strategies, includes strategies that aid learners in planning, monitoring, and evaluating their learning, such as setting goals, identifying key tasks, and assessing comprehension or production. The second category, *cognitive* strategies, involves engagement with the learning material, such as rehearsal, translating, note-taking, summarizing, or using context clues to infer meaning. The last category, *socio-affective* strategies, addresses the social and emotional aspects of language learning, including techniques such as self-talk and strategies for managing anxiety or motivation (O'Malley & Chamot, 1990, p. 126).

Many existing definitions approach learning strategies in slightly different ways. Schmitt (1997) built on the definitions proposed by O'Malley and Chamot (1990) and Rubin (1975), stating that a learning strategy is “the process by which information is obtained, stored, retrieved and used” (p. 203). Another definition was proposed by Wenden (1987), who approached the concept from the perspective of strategic knowledge, arguing that learning strategies constitute “what learners know about the strategies they use” (p. 6). A more detailed description was provided by Gu (2003, p. 3), who defined learning strategies as deliberate actions learners use to complete a learning task. The process begins with analyzing the task, followed by selecting, applying, monitoring, and evaluating specific strategies, and revising them when necessary to enhance learning effectiveness.

Although scholars differ in how they define, categorize, or label learning strategies, there is broad agreement on several core characteristics. Most notably, most definitions stress that language learning strategies are employed consciously (Cohen, 2014, p. 11). The latter can be

explained by the second common characteristic, namely that their use is typically driven by clear goals, as learners often employ them when they try to overcome specific difficulties, such as retaining new vocabulary or understanding difficult texts (Griffiths, 2008, p. 86). In addition, language learning strategies often involve self-regulation, as learners may track their own progress, assess which methods work best for them, and adjust their approach accordingly (Wenden, 1987, p. 23). To summarize the common features, Oxford (1990, p. 9) provided the following overview, stating that language learning strategies

1. contribute to the main goal, communicative competence.
2. allow learners to become more self-directed.
3. expand the role of teachers.
4. are problem-oriented.
5. are specific actions taken by the learner.
6. involve many aspects of the learner, not just the cognitive.
7. support learning both directly and indirectly.
8. are not always observable.
9. are often conscious.
10. can be taught.
11. are flexible.
12. are influenced by a variety of factors

To link general language learning strategies with vocabulary learning strategies (VLS), it is essential to note that existing VLS taxonomies are primarily based on these earlier models. In the following subsection, focus will be placed on vocabulary learning strategies and existing taxonomies, and an overview will be provided of how researchers have adapted and refined general language learning strategies.

3.2. Vocabulary learning strategies

Vocabulary learning strategies are a subset of general or language learning strategies (Nation, 2013, p. 326) that focus specifically on the processes learners use to acquire, store, and retrieve lexical items in a second or foreign language (Gu, 2003, p. 3). Thus, VLSs are “specific tactics or methods that learners consciously employ to improve their understanding of individual words and to facilitate the development of their lexical repertoire” (Takač, 2008, p. 12). These strategies differ from general LLS in that they focus on the specific challenges posed by learning EFL vocabulary, such as recognizing a word and understanding it in terms of its form, meaning, and usage (Nation, 2013, p. 218). Nonetheless, Gu (2003, p. 2) compares general and vocabulary learning strategies, noting that learners can face challenges in both contexts and that, when this happens, strategies are used as problem-solving tools to overcome them.

Therefore, "language learning in general and vocabulary acquisition in particular are such problem-solving tasks at different levels of complexity" (Gu, 2003, p. 2).

As previously established, vocabulary is the foundation of all languages, and a large vocabulary is associated with higher proficiency throughout all language skills (Qian et al., 2020, p. 66). However, vocabulary differs from other language aspects, such as grammar or pronunciation, as it lacks clearly defined rules that help learners acquire thousands of words. Therefore, learners face the task of acquiring a large number of words that differ in form, meaning, and usage. As shown in a previous section (see section 2.3.2), Nation (2013, p. 218) presented several dimensions of knowing a word, including its spoken and written forms, meaning in different contexts, collocational behavior, and grammatical and stylistic restrictions. Vocabulary learning, therefore, requires strategies that support memorization and promote contextual use, understanding, and long-term retention. Perhaps because of this complexity, learners tend to employ more strategies when learning vocabulary. For instance, Chamot et al. (1987) found that high school learners of English as a second language (ESL) reported using more strategies for vocabulary learning than for any other language activity, including listening comprehension, oral presentation, and social communication. To better understand the different types and functions of vocabulary learning strategies, the next section discusses various established taxonomies, given their key role in helping learners memorise, retain, and use vocabulary effectively.

3.3. Taxonomies of vocabulary learning strategies

Over the years, various taxonomies have been proposed to classify vocabulary learning strategies (VLS). In this subsection, the focus will be placed on three influential models, those developed by Nation (2013), Schmitt (1997), and Ghamarian (2017), which were chosen not only for their prominence in the literature but also for their conceptual coherence and relevance to the present research.

3.3.1. Nation's (2013) VLS taxonomy

Nation's (2013) VLS taxonomy is closely linked to his model of word knowledge, as it includes vocabulary learning for each dimension of vocabulary knowledge (see Table 3).

Table 3. *Nation's VSL taxonomy*

General class of strategies	Types of strategies
Planning: choosing what to focus on and when to focus on it	Choosing words Choosing the aspects of word knowledge Choosing strategies Planning repetition and spending time
Sources: finding information about words	Analysing words Using context Consulting a reference source in L1 or L2 Using parallels in L1 and L2
Processes: establishing knowledge	Noticing Retrieving Generating (creative use)
Skill in use: enriching knowledge	Gaining in coping with input through listening and speaking Gaining in coping with output through reading and writing Developing fluency across the four skills

Table 3 shows that vocabulary acquisition begins with a planning phase, in which learners consciously decide which words to focus on, which aspects of word knowledge are particularly relevant, and which learning strategies can support long-term retention (Nation, 2013, p. 329). Research also shows that successful language learners often use selective attention, focusing on specific features of the linguistic input (Gu & Johnson, 1996, p. 659). In addition to selecting which words to focus on, learners must also decide which aspects of word knowledge are most important to them, depending on whether they aim for receptive or productive use of the word (Nation, 2013, p. 329). For instance, if learners' aim is to improve their pronunciation, they should focus on the spoken word form. Planning also involves selecting an approach to vocabulary learning that yields successful outcomes. As Gu and Johnson (1996, p. 659) point out, being deliberate about which words to focus on can make a real difference since the ability to direct one's attention purposefully is closely tied to successful vocabulary development. Moreover, learners need to be aware of the strategies and choose them accordingly, as they depend on several relevant factors such as "proficiency level, task, text, language modality, background knowledge, context of learning, target language, and learner characteristics" (Chamot & Rubin, 1994, p. 772). Regardless of the chosen strategies, planning time for repetition and review fulfils a key role in consolidating vocabulary knowledge, as the more times learners encounter a word and use it productively, the more likely they are to memorise

it (Webb, 2007, p. 62). Therefore, spaced retrieval helps learners retain vocabulary more easily, as this method requires them to revisit a word regularly. (Nation, 2013, p. 329).

Once learners have chosen the words they want to learn, they must *identify sources* that provide the information needed to understand and use these words accurately. According to Nation (2013, p. 330), one of the most valuable sources of vocabulary acquisition is contextual exposure, which refers to reading materials, spoken interactions, and audiovisual media. Context plays an important role in helping learners infer word meanings based on surrounding lexical and grammatical cues, as well as background knowledge and situational factors (Gu & Johnson, 1996, p. 646). In addition to deriving meaning from context, learners can benefit from morphological analysis, such as breaking words into prefixes, roots, and suffixes to determine their meanings and recognize connections between related words (Nation, 2013, p. 330). Moreover, when learners have difficulty understanding a word, they can use reliable reference materials to determine its meaning, such as dictionaries, glossaries, or corpora (Schmitt, 1997, pp. 209–210). Another important factor in vocabulary learning is the influence of the learner's first language. The similarities between languages can often help learners make sense of new words in a second language, especially in the early stages of language learning. However, the usefulness of first languages depends on “how much its various aspects are similar to patterns and items that the learner already knows” (Nation, 2013, p. 330).

Nonetheless, contextual exposure does not ensure vocabulary acquisition. Learning words is a *cognitive process* that involves three key mechanisms: *noticing*, *retrieval*, and *generation* (Nation, 2013, p. 331). Noticing is the first step in this process, which takes place when learners recognize the form and understand the meaning of new words. Although noticing a word is an important first step, it does not guarantee vocabulary retention or recall from memory. This process is very useful as recalling words reinforces the mental pathways associated with those words (Nation, 2013, p. 331). Lastly, *generation* refers to using words actively when speaking or writing, and their repetitive use can help ensure retention (Nation, 2013, p. 331).

Nation's (2013) last VLS category is called *skill in use*, and it focuses on developing vocabulary fluency in listening, speaking, reading, and writing. Fluency refers to the ability to understand and use words spontaneously. As easy as it sounds, this competence requires extensive exposure and practice through activities that promote fluency development, such as listening, speaking, reading, and writing in the target language (Nation 2013, p. 332).

3.3.2. Schmitt's (1997) VLS taxonomy

It is important to point out that Nation's (2013) taxonomy is based on theory, and although it acknowledges important word aspects and processes of effective vocabulary learning, it lacks tangible implementation strategies. This gap in application was observed by Schmitt (1997), who noted that "the current state of the area is typified by the lack of a comprehensive list or taxonomy of lexically focused strategies" (p. 199). To address this gap, Schmitt (1997, pp. 207-208) developed a detailed taxonomy based on Oxford's (1990) strategy categories. Unlike Oxford, however, he identified and categorized 58 specific vocabulary learning strategies. These were organized under five broader groups of Determination (DET), Social (SOC), Memory (MEM), Cognitive (COG), and Metacognitive strategies (MET), which were classified into two main categories. On the one hand, *discovery* strategies support learners in discovering the meaning of words when they encounter them for the first time. On the other hand, *consolidation* strategies help learners remember and retain words after the initial encounter (Schmitt 1997, p. 206). Nevertheless, Schmitt (1997, p. 206) acknowledges that organizing these vocabulary learning strategies into clearly defined categories was challenging because many strategies overlap. Strategies that facilitate discovery can also be applied to consolidation, making clear categorization difficult.

Table 4. *Schmitt's VSL taxonomy*

Strategy group	Vocabulary learning strategies
Strategies for the discovery of a new word's meaning	
DET	Analyse part of speech
DET	Analyse affixes and roots
DET	Check for L1 cognate
DET	Analyse any available pictures or gestures
DET	Guess meaning from textual context
DET	Bilingual dictionary
DET	Monolingual dictionary
DET	Word lists
DET	Flash cards
SOC	Ask teacher for an L1 translation
SOC	Ask teacher for paraphrase or synonym of new word
SOC	Ask teacher for a sentence including the new word
SOC	Ask classmates for meaning
SOC	Discover new meaning through group work activity
SOC	Ask teacher for an L1 translation

Strategies for consolidating a word once it has been encountered	
SOC	Study and practice meaning in a group
SOC	Teacher checks students' flash cards or word lists for accuracy
SOC	Interact with native speakers
MEM	Study word with a pictorial representation of its meaning
MEM	Image word's meaning
MEM	Connect word to a personal experience
MEM	Associate the word with its coordinates
MEM	Connect the word to its synonyms and antonyms
MEM	Use semantic maps
MEM	Use 'scales' for gradable adjectives
MEM	Peg Method
MEM	Loci Method
MEM	Group words together to study them
MEM	Group words together spatially on a page
MEM	Use new words in sentences
MEM	Group words together with a storyline
MEM	Study the spelling of a word
MEM	Study the sound of a word
MEM	Say new word aloud when studying
MEM	Image word form
MEM	Underline initial letter of the word
MEM	Configuration
MEM	Use Keyword Method
MEM	Affixes and roots (remembering)
MEM	Part of speech (remembering)
MEM	Paraphrase the word's meaning
MEM	Use cognates in study
MEM	Learn the words of an idiom together
MEM	Use physical action when learning a word
MEM	Use semantic feature grids
COG	Verbal repetition
COG	Written repetition
COG	Word lists
COG	Flash cards
COG	Take notes in class
COG	Use the vocabulary section in your textbook
COG	Listen to tape of word lists
COG	Put English labels on physical objects
COG	Keep a vocabulary notebook
MET	Use English-language media (songs, movies, newscasts, etc.)
MET	Use spaced word practice (expanding rehearsal)
MET	Testing oneself with word tests
MET	Skip or pass new word
MET	Continue to study word over time

As illustrated in Table 4, in contrast to Nation's (2013) taxonomy, Schmitt (1997) incorporates concrete, implementable strategies within each strategy category, which aid learners in discovering, acquiring, and consolidating new vocabulary. The discovery phase includes *Determination* (DET) and *Social* (SOC) strategy categories. Determination strategies help learners to make sense of unfamiliar words by analysing affixes and roots, examining parts of speech, inferring meanings from context, and utilizing reference tools such as dictionaries, word lists, and flashcards (Schmitt, 1997, pp. 209-210). Social strategies, by contrast, involve collaboration with others, such as asking peers or teachers for translations or meaning (Schmitt, 1997, pp. 210-211).

Once learners determine the meaning of a new word, they can use consolidation strategies to retain and memorize it. Here, Schmitt (1997) subdivides these strategies into *Social* (SOC), *Memory* (MEM), *Cognitive* (COG), and *Metacognitive* (MET) techniques. Social consolidation involves social interactions, such as group practice sessions or teacher checks, to improve and support understanding. Memory strategies help learners memorise new vocabulary by connecting it to personal experiences, using physical actions, and learning collocations and cognates, among many others. Thirdly, cognitive strategies focus on repetition, whether verbal or written, which can help learners automate vocabulary recall and reduce the mental effort in real-time communication. Lastly, metacognitive strategies "are used by students to control and evaluate their own learning, by having an overview of the learning process in general" (Schmitt, 1997, p. 216), and they include activities like using English-language media, talking to native speakers, scheduling regular review sessions or reflecting on one's progress to adjust future study (Schmitt, 1997, p. 217).

3.3.3. Ghamarian's (2017) VLS taxonomy

Although previous taxonomies have employed different labels, classifications, and strategies, the field still lacks consensus on how best to categorise and conceptualise the strategies learners employ. Ghamarian (2017, p. 34) fills this gap by creating a VLS taxonomy that draws on aspects from established frameworks, particularly those proposed by Oxford (1990), Schmitt (1997), and Nation (2013), and merges these prominent taxonomies to create a more coherent, comprehensive, and practically applicable system for analysing and supporting vocabulary learning. One of the key strengths of Ghamarian's (2017) taxonomy lies in its layered structure. As shown in Table 5, the taxonomy is structured around five main categories: planning, recording, discovery, consolidation, and self-management strategies.

Table 5. *Ghamarian's (2017) VLS taxonomy*

Planning strategies: 1. Choosing a word 2. Choosing aspects of word knowledge 3. Choosing strategies 4. Planning repetition
Recording strategies: 5. Verbal repetition 6. Written repetition 7. Word lists 8. Flash cards 9. Stick sheets on objects 10. Keep a notebook/issue log
Discovery <u>Determination strategies (DET):</u> 11. Analyse the part of speech in which the word occurs grammatically 12. Analyse affixes and roots of a word 13. Check for L1 cognate or another language 14. Analyse available pictures 15. Guessing 16. Consult a reference source - Use a monolingual dictionary - Use a bilingual dictionary - Use an online dictionary - Use an existing word list - Use existing flash cards - Use a corpus 17. Pass or skip the word 18. Check for defining words or phrases in the text. <u>Social strategies (SOC):</u> 19. Ask the lecturer or an external teacher 20. Ask classmates or friend
Consolidation: Direct learning: • <u>Social strategies (SOC):</u> 21. Study in a group 22. Study with a native speaker 23. Act out role plays 24. Prepare talks with the vocabulary • <u>Memory strategies (MEM):</u> 25. Study words with pictorial representation 26. Label pictures - Add a picture to the vocabulary item to visualise it 27. Imagine a word meaning 28. Connect word to a personal experience 29. Use semantic maps 30. Associate words with coordinates 31. Connect word to synonyms and antonyms 32. Use scales for gradable adjectives 33. PEG Method 34. Keyword Method 35. Group words spatially 36. Use new word in a sentence

37. Group words within a storyline 38. Study spelling 39. Study sound of words Say the words aloud Learn the phonetic transcription 40. Imagine the word form 41. Underline initial letter 42. Configuration 43. Remember the context in which the word was encountered 44. Remember word parts 45. Use cognates for studying 46. Learn idioms and collocations for a word 47. Use physical action to remember 48. Use semantic feature grids 49. Use pre-existing practice material Sentence completion activities 50. Use paraphrasing 51. Use look and recall strategy Indirect learning: 52. Interact with a native speaker 53. Interact with a friend in English 54. Doing translations 55. Extensive reading 56. Glossing 57. Listen to music 58. Watch movies 59. Write private correspondences
Self-management strategies: 60. Commitment control strategy 61. Metacognitive control strategy 62. Satiation control strategy 63. Affection control strategy 64. Environment control strategy

Planning strategies. These strategies form the basis of Ghamarian's (2017) model. Building on Nation's (2013, p. 329) taxonomy, planning strategies support learners in making conscious decisions when learning vocabulary. This includes, for example, deciding which words to learn, which vocabulary aspects to focus on, and how and when to revise them. Ghamarian's (2017) approach differs from Oxford's (1990) model, which classified planning as part of metacognition, among the indirect strategies. Following Nation (2013), Ghamarian (2017) emphasizes that planning is not seen as preparation but as one of the basic conditions for successful vocabulary acquisition, a conscious choice that involves recognizing what is relevant. The importance of planning strategies is also supported by previous research. Gu and Johnson (1996), for example, found that learners who selected which vocabulary they wanted to learn in the planning phase achieved greater vocabulary growth. This is supported by the commitment load hypothesis, which states that the more cognitively and motivationally

involved a learner is in their learning goals, the more lasting their word retention will be (Laufer & Hulstijn, 2001). Accordingly, in Ghamarian's (2017) framework, planning strategies are not merely preparatory steps but important learning processes that significantly influence the effectiveness of vocabulary acquisition.

Recording strategies. This second category encompasses the physical or digital documentation of new vocabulary items through *word lists*, *flashcards*, or *vocabulary notebooks* (Ghamarian, 2017, p. 38). Ghamarian's (2017) taxonomy presents recording strategies in a separate category, whereas Schmitt's (1997) taxonomy places them within the broader category of cognitive strategies. Ghamarian (2017, p. 38) argues that this placement is imprecise, as Oxford's (1990, p. 17) definition of cognitive strategies includes more complex mental processes, such as analysing, reasoning, and practicing. For this reason, Ghamarian (2017) separates note-taking strategies from processes that involve greater cognitive load as they serve to organize and store vocabulary.

Discovery strategies. When learners encounter words for the first time and attempt to determine their meaning, they employ discovery strategies such as analysing affixes, using dictionaries, identifying cognates, interpreting pictures, and inferring meanings from context (Schmitt, 1997, pp. 209-210). Ghamarian (2017) borrows the term *discovery* from Nation (2013) and Schmitt (1997) and subdivides it into determination strategies, in which learners act independently, and social strategies, which involve interaction with others. Ghamarian (2017, p. 43) builds on Schmitt's (1997) observations to define the subcategories, stating that many vocabulary discovery strategies can serve either as determination or social strategies, depending on the context in which they are applied. For instance, using a dictionary independently falls under the category of determination strategies, whereas seeking the meaning of a word by asking a teacher or peer shifts the same objective into the category of social strategies (Schmitt, 1997, p. 206).

Consolidation strategies. This category includes strategies that facilitate learners' retention of new vocabulary. Drawing on Nation (2013), Ghamarian (2017) makes a distinction between direct consolidation, which includes strategies that learners use when they want to retain words, and indirect consolidation, which refers to incidental learning when reading, listening, or speaking in the target language. Ghamarian (2017) also subdivided direct strategies into social strategies, which include group study and role-play activities, and memory strategies, such

as *rote learning*, *visualization*, *keyword method*, *semantic mapping*, and *physical movement* (Ghamarian, 2017, pp. 46-48).

Self-management strategies. The final category addresses the regulation of learning behaviour and motivation. To build this category, Ghamarian (2017, p. 50) draws on Gu's (2003) and Nation's (2007) control strategies and merges them with effective strategies from Oxford (1990) and Hong-Nam and Leavell (2006). She identifies five key dimensions of self-regulation: *commitment control*, which helps learners stay motivated; *metacognitive control*, which helps maintain focus and attention; *satiation control*, which helps to keep tasks stimulating and prevents boredom; *environment control*, which creates optimal setting; and *emotion control*, which helps to maintain a positive emotional state throughout the learning process (Ghamarian, 2017, pp. 50-51). Although research in this area remains relatively scarce, Ghamarian (2017) argues that self-management is a key aspect of successful and autonomous learning.

Given the relevance and strengths of Ghamarian's (2017) VLS taxonomy, the study at hand will adopt her taxonomy and adapt the specific vocabulary learning strategies to the objectives of this investigation (see section 5.3).

3.4. Research on vocabulary learning strategies

There is extensive research on the use of vocabulary learning strategies, also in connection with vocabulary development and different online contexts. However, as this study is specifically concerned with the use of VLS, in particular, how they are used in formal and non-formal contexts and how they support vocabulary acquisition, this subsection will present empirical studies that have focused on the vocabulary learning strategy use of EFL university students and have adopted one of the vocabulary learning strategy taxonomies presented above.

Ghamarian (2017) used her taxonomy presented in the previous subsection in her study that, among other factors, investigated vocabulary learning strategy use of English Department students at the University of Vienna. To gather the data, she used a mixed-methods design in which participants completed an online questionnaire on vocabulary learning strategy use, and she examined student essays to determine their use of academic vocabulary. Participants reported using discovery strategies most frequently, which include inferring words' meaning and looking them up in dictionaries. These were followed by planning strategies that help

students plan their vocabulary learning. Results have also shown that strategy items in the consolidation and recording strategy groups were used less frequently. Lastly, students reported using self-management strategies the least often (Ghamarian, 2017, pp. 77-81).

Similarly, Fu (2021) conducted a qualitative study to determine which vocabulary learning strategies are most frequently employed by Chinese EFL university students. The researcher adapted Schmitt's (1997) vocabulary learning strategy taxonomy and categorised the vocabulary learning strategies into determination, cognitive, memory, metacognitive, and social/affective categories. The participants were eight English majors, and the semi-structured interviews were conducted in their L1, Chinese, which were then transcribed and translated into English. The results were analysed to identify patterns in respondents' strategy use, and they showed that students most frequently employed determination and cognitive strategies to learn English vocabulary. Among these groups, the most commonly reported strategies were using lingual dictionaries, guessing the meaning from context, learning L1 translations, oral and written repetition of the items, and practising spelling and pronunciation. In contrast, the results showed that participants employed memory and metacognitive strategies less frequently. Lastly, social-affective strategies such as studying with peers using flashcards or acting out words physically were used least frequently (Fu, 2021, pp. 120-122).

Sidhu and Mohamad Nor (2020) investigated the relationship between vocabulary size and vocabulary learning strategy use. The study participants were 120 first-year ESL students at a Malaysian university who completed a vocabulary size test, and 12 students participated in oral interviews. Sidhu & Mohamad Nor (2020) adopted Schmitt's (1997) taxonomy of vocabulary learning strategies, which categorises VLS into five groups, namely determination, social, memory, cognitive, and metacognitive strategies. Like in Fu (2021), the results showed that the vocabulary learning strategy used by the participants was at a medium level, with determination strategies employed most frequently, such as using English and bilingual dictionaries and guessing the meaning of words from context. Metacognitive strategies were the second most frequently used strategy group, followed by memory, social, and cognitive strategies, which were used the least frequently overall. Within the former strategy categories, students have reported frequently using strategies such as learning the spelling, repeating words orally, highlighting vocabulary, taking notes, and asking others to discover the meaning of words. In contrast, strategies such as drawing pictures, using physical movement, interacting with native

speakers, and mnemonic techniques were not favoured by students (Sidhu & Mohamad Nor, 2020, pp. 183-184).

Brdar (2025) investigated 52 Hungarian tertiary-level students' vocabulary learning strategy use, whose L2 is English and L3 is Spanish. The study employed a quantitative questionnaire, with the strategy items based on Schmitt's (1997) VLS taxonomy. The adapted version of the vocabulary learning strategy taxonomy consisted of 72 strategy items and was organized into two main sections. The first category was discovery strategies that included determination and social strategies, and the second main category was consolidation strategies that were subdivided into social, memory, cognitive, and metacognitive strategies. Similar to Fu's (2021) findings, the results showed that in the discovery strategy group, participants reported using determination strategies significantly more frequently than social discovery strategies. To consolidate vocabulary, participants relied most on metacognitive and cognitive strategies, and less on memory strategies. Social consolidation strategies were employed least frequently. These results are also in alignment with Sidhu and Mohamad Nor's (2020) research. However, across all strategy categories, the overall ranking from most to least frequent strategy category is as follows: determination strategies, metacognitive strategies, cognitive strategies, memory strategies, and social strategies. Moreover, the two language groups were compared, and the use of social discovery and cognitive strategies was significantly higher among Spanish majors than among English majors. However, in the use of determination, memory, social consolidation, and metacognitive strategies, no significant differences were found between the groups.

Overall, empirical research on VLS use among EFL university students shows that they most frequently tend to employ strategies from the determination and cognitive strategy categories, such as guessing words' meaning from context and using dictionaries. Metacognitive strategies seem to play a somewhat prominent role in participants' VLS habits, yet there is a notable difference within this category. Consolidation strategies occupy a more central position within the metacognitive category, while self-management and social-affective strategies are generally the less preferred. Lastly, social and memory strategies are used less frequently.

4. Extramural English and learning beyond the classroom

Alongside vocabulary learning strategies, the other key topic of this study is *Extramural English*. This final section begins by demonstrating the relevance of out-of-school learning

practices and explores the concept and dimensions of Learning Beyond the Classroom (LBC). Next, extramural English (EE) will be defined, and the reasons for which students engage in EE will be explored. Subsequently, the different types of EE activities and their role in vocabulary development will be introduced. Lastly, the use of vocabulary learning strategies during extramural engagement will be explored.

4.1. Language learning beyond the classroom

Although there was limited exposure to English outside the classroom prior to the global rise of media and digital platforms, out-of-school language learning practices are not new or unprecedented. Accordingly, Nunan and Richards (2015) point out that “while opportunities for learning beyond the classroom have always been available to learners, technology and the Internet have dramatically expanded both the scope and nature of these opportunities” (p. xii). In other words, the Internet and technological developments have fundamentally changed how languages are learned by providing learners with new opportunities to develop their language competences outside institutional settings. As a result, traditional classrooms have become just one of many settings in which students can learn English, suggesting that schools are no longer the sole source of language learning but are now significantly complemented by digital media (de Bot, Evers, & Huibregtse, 2007, p. 68).

The changes in opportunities brought by technological developments have been particularly prominent in the case of English, as it functions as a global language and has thus become the foundation of everyday interactions in various sectors (Jenkins, 2009, p. 41). In fact, due to its status as a lingua franca, English is closely linked to the opportunities offered by technology, and it is estimated that approximately 50% of all online content is in English (Statista, 2025). Jenkins (2009) notes that English, which she refers to as “the language of the home computer” (p. 41), is apparent in entertainment and popular culture.

With English firmly established as the dominant global language, traditional classroom-based approaches to language education have been called into question and started facing criticism for isolating language learning from real-life language use. Researchers argue that authentic language use and contact with the language play a crucial role in successful language learning, which is why learning English in the classroom should be more connected to the outside world. Benson and Reinders (2011) share the same view and argue that “communicative proficiency, it seems, depends to a large extent on learners' efforts to use and learn the language beyond the

walls of the classroom” (p. 2). Such engagement with English outside school not only allows learners to develop their linguistic competence through authentic communication with other speakers, but also increases motivation, as learners begin to see the relevance of English in everyday life (Grau, 2009, p. 172). Moreover, in addition to technological advances and the global role of English today, Benson and Reinders (2011) proposed another reason for the high relevance of out-of-school learning opportunities, namely, that in SLA, learning is not viewed “in purely cognitive terms, but in terms of participation in communities and contexts of various kinds” (p. 5). In other terms, this perception favours a more holistic understanding of language acquisition and views participation in real-life social interactions as an important practice of language learning (Lave & Wenger, 1991, p. 55). Such practices can be implemented easily as English is used by Europeans not only in educational or professional settings but also in everyday social interactions across many areas of life, such as sports, schooling, travel, and online communication (Berns, de Bot, and Hasebrink, 2007, p. 2).

In light of these developments and recognizing the growing significance of English practices beyond the classroom, research on out-of-school language learning has gained popularity. Nonetheless, researchers have labelled the phenomenon of *learning outside of school* differently (Benson & Reinders, 2011, p. 1). Among the most common expressions are *out-of-class* and *out-of-school learning*, both of which denote educational activities that occur beyond the traditional classroom or school setting (Benson, 2011, p. 9). A second cluster of terms, frequently used to refer to *learning outside the walls of educational institutions*, distinguishes between learning according to its degree of formality. *Formal learning* is “institutionalized, chronologically graded and hierarchically structured” (Coombs & Ahmed, 1974, p. 8). In contrast, *non-formal learning* refers to “any organized, systematic, educational activity carried on outside the framework of the formal system to provide selected types of learning to particular subgroups in the population, adults as well as children” (Coombs & Ahmed, 1974, p. 8). *Informal learning* is often treated as a subcategory of *non-formal learning* (Schugurensky, 2000, p. 2), and it is “unorganized and often unsystematic; yet it accounts for the great bulk of any person's total lifetime learning” (Coombs & Ahmed, 1974, p. 3). Beyond formality, researchers also stress learner autonomy through the use of terms such as *self-regulated* and *self-directed learning*. These notions both point to independent learning,

in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating goals, identifying human and material resources, choosing and implementing appropriate learning strategies, and evaluating learning outcomes (Knowles, 1975, p.18).

Intentionality provides yet another distinction (see subsection 2.4). *Incidental learning* is frequently used in the context of *out-of-class* learning, and it refers to the unplanned, unintentional acquisition of knowledge (Tomlinson, 1998, p. 4). Finally, the widely used term *extracurricular* is typically defined by the activities it encompasses, for instance, "athletics, vocational clubs, student government, newspapers and yearbooks, and special interest groups" (Barnett, 2007, p. 316).

Although most of these terms are suitable for describing the concept of *learning outside the classroom*, their definitions differ significantly, which suggests that they are separate concepts, even if there is considerable overlap between them. Thus, to avoid using these terms interchangeably, Benson (2011) proposed the term "*language learning beyond the classroom*," which he considers a "more inclusive term" (p. 9). Moreover, to situate the different concepts within the sphere of out-of-school settings, Benson (2011, p. 9) proposed *Learning Beyond the Classroom* (LBC), which is a framework that categorises these concepts into four interrelated dimensions of language learning.

Location. The first dimension describes where learning occurs and includes terms such as *out-of-class*, *out-of-school*, *after-school*, and *extracurricular*, each of which implies supplementary activities that complement formal instruction (Benson, 2011, p. 9).

Formality. The second dimension categorizes learning by its degree of structure, and it includes *formal* educational settings, *non-formal*, and *informal* contexts where learning may be driven by learners' interest and independent of formal testing (Benson, 2011, p. 10).

Pedagogy. The third dimension focuses on the type and function of the language teaching that takes place. It spans from *self-instructed* and *naturalistic* learning at one end to more explicitly *instructed* models at the other, thereby highlighting varying degrees of teacher guidance (Benson, 2011, p. 11).

Locus of control. The last dimension addresses who makes the key decisions about the learning process. *Locus of control* encompasses *independent*, *self-directed*, and *autonomous* learning, however, the extent of freedom and choice can vary (Benson, 2011, p. 12).

Table 6. *Dimensions of LBC*

Dimension	Description	Terms
Location	The place where learning occurs	classroom, extracurricular, out-of-school
Formality	Degree of structure to which learning is linked to educational institutions	formal, non-formal, informal
Pedagogy	the type and role of instruction	instructed, self-instructed, non-instructed
Locus of control	The person who makes the decisions about the learning process	teacher-directed, self-directed, non-directed

Before addressing the definition and scope of the second main subject of this study, namely Extramural English (EE), it is essential to clarify why the preceding discussion of Language Learning Beyond the Classroom (LBC) was necessary. As presented in Table 6, although LBC encompasses different forms and dimensions, they are all connected, as each dimension conceptualizes language learning as a phenomenon that occurs outside the traditional confines of educational institutions. Therefore, addressing the concept of LBC is particularly relevant to the study at hand, as it enables EE to be placed within a broader framework of out-of-school language learning. Accordingly, after presenting the concept of EE in the following section, the model of LBC will be revisited to integrate EE within its theoretical framework.

4.2. Definition and scope of extramural English

The term *extramural English* (EE) was coined by Pia Sundqvist (2009) in her doctoral dissertation because, although she felt that the phenomenon of *out-of-school* had been described in a number of terms, the existing terminology failed to capture accurately the specific ways in which English is used and learned outside of traditional educational settings (Sundqvist & Sylvén, 2016, p. 5). Hence, the term extramural English was created, derived from the Latin words *extra* (meaning "outside") and *mural* (meaning "walls"), thus referring to *English outside the walls* (Sundqvist, 2009, p. 25).

To provide a more precise definition of the scope of EE, Sundqvist (2009, p. 25) stressed that, as opposed to Benson's (2011) *out-of-class learning*, contact with EE is not only manifested in the fact that it takes place physically outside educational institutions, but also through the absence of teachers' and institutions' initiation. Instead, it is mainly the learners themselves

who initiate this involvement, yet an external influence from another person is not excluded from the concept. The latter highlights that students might engage in extramural English activities outside of school as a result of family members' or friends' initial recommendation and continue these activities because they find pleasure in them (Sundqvist, 2009, p. 25).

A natural result of engaging with the English language is, of course, an improvement in language skills. However, learners do not have to set a specific language goal before engaging in extramural English activities, especially since these activities are sometimes unplanned, for instance, a spontaneous interaction with a stranger on the street. At the same time, learners can engage in EE activities with the aim of improving their English skills, therefore, the conscious intent to learn the language falls within the scope of the concept (Sundqvist, 2009, p. 25).

Another very characteristic of EE is students' engagement due to their personal interests and inner drive. Even under external pressure, they may still find genuine enjoyment in the EE activity (Sundqvist, 2009, p. 26). The latter is a key distinction of EE from other concepts that describe the phenomenon of learning outside the English classroom, as engagement with extramural English typically occurs voluntarily, and such activities may spark learners' interest in English, even if they initially lacked motivation to learn the language (Sundqvist 2009, p. 26). More precisely, due to EE's learner-driven nature, Sundqvist (2009) suggests that the concept of extramural language use is fundamentally a reflection of students' increased control over their own language learning processes. She thereby relates EE to *learner autonomy*, which Holec (1981) initially described as "the ability to take charge of one's own learning" (p. 3). According to Lamb (2002), *learner autonomy* is "a necessary precondition to individual success" (p. 49), especially in environments where English is a dominant foreign language, such as in Austria.

Drawing on the definitions of extramural English addressed above, a valid concern is whether homework falls within the category of EE. In her work, Sundqvist (2009) does not explicitly address homework, however, her definition suggests that, in addition to the location where it takes place (i.e., outside of school), an important factor in extramural English is that learners engage with the language voluntarily and not because of an institutional obligation. To conclude, although homework is completed at home, it is still a task that is assigned by teachers and therefore cannot be classified as an extramural English activity. Schwarz (2020, p. 15) supports this view and additionally excludes other school-related activities from the scope of

extramural English, such as exam preparation, extensive reading programs, or private tutoring. Examples of extramural English activities are discussed in subsection 4.2.2.

In line with Benson's (2011, pp. 8-9) framework of language learning beyond the classroom, Sundqvist (2009, p. 24) refers to related concepts such as *out-of-class*, *out-of-school*, *unintentional*, and *self-directed naturalistic* learning. Although these terms overlap on some dimensions, she argues that none of them adheres to the concept of extramural English fully, but only to some of its characteristics. Therefore, Sundqvist (2009, p. 26) proposes that extramural English can be considered as an "umbrella term" that encompasses some parts of those existing concepts that can be positioned within EE's scope. Consequently, this point in the discussion necessitates a return to Benson's (2011) taxonomy of *learning beyond the classroom* (see section 4.1).

Based on the definitions of extramural English presented above, EE can be primarily classified under Benson's (2011, p. 9) *dimension of location*, as it refers specifically to English language interactions and activities outside of school in various settings. These settings may include learners' home environments, entertainment settings such as the cinema, or online platforms. Regarding the dimension of formality (Benson, 2011, p. 10), students engage in extramural English activities on their own initiative outside of school, suggesting that these activities do not involve formal instruction. Therefore, extramural English is most representative of informal and non-formal forms of learning. Given that extramural English is not teacher-initiated and is highly student-centred (Sundqvist, 2009, p. 25), language learning is self-organized and autonomous. It can therefore be categorized within Benson's (2011, p. 11) *pedagogical dimension* as a naturalized or self-directed form of learning. In the last dimension, *locus of control*, which focuses on who makes decisions about the learning process, extramural English can be described as self-directed and non-directed. To this end, Benson's (2011) framework of *learning beyond the classroom* is applied to position Extramural English (EE) within it, illustrating how EE can be situated within each dimension.

Table 7. *Placing EE into the dimensions of LBC*

Dimension	Description	Terms
Location	The place where learning occurs	Classroom, extracurricular, out-of-school

Formality	Degree of structure to which learning is linked to educational institutions	formal, non-formal , informal
Pedagogy	The type and role of instruction	instructed, self-instructed , non-instructed
Locus of control	The person who makes the decisions about the learning process	teacher-directed, self-directed , non-directed

4.2.1. Reasons for EE engagement

The previous subchapter already indicated that extramural English engagement is mostly voluntary on the part of the learners. However, peers or family members may influence this participation. Sundqvist's (2009) conceptualization of extramural English and the EE activities detailed in the next subchapter (4.2.2) suggest that these EE activities are mostly leisure-oriented, as learners do not engage in them to improve their English skills but rather for enjoyment during their free time. Although the primary aim may not be language learning as such, improvement in English skills is not excluded as a secondary benefit. Moreover, these activities are mostly initiated by learners themselves or recommended by peers or family, such as shows, books, or other media. These are just suggestions, and the learner ultimately chooses to engage in these activities on their own accord. Therefore, participation in extramural English activities is driven more by enjoyment of the activity and self than by a specific goal to improve language skills.

Schwarz (2020) conducted a study where she also examined the motivations behind engaging in EE activities, which included the following reasons (translated from the original German questionnaire):

- Many things are available (at least temporarily) only in English.
- I need English for international contacts and friendships.
- I want to improve my English skills.
- I am interested in how things are in their original form (e.g., films, books).
- Many things sound better in English.
- I simply feel like using English.
- I have other reasons

Her study showed that the most common reason why students engage with English in their free time is that they think that "many things sound better in English" (Schwarz, 2020, p. 220). Secondly, participants reported an interest in consuming original versions of media, improving their English skills, and a general enjoyment of using the language, with these items receiving similarly high levels of agreement. At the same time, some respondents attributed their extramural English engagement to the fact that content is more likely to be available in English, but fewer participants strongly agreed with this statement. Overall, engagement with English outside school is driven by a combination of aesthetic appeal, personal interest, and language development. Although the study was conducted with high school students aged 15 to 16 (Schwarz, 2020, p. 139), the same scale will be used in this study to survey university students, as the categories identified remain relevant and offer a broad range of reasons for extramural English engagement.

4.2.2. Types and range of EE activities

Although the previous section briefly mentioned several EE activities, a more comprehensive outline provided by Sundqvist and Sylvén (2016, p. 7) is presented in what follows:

- watching films,
- watching TV series,
- watching music videos,
- watching video blogs (vlogs),
- listening to music,
- reading blogs,
- reading magazines,
- reading newspaper,
- surfing English websites on the Internet,
- following people, news, organizations, and so on, on Twitter or Instagram (or some other online community),
- reading/writing/speaking/listening/interacting in real life or online, and
- playing video/digital games (online or offline, on one's own or with others).

The forms of extramural English use proposed by Sundqvist and Sylvén (2016) have been adopted by numerous researchers and have been further supplemented in other studies. Schurz and Sundqvist (2022), for example, investigated how upper secondary teachers perceive their

students' extramural English engagement. Their questionnaire listed different activities, such as listening to audio formats (radio or podcasts) and watching video content (vlogs, YouTube, or TikTok videos), as well as other audiovisual media (series, films, or documentaries). They also took into account productive activities, such as writing in different contexts (e.g., social media posts, messages, emails, or creative texts such as poems and song lyrics), as well as forms of oral communication, both online and offline. Digital games on various platforms (e.g., online and offline gaming, PlayStation, or Xbox) are also highlighted as a significant source of authentic language contact and interactive language use. Below is the complete list of EE activities, as adopted and extended by Schurz and Sundqvist (2022, p. 7):

- listening to music
- listening to other audios (e.g. radio, podcasts)
- viewing videos (e.g. vlogs, YouTube, TikTok)
- viewing other audiovisuals (e.g. series, movies, documentaries)
- writing (e.g. social media, messages, emails, poetry, songs)
- speaking (online or offline)
- playing video or computer games (e.g. online, offline, PlayStation, Xbox)

Schwarz (2020) investigated the extramural English practices of 201 high school students in Vienna. Her mixed-methods study included a questionnaire, an online language diary, vocabulary tests, and focus group interviews to explore participants' EE engagement. To find out which EE activities students engage in, Schwarz provided the following list of activities (translated from the original German questionnaire), which includes extensive subcategories (Schwarz, 2020, pp. 3-4 Appendix):

- English-language music
- English-language lyrics
- English-language films
- English-language series
- English-language programmes
- English-language video clips (e.g. YouTube,...)
- English-language games
- English-language books
- English-language articles
- English-language information texts (e.g. instructions, recipes, etc.)

- English-language stories / fan fictions
- English-language comics / mangas
- English-language blogs / forum entries (e.g. on games)
- English-language e-mails
- English-language SMS / WhatsApp
- Chatting in English
- Speaking in English
- English-language theatre plays

The activities listed in the studies discussed above share certain common features. Firstly, extramural English activities include both online and offline forms of engagement with the language, in which learners encounter different linguistic input and output (Sundquist and Sylvén, 2016, p. 7). Accordingly, these activities include receptive tasks, such as watching movies, TV series, music videos, or vlogs, and reading newspapers, magazines, and blogs. Moreover, there are many opportunities for interactive, practical, and productive tasks, such as speaking, listening, and social engagement in real life and on virtual platforms. Consequently, for learners who have access to the Internet, the possibilities for extramural English practice are greater, as they can also play online games, stream English-language media on interactive social platforms, and consume digital content in English. In contrast, learners whose access is limited to offline content, such as reading printed materials, listening to the radio, and talking to peers, face more restrictions, but still have an abundance of possibilities (Sundqvist & Sylvén, 2016, p. 7).

4.3. Vocabulary learning through extramural English

Many researchers investigated the connection between extramural English activities and their impact on language proficiency, including vocabulary knowledge. This section reviews existing research on the influence of extramural English activities on vocabulary acquisition.

Reading is a common EE activity that can take many forms, including books, short stories, comics, and magazines. There has been considerable research on vocabulary development through reading, particularly *extensive reading* (ER), which, in contrast to *intensive reading* (IR), is often done outside of school settings and primarily for pleasure (Day & Bamford, 2002, p. 138).

Horst (2005), for instance, investigated whether learners can acquire new vocabulary through extensive reading. The participants were 21 adult ESL learners in Montreal, and they used graded readers for the study. Before reading, learners completed a pre-test and a post-test after the reading, both made up of words from the readers they had read. The findings revealed significant vocabulary development among the participants and showed that learners acquired more than half of the unfamiliar vocabulary from the readers.

A more recent study by Nguyen (2023) investigated the effectiveness of extensive reading on first-year EFL students' vocabulary development. Participants were split up into two groups, the first group received extensive reading materials, and the other group received intensive reading materials. Both groups read these materials for 8 weeks, during which they were encouraged to read for comprehension. Both groups were tested before the intervention to assess their receptive vocabulary and after the 8-week intervention to compare results. The findings showed that both groups experienced vocabulary development after the 8-week period, the vocabulary gains were significant for the group that did the extensive reading. Their vocabulary knowledge improved across several aspects, including definitions, word recognition, and picture recognition.

Santi et al. (2021) conducted a meta-analysis in which they have reviewed eleven studies to examine patterns between reading interest and vocabulary acquisition. The findings revealed a strong connection between students' interest and their vocabulary acquisition, which indicates that students who show the greatest interest in reading tend to acquire more vocabulary. They have also found that when learners read frequently and have a strong personal motivation to read authentic content, vocabulary development is more long-lasting.

Consequently, extensive reading has been recognized as an effective method for vocabulary acquisition, and recent research has increasingly explored the role of other forms of out-of-school language activities, particularly auditory input. In this regard, Nation and Meara (2020) argue that a vocabulary is mostly acquired “incidentally through listening and reading” (p. 39). One particularly effective audio input is music, as it can support vocabulary acquisition due to its engaging and repetitive nature (Murphey, 1992, p. 771).

For instance, Pavia et al. (2019) investigated the extent to which English songs can support incidental vocabulary learning and focused on spoken word recognition, form-meaning

connections, and collocation recognition. The participants were split into four groups: one listened to the chosen songs once, the second three times, the third five times, and the control group took the post-test without listening to the songs. The results showed that listening to English songs can result in incidental vocabulary learning, which was mostly observed in spoken-form and collocation recognition. The results also showed that repeated exposure greatly influences vocabulary acquisition, as the group who listened to the songs five times scored better on the post-test. Similarly, Schwarz (2012) investigated whether intermediate EFL learners in Austria could develop their vocabulary through listening to English pop songs outside the classroom. The findings revealed that after listening to the songs, learners were able to recall the vocabulary items from the song although they had not been explicitly thought these words, which suggests that listening to music is an effective tool for vocabulary acquisition.

In addition to music, there are other increasingly popular and similarly accessible audio formats that can provide students with language exposure. Hakobyan (2023) extended the focus to podcasts and investigated whether Armenian high school learners could expand their vocabulary size by listening to podcasts. The treatment group in this study listened to podcast episodes weekly for 7 weeks, while the second group received traditional classroom-based instruction. The findings showed that the first group, who listened to the podcast episodes acquired more vocabulary by the end of the study. Moreover, the investigation also revealed that participants retained the target words that appeared most frequently across the podcast episodes. The latter suggests that vocabulary acquisition is closely linked to how often target words were repeated and how they were distributed across the podcast episodes. Furthermore, learners reported that they were able to learn these target words because the context was meaningful and the audio content offered repeated language patterns.

Regarding audiovisual activities, Peters and Webb (2018) investigated the impact of English television programmes on Dutch EFL learners' vocabulary acquisition. Their findings showed that learners acquired new lexical items after the treatment, which involved watching English language television programmes. Results have also shown that various factors contributed to the vocabulary gains, primarily cognates, word frequency, prior knowledge, and repeated exposure. Among these factors, the ones that significantly enhanced learning were cognateness and repeated exposure. Similarly, a study by Puimège, Heynen, and Peters (2016) revealed that learners can learn new words incidentally while watching audiovisual input. More specifically, they found that learners who have a larger vocabulary size are more likely to learn new words

incidentally from watching English audiovisual content. These results were especially significant when the word occurred more frequently in the audiovisual content. Moreover, they found that English-language captions were more effective than L1 subtitles for learning word forms, particularly among more proficient learners with larger vocabulary sizes. In a more recent study, Hsieh (2020) found that Chinese learners of English improved their vocabulary knowledge and also enhanced their ability to recall and recognise vocabulary items after watching two short videos. Furthermore, students who watched the captioned version of the videos performed better on vocabulary tests. Therefore, these findings suggest that engaging in audiovisual extramural English activities can help learners expand their lexical knowledge, especially when they have the option to read English-language captions and receive repeated exposure to target vocabulary.

Lastly, there are other forms of extramural English engagement, such as digital gaming and social media, which have been increasingly recognised for their potential to enhance vocabulary acquisition. Aksoy et al. (2017) investigated whether Kinect-based gaming enhances the vocabulary acquisition of specific English military vocabulary among VFL students at a Turkish military university. They used a quasi-experimental design in which 26 students engaged in gaming with the game called *Ghost Recon: Future Soldier*, while 26 students received traditional classroom-based instruction. They assessed vocabulary growth through pre- and post-tests, in which the gaming group achieved significantly higher scores than the control group. The findings indicate that engaging in English language gaming is an effective activity in terms of vocabulary learning. Therefore, the results suggest that task-based gaming facilitates vocabulary retention more effectively than traditional methods.

In a more recent study, Wilson and Anam (2024) investigated the extent to which social media use improves students' English vocabulary. The researchers surveyed 176 Indonesian EFL university students who completed an online questionnaire based on the Technology Acceptance Model. The findings showed that students agreed they learned new words through social media and considered it easy to use to improve their English vocabulary. Moreover, the platforms they found most helpful for learning new words were YouTube, Instagram, and TikTok. Additionally, students reported feeling more motivated to learn new words when using social media.

4.4. Vocabulary learning strategies in extramural English

As shown in the previous subsection, numerous studies aimed to determine how different language activities impact vocabulary development. Nonetheless, there is a lack of research on the vocabulary learning strategies that might facilitate these improvements. Based on the available literature, the sole exception appears to be the study conducted by Calafato and Clausen (2024), who examined the use of vocabulary learning strategies among 116 Norwegian students during extramural English activities, notably gaming, and found that inferencing, language references, and note-taking were used while engaging in EE activities. Accordingly, research on the use of vocabulary learning strategies in extramural English activities is still in its embryonic stage, as evidenced by the limited research in this area. Therefore, by examining the vocabulary learning strategies employed by tertiary-level EFL students across formal and extramural settings, this study aims to fill a research gap and determine whether the use of these strategies in formal education is reflected in L2 students' English practices.

5. The present study

The present study examines whether tertiary-level EFL students at the University of Vienna incorporate vocabulary learning strategies (VLS) used in formal education (FE) into their extramural English (EE) practices. To provide an answer to the main research question, a set of research questions has been formulated. The study first identifies the vocabulary learning strategies students employ in formal educational contexts. It then investigates the range of extramural English activities students engage in, as well as the reasons for these practices. Building on this, the study explores the extent to which learners apply vocabulary learning strategies during extramural English activities. Finally, responses to RQs 1 and 4 are compared to reveal how VLS usage extends beyond the classroom.

5.1. Research Questions

Thus, in line with the objectives named above, the study at hand aims to answer the following research questions:

1. To what extent do tertiary-level EFL students implement vocabulary learning strategies in formal education?
2. What types of EE activities do tertiary-level EFL students engage in?
3. What are the primary reasons for which EFL students engage in EE activities?

4. To what extent do tertiary-level EFL students implement vocabulary learning strategies in EE practices?
5. To what extent does EFL students' use of vocabulary learning strategies differ between formal education and EE settings?

5.2.Participants

The questionnaire was filled in by 100 participants aged 19-30 years, with a mean age of 23.1 years (SD = 2.43) (Table 8). Most participants were female (83%), followed by males (16%), and one participant identified as non-binary. All participants were English students at the Department of English and American Studies at the University of Vienna. Most participants (n = 77) were enrolled in teacher education programmes (Ed), including Bachelor of Education (n = 38) and Master of Education (n = 39). A further 23% were registered in non-education degree programmes, among them BA English and American Studies (n = 15), MA English Language and Linguistics (n = 6), and MA Anglophone Literatures and Cultures (n = 2). Most participants' native language was German (n = 88), whereas 12 respondents listed a different L1, among them Hungarian (n = 5), Romanian (n = 2), Serbian (n = 1), Ukrainian (n = 1), Bosnian (n = 1), Greek (n = 1), and Bulgarian (n = 1).

Table 8. *Demographics of study participants*

Age:	Gender:	Degree programme:	L1:
Mean (SD)	% f (% m / % nb)	% Ed (% other)	% German (% other)
23.1 (2.43)	83 (16 / 1)	77 (23)	88 (12)

*SD= Standard deviation, f= female, m=male, nb= non-binary, Ed= Education

To obtain information directly relevant to the present study, participants were asked to provide self-assessments of their English vocabulary size and their confidence in learning English vocabulary in formal education (FE) and extramural English (EE) settings (Table 9). When asked to assess their own vocabulary size, a large proportion of participants viewed their English vocabulary positively, as 41% reported an extensive vocabulary, and a further 35% considered it very extensive. Around one-fifth of the respondents (22%) described their vocabulary as moderate, and only 2% felt that it was limited. Participants also reported generally high levels of confidence in learning English vocabulary across both learning contexts. In formal educational settings, more than half of the participants (52%) indicated that

they felt extremely confident, and a further 32% reported feeling quite confident. Participants stated that they are similarly confident in learning new vocabulary in extramural settings, as 51% described themselves as extremely confident and 34% as quite confident. Only a few participants reported moderate or low levels of confidence in both contexts.

Table 9. *Self-reported vocabulary size and confidence in vocabulary learning*

Vocabulary size: % extensive (% very extensive / % moderate / % limited)	Confidence in FE: % extremely confident (% quite / % moderate / % slight)	Confidence in EE: % extremely confident (% quite / % moderate / % slight)
41 (35 / 22 / 2)	52 (32 / 10 / 6)	51 (34 / 9 / 6)

*FE= Formal education, EE= extramural English

Lastly, to learn more about participants' habits of English use, they were asked to name three everyday contexts in which they used English the most. Responses were coded into functional activity categories, where each mention represented one ranked occurrence. As shown in Table 10, participants used English most frequently on social media, which was mentioned a total of 62 times. The second most common context for using English was education, e.g., studying and taking university courses in English (54), followed by socializing and communicating with friends and family (49). As the results show, the use of English in the workplace was less popular and ranked third in frequency. Although watching, reading, and listening to content in English were mentioned with similar frequency, these activities are spread across different rankings. Activities such as writing and playing games were mentioned least frequently. Finally, a small number of responses were coded as "other," including less common contexts such as travel, band, or thoughts.

Table 10. *Reported frequency of English use in everyday life*

Activity	examples	most frequent	2nd most frequent	3rd most frequent	total mentions
University	at university, my studies	19	21	14	54
Work	at work, teaching	9	3	16	28
Socialising	friends, family	8	18	23	49
Social media	online, social media	31	21	10	62
Watching	Netflix, movies, series, tv	9	11	4	24

Reading	books, reading	9	10	8	27
Listening	audiobooks, podcasts	7	10	4	21
Gaming	gaming, video games	4	0	1	5
Writing	texting	0	1	1	2
Other	traveling, thoughts, band	2	1	6	9

5.3. Test instrument

5.3.1. Questionnaire structure

In this study, a questionnaire was used as the sole data collection instrument and administered in English, as the target group consisted of EFL university students (see section 10.3). The questionnaire was shared in various WhatsApp, Studo, and Facebook groups used by students enrolled in courses at the Department of English and American Studies to achieve an adequate sample size. Data collection was conducted anonymously and only essential demographic and academic information was collected.

Background information. The first section elicited participants' demographic and linguistic data, including age, gender, degree programme, and first language. Moreover, in the second part of the background section, respondents were asked to rate the perceived size of their vocabulary and their confidence in learning new English vocabulary in both formal educational and extramural settings, on a five-point Likert scale. The final item in this section required participants to rank the three most frequent contexts in which they use English in their everyday lives.

Vocabulary learning strategies in formal education. The second section of the questionnaire examined respondents' use of vocabulary learning strategies in formal education (FE). Five VLS categories were addressed, namely planning, recording, discovery, learning, and self-management. The corresponding strategies were listed as individual items within each strategy category, and participants had to rate each strategy item on a six-point Likert scale ranging from "always" to "never" (always, almost always, often, sometimes, rarely, never). An even-numbered scale was selected for methodological reasons, as the absence of a neutral option may encourage respondents to reconsider their answers and choose a clearly defined answer (Chyung et al., 2017, p. 71). This section of the questionnaire was adapted from a validated

measurement instrument developed by Ghamarian (2017). The categorization of vocabulary learning strategy groups was retained in its original form to maintain the instrument's theoretical framework. However, individual items were adapted and at times shortened to meet the scope of the present study. As illustrated in Table 11, the *Learning* category was reduced the most. In addition, one strategy was introduced within the *Planning* category, as it emerged as salient during the piloting phase of the questionnaire. This addition is discussed in greater detail below. Similarly, an item was added to the *Recording* category because the original instrument did not incorporate digital forms of vocabulary recording, such as photographs or screenshots. Additionally, conceptually overlapping items were merged within several categories to avoid repetition. For instance, as the following items all refer to structured vocabulary recording practices “I keep a word list”, “I make flash cards”, “I like to stick sheets with vocabulary written on them on objects in my surroundings”, and “I keep a notebook or vocabulary log”, they were combined into a single statement “I collect vocabulary in an organised form (e.g. word list, flash cards, sticky sheets, vocabulary log)”. In some cases, additional examples were added, for instance, the item “I consider the aspects of a word which are most useful for me” was supplemented with the following examples: “I consider the aspects of a word which are most important to me (e.g., spelling, pronunciation, meaning)”. Moreover, items in the *Discovery* category were reformulated to match the first-person singular form used in the rest of the questionnaire. Accordingly, “Guessing its meaning from the context” was changed to “I guess its meaning from the context”.

Both the classification of strategy groups and the six-point Likert scale were adopted unchanged from the original questionnaire, as they were well suited to the objectives of the present study (Ghamarian, 2017, pp. 98–102).

Table 11. *Questionnaire adaptation and changes*

	Planning	Recording	Discovery	Learning	Self-management
Ghamarian (2017)	5	6	10	37	8
Study at hand	6	5	7	15	7

Extramural English activities. The third section of the questionnaire addressed the frequency of participants' engagement in extramural English activities, to identify the types of said

activities and the regularity of their use in everyday life. The activities presented in this section were selected from several empirical studies (Sundqvist & Sylvén, 2016; Schurz & Sundqvist, 2022; Schwarz, 2020). Based on these findings, the activities were grouped into six thematic activity categories: reading, watching, listening, writing, speaking, and playing. Responses were recorded using a seven-point Likert scale ranging from “almost never” to “every day”, which was adopted from Schurz and Sundqvist (2022).

Reasons for extramural English engagement. The fourth section of the questionnaire was designed to investigate the underlying reasons for the activities reported in the previous section. More specifically, this section sought to ascertain the reasons why participants engage in EE activities. To this end, six reason-related statements were included on a five-point Likert scale ranging from “strongly agree” to “strongly disagree”. The statements were drawn and translated to English from Schwarz’s (2020) study.

Vocabulary learning strategies in EE contexts. The fifth and final section of the questionnaire mirrored the second section in its design, as the same vocabulary learning strategy categories, items, and measurement scale were employed. The only point of divergence concerned the learning context: whereas the second section examined strategy use in formal education, the fifth section focused on their use in extramural English contexts. The decision to employ identical items and measurement scales across both settings was taken to enable direct comparison between the two contexts and to avoid the presupposition that learners employ different strategies in different contexts, which could otherwise bias the findings.

5.3.2. Questionnaire pilot testing

Prior to its administration, the questionnaire underwent a testing process consisting of two phases to ensure item clarity and intended interpretation.

First piloting phase. In the first phase, the questionnaire was reviewed by the thesis supervisor, and several items were modified and reformulated based on the feedback. For example, the statement “I regularly remind myself of my vocabulary learning goals” was rephrased to “I set personal vocabulary-learning goals,” since the adverb *regularly* was found unnecessary, as the Likert-scale options already include frequency markers. Moreover, certain items were supplemented with examples to ensure that participants did not limit the categories to the two

listed media types. Therefore, the item “I am interested in how things are in their original form (e.g., films, books)” was changed to “I am interested in how things are in their original form (e.g., films, books, songs, TV shows, video games...). Additionally, some items were changed to maintain formal consistency within VLS categories. In the *Learning strategies* category, items were formulated in the present progressive form, except for the strategy “Try to recall a similar word in other languages I know”, which was therefore changed to “Trying to recall a similar word in other languages I know.” Additional changes were made to the wording of some items to avoid misinterpretation. For instance, “I learn phonetic transcription” was changed to “I learn its phonetic transcription”. Similarly, in the statement “I do not collect vocabulary in an organised form. I repeat it by writing it down”, the phrase *writing it down* was replaced with *jotting it down* to avoid confusion with organised recording practices. These recommendations were incorporated into the revised questionnaire before the second piloting phase.

Second piloting phase. The second piloting phase involved Zoom interviews and took place in May 2025. Three participants were selected in a targeted manner to ensure that they fulfilled the study eligibility criteria. All three participants were enrolled in an English-language programme at the University of Vienna and are EFL learners, thus, English is not their native language (see Table 12). It is important to note that the individuals who participated in the piloting did not partake in the final data collection.

Table 12. *Piloting: Think-aloud interviews*

Name	Age	Gender	Studies	L1	Duration	Interview date
Pilot 1	26	female	MEd	Arabic, German	32 minutes	19 May 2025
Pilot 2	26	female	MEd	German	34 minutes	23 May 2025
Pilot 3	27	female	BA	Hungarian, German	17 minutes	24 May 2025

MEd= Master of Education, BA= Bachelor of Arts (in English and American Studies)

The questionnaire was piloted through think-aloud interviews, which is a cognitive testing method developed by Ericsson and Simon (1993), in which participants verbalise their thought processes while completing the questionnaire (Hornbæk et al., 2025, p. 742). This method was adopted to reveal their assumptions and interpretations that cannot be inferred solely from

questionnaire responses. Consequently, participants were instructed to fill in the questionnaire while reading it aloud and were prompted to verbalize their thought processes continuously.

Following the think-aloud sessions, several questionnaire items were revised. First, some word choices were adjusted to improve the items. For instance, as the *Learning* strategies category focuses on the learning process, the item “I revise it by saying it out loud” was changed to “I learn it by saying it out loud”. Moreover, the verb *have* was replaced with the verb *use* in “I use a big repertoire of vocabulary learning strategies”. Similarly, the verb *remind* was changed to *set* in “I set personal vocabulary-learning goals”. Moreover, the adverbial frequency markers were removed from three items in the *Self-management* group, as the response options already express frequency.

A second concern frequently raised during the think-aloud sessions was the need for additional examples. These included specifying interlocutors (e.g., friends, family members, peers, or professors), physical movements (e.g., movement or dance), and reference tools (e.g., Thesaurus, AI). Additional examples related to everyday extramural English engagement, such as online shopping, were also added to the list of EE activities. Another concern was item consistency, which led to the reformulation of all *Discovery* items to align with the first-person singular structure used throughout the questionnaire.

The overall structure of the questionnaire remained unchanged. However, one additional item was introduced within the *Planning* category, “I open the tools I use (e.g., dictionaries, AI, thesaurus) in advance in case I need to look up any words”, as participants claimed this formed a part of their planning habit. Once all the adaptations identified during testing had been implemented, the questionnaire was published on SoSci Survey, and the online data collection began at the end of May 2025.

5.4. Data analysis

Data analysis was conducted using SPSS Statistics. Several variables and measurement scales were constructed to address the research questions and to depict EFL learners’ use of vocabulary learning strategies in both formal educational contexts and extramural English settings. Before addressing the research questions, the internal consistency of the VLS scale used in the study was examined. The reliability results are reported below.

To answer the first and fourth research questions, mean scores were calculated for each vocabulary strategy category in both learning contexts to determine which categories are most frequently employed in formal education and in extramural English. Moreover, to learn more about participants' VLS use across both settings, mean scores were calculated for all strategy items within the strategy categories.

To answer the last research question, which aimed at ascertain the extent to which learners' vocabulary strategy use differs between formal education and extramural English, a paired t-test was used to compare vocabulary learning strategies and assess the significance of the mean difference between the two settings.

Regarding extramural English activities, descriptive statistics were used to analyse students' engagement patterns. Frequencies for each activity category were calculated and presented in tabular form, while mean scores were additionally visualised using boxplots (RQ2). Similarly, descriptive statistics were also employed to examine the reasons for which students engage in extramural English (RQ 3).

As recommended in the literature, a reliability analysis was conducted for both teaching contexts to examine the internal consistency of the individual strategy categories (Bonett & Wright, 2015, p. 3). Internal consistency is considered sufficient if Cronbach's alpha is above .60; otherwise, items should be deleted to increase reliability. As Table 13 shows, similar Cronbach's alpha values were obtained for the *Planning* category in both settings, .775 in the FE context and .772 in the EE context. For the *Discovery* category, the calculated alpha values were $\alpha = .624$ in the FE setting and $\alpha = .643$ in the EE setting, which are acceptable. The alpha values in the *Learning* and *Self-management* categories were above .83 in both contexts, which indicates high reliability.

Table 13. *Cronbach's alpha for VLS categories across both settings*

Setting	Planning	Recording	Discovering	Learning	Self-management
FE	.775	(.509) .608*	.624	.831	.884
EE	.772	.584	.643	.830	.869

FE= Formal education, EE= extramural English

* Cronbach's alpha is reported for completeness only, internal consistency was evaluated using inter-item correlations.

The Recording strategy initially consisted of five items; however, the preliminary reliability coefficient in the FE setting was too low ($\alpha = .509$), which indicates low internal consistency. The low Cronbach's alpha for the *Recording* strategies category across both vocabulary learning settings may be attributable to the heterogeneous nature of the items. Each item represented a different vocabulary recording strategy, and the use of one strategy may reduce the likelihood of using the others. As such, the items are not expected to be highly intercorrelated as they “have little in common” (Nunnally, 1967, p. 210).

A differentiated analysis of the inter-item correlations showed that the third (“I collect vocabulary in an organised form (e.g. word list, flash cards, stick sheets, vocabulary log)”) and fifth (“I take pictures or screenshots to collect vocabulary”) items in particular contributed to the low reliability. Therefore, these items were removed, which resulted in a considerable improvement in the scale's reliability ($\alpha = .608$). However, since the final scale of *Recording* strategies consisted of only three items, Cronbach's alpha cannot be considered as a meaningful indicator of internal consistency (Tavakol & Dennick, 2011, p. 54). Consequently, internal consistency was assessed by examining inter-item correlations (Table 14). The inter-item correlations ranged from .23 to .49, with a mean of .34, which suggests satisfactory internal consistency (Clark & Watson, 1995, p. 316).

Table 14: *Inter-item correlation for Recording strategies used in FE*

	Item 1	Item 2	Item 4
Item 1	1.000	.493	.296
Item 2	.493	1.000	.230
Item 4	.296	.230	1.000

6. Results

This section reports the results of the study following the order of the research questions. Consequently, it begins with an analysis of participants' reported use of vocabulary-learning strategies in formal education. The second subsection presents the extramural English activities respondents employ, while the subsequent subsection discusses the reasons underlying these activities. This is followed by a subsection examining the use of vocabulary learning strategies in extramural English contexts. The chapter concludes with a discussion of the extent to which

vocabulary learning strategies used in formal education are transferred to extramural English practices.

6.1. RQ1: VSL use in formal education

As depicted in Table 15, amongst the five vocabulary learning strategy categories used in formal education, *Planning strategies* yielded the highest mean score ($M = 3.87$, $SD = 0.77$), followed by *Discovery strategies* with comparatively high reported use ($M = 3.63$, $SD = 0.53$). The mean above 3.5 and close to 4 indicates that participants, on average, selected response options sometimes (3) and often (4), with a tendency closer to often. *Learning strategies* displayed a slightly lower, yet still moderate, mean score ($M = 3.40$, $SD = 0.63$). In contrast, *Recording strategies* were employed less frequently overall ($M = 3.03$, $SD = 0.66$). The lowest mean value was reported for *Self-management strategies* ($M = 2.59$, $SD = 0.81$), which suggests that strategies for monitoring, controlling, and evaluating one's own vocabulary learning are used rarely. The comparatively higher standard deviation in this category also indicates significant individual differences in the use of self-management strategies.

Table 15. Mean scores for VLS categories in FE

Planning:	Discovery:	Learning:	Recording:	Self-management:
Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
3.87 (.772)	3.63 (.531)	3.40 (.634)	3.03 (.663)*	2.59 (.813)

*3-item scale used based on the Cronbach's alpha results (see Section 5.4)

Although category-level mean scores allow for the identification of general patterns, an item-level analysis was conducted to identify the most and least frequently reported strategies within each category (highlighted in green and red, respectively), providing more detailed insight into participants' VLS use in formal education (Table 16).

Within *Planning strategies*, the conscious selection of words to be learned showed the highest mean ($M = 5.00$), suggesting that, on average, this planning strategy is almost always employed. High levels of use were also reported for knowing how to choose and adapt learning strategies ($M = 4.32$) and prioritising important word aspects ($M = 4.21$), both indicating

frequent use, ranging from often to almost always. In contrast, participants rarely schedule time for vocabulary revisions ($M = 2.32$).

For *Recording strategies*, statements referring to unstructured recording practices, such as learning words by saying them out loud ($M = 3.50$) and by jotting them down ($M = 3.36$), yielded the highest mean scores. However, given that these mean scores fall between 'sometimes' and 'often', they cannot be considered high in absolute terms, just within the *Recording strategy* category. When it came to the use of audio recordings or voice memos ($M = 1.66$), participants' responses placed this strategy predominantly in the rare range of the scale. In the *Discovery strategy* category, the mean score of the item consulting dictionaries, language corpus, word lists, and AI ($M = 4.71$) suggests that participants often use reference sources to determine a word's meaning. Similarly, inferring a word's meaning from context ($M = 4.39$) and recalling similar words in other languages ($M = 4.02$) showed high mean values, as both strategies were positioned close to the often response option. By contrast, participants rarely ask others for clarification of word meanings ($M = 2.28$).

Results showed that within the *Learning strategy* category, participants mostly learn words by learning their translations ($M = 4.58$). Ranking immediately below the highest mean, the strategy of deliberately using recently acquired words in writing to promote their retention achieved a mean score of 4.36, while learning words' pronunciation ($M = 4.29$) was situated at a similar level of the scale. The learning strategies with the lowest mean scores were learning through physical movement ($M = 1.65$) and learning the phonetic transcription of words ($M = 2.30$), both rated rarely or sometimes.

Finally, results show that *Self-management strategies* were generally used less than other categories. Of the seven listed items, reminding oneself of the value of vocabulary learning yielded the highest mean in this category ($M = 3.18$); however, the moderate mean suggests a more limited use among participants. The low mean scores for relaxation techniques ($M = 2.11$) and self-encouragement strategies ($M = 2.44$) suggest that these strategies play a minor role in participants' learning routines.

Table 16. *Summary of the findings of VLS use in formal education (N = 100)*

Category	Items	M $\bar{x}$	(SD)
Planning strategies	1. I consciously choose the words I want to learn.	5.00	.00
	2. I consider the aspects of a word which are most important to me (e.g. spelling, pronunciation, meaning...)	4.21	1.08
	3. I use a big repertoire of vocabulary learning strategies.	3.66	1.45
	4. I know how to choose, adapt and combine my vocabulary learning strategies.	4.32	1.37
	5. I schedule and plan time for my vocabulary revisions.	2.32	1.08
	6. I open the tools I use (e.g. dictionaries, AI, thesaurus...) in advance in case I need to look up any words.	3.74	1.34
Recording strategies	1. I do NOT record vocabulary in an organised form. I just learn it by saying it out loud.	3.50	1.10
	2. I do NOT record vocabulary in an organised form. I just learn it by jotting it down randomly, without collecting them all in one place.	3.36	1.25
	4. I record audio clips or voice memos to collect vocabulary.	1.66	.741
Discovery strategies	1. I guess its meaning from the context.	4.39	.750
	2. I try to recall a similar word in other languages I know.	4.02	1.09
	3. I analyse available resources (e.g. illustrations, visuals...).	3.61	1.17
	4. I consult a reference source (e.g. monolingual /bilingual dictionary, language corpus, wor lists, Thesaurus, AI...)	4.71	.879
	5. I simply ignore or skip the unknown word.	2.94	.801
	6. I look for defining words or phrases in the rest of the source material.	3.46	.857
	7. I ask somebody I know (e.g. friends, family, peers, professors...).	2.28	1.06
Learning strategies	1. I learn words in combination with any kind of visual representation (e.g. pictures, drawings...).	3.09	1.11
	2. I use semantic mapping systems, such as a mind map or clustering.	3.04	1.24
	3. I learn a word together with its semantic (lexical) relations (e.g. synonyms, antonyms)	3.70	1.06
	4. I paraphrase (reword) the word I want to learn.	3.55	1.10
	5. I learn its translation.	4.58	1.06
	6. I learn collocations and colligations for a new word.	3.54	.957
	7. I connect the word with a personal experience to remember it.	2.85	1.33
	8. I use physical action to remember a word (e.g. movement, dance...).	1.65	.808
	9. I try to remember the word in the context in which I encountered it.	3.47	1.29
	10. I learn its spelling specifically.	3.13	1.18
	11. I learn its pronunciation.	4.29	1.16
	12. I learn its phonetic transcription.	2.30	1.10
	13. I deliberately use the word(s) I'm trying to learn in conversations.	4.06	1.33
	14. I deliberately use the word(s) I'm trying to learn in my writing.	4.36	1.08
	15. I deliberately seek out and engage with materials (e.g. videos, music, articles) that may contain the word(s) I'm trying to learn.	3.53	1.45
Self-management strategies	1. I set personal vocabulary-learning goals.	2.59	1.02
	2. I remind myself of the value of building my vocabulary.	3.18	1.09
	3. I monitor my concentration while learning vocabulary to ensure its effectiveness.	2.66	1.07
	4. I adapt tasks to avoid boredom when learning vocabulary.	2.72	1.12
	5. I use relaxation techniques to help me learn vocabulary.	2.11	.919
	6. I try to generate positive emotional reactions when learning vocabulary.	2.49	1.05
	7. I use self-encouragement techniques when learning vocabulary.	2.44	1.10

6.2. RQ2: Extramural English activities

Table 17 summarises participants' self-reported frequency of engagement in six categories of extramural English activities comprising reading (e.g. books, e-books, articles, social media content, comics, poetry, stories, fanfiction, lyrics, blogs, and online shopping websites ...), watching (e.g. television programmes, films, series, documentaries, comedy shows, YouTube and social media content, cinema, and theatre performances...), listening (e.g. music, radio, podcasts, audiobooks, and concerts...), writing (e.g. messages, e-mails, poetry, stories, comics, songs, social media content, and in-game chats...), speaking (e.g. face-to-face, online, and in gaming contexts...), and playing (e.g. board games, video or computer games, and games on smartphones or tablets...).

Table 17. *Extramural English activities by frequency*

	(almost) never	a few times a year	once a month	a few times a month	once a week	a few times a week	every day
reading	1%	1%	3%	6%	1%	11%	77%
watching	-	-	-	4%	1%	12%	83%
listening	-	-	-	4%	2%	7%	87%
writing	1%	3%	2%	7%	9%	27%	51%
speaking	1%	2%	1%	5%	9%	22%	60%
playing	8%	22%	28%	16%	2%	9%	15%

Based on the frequency data for the individual activities, it becomes apparent that receptive activities were mentioned more frequently than productive ones. In particular, the majority of respondents reported regularly engaging in listening and viewing activities. For example, 87% reported listening to English-language audio content daily, while 83% reported watching English-language content daily. Reading (77%) plays a slightly less significant role in participants' daily extramural language use than audiovisual and audio content.

The frequency data for productive activities are more widely distributed across the scales. Most respondents stated that they speak English every day (60%), while 22% said they speak it just a few times a week. Just over half of the participants (51%) also stated that they write in English every day, whereas almost a third of them (27%) indicated writing only a few times per week. At the same time, the answers in these two categories show greater variation, with weekly and

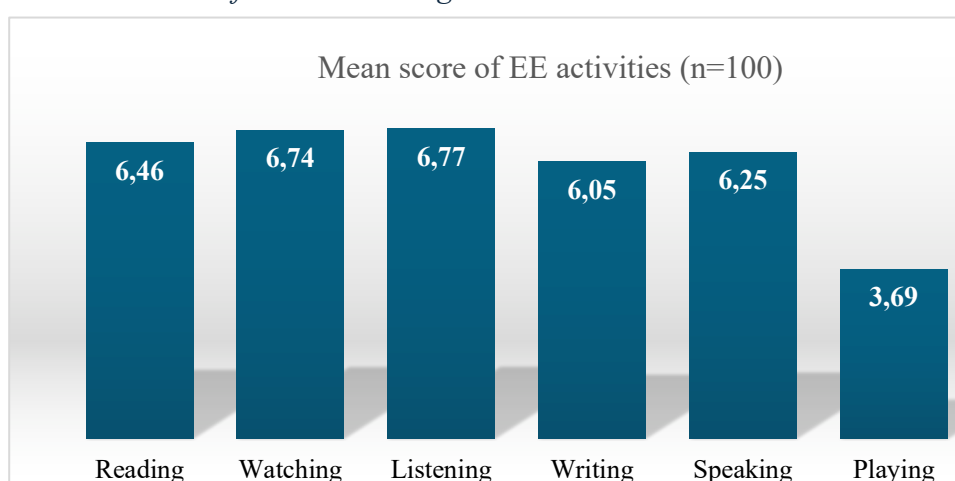
monthly usage frequently mentioned alongside daily usage. Lastly, gaming activities were mentioned less frequently overall. Only 15% of participants reported playing games in English daily, while 28% once a month and 22% a few times a year.

In addition to the frequency analysis, mean values were calculated for each extramural English activity type. As shown in Figure 1, the differences between the activities are also apparent at this level. The highest mean values were calculated for receptive activities. An average of 6.77 was calculated for listening, and 6.74 for the watching category. Overall, the average values correspond well with the results presented in the frequency table. Based on these, it can be concluded that the productive activities mentioned are a regular part of the respondents' everyday extramural language use.

In the case of productive activities, the average values are slightly lower than for receptive activities, but remain at a relatively high level. The average value for speaking is $M = 6.25$, while for writing it is $M = 6.05$, which indicates a similar frequency for the two activities.

As already shown in the frequency analysis, compared to the other categories, playing ($M = 3.69$) is reported less frequently overall and thus plays a minor role in participants' extramural use of English.

Figure 1. *Mean scores of extramural English activities*



6.3. RQ3: Extramural English reasons

In this subsection, the reasons for which participants engage in EE activities will be revealed. The results primarily point to the importance of personal preferences for the English language.

The statement that received the highest level of strong agreement was “I just feel like using English”: 91% of respondents agreed, with the majority (80%) agreeing completely.

The responses also clearly show that participants prefer authentic English-language content in the original language (see Table 18). The vast majority of respondents (94%) participate in EE activities because they are interested in the original form of the content. Moreover, 83% of respondents agreed or strongly agreed with the statement that English sounds better, which shows that they prefer to watch or read media in the original language. Educational and communication goals were also prominent, as 86% of participants indicated that they would like to improve their language skills by using English, and 75% use English regularly because of their international contacts and friends. In addition, although to a lesser extent, accessibility reasons were also frequently mentioned: 70% of respondents agreed that English is often necessary because certain resources are, at least temporarily, only available in English.

Table 18. *Reasons for engagement in EE activities by frequency (n=100)*

	strongly agree	agree	somewhat agree	disagree	strongly disagree
I simply feel like using English.	80%	11%	7%	1%	1%
I am interested in how things are in their original form.	63%	31%	6%	-	-
Many things sound better in English.	54%	29%	11%	4%	2%
I want to improve my English skills.	45%	41%	11%	2%	1%
I need English for international contacts and friendships.	32%	43%	13%	8%	4%
Many things are only available in English (at least temporarily).	11%	59%	22%	6%	2%

6.4. RQ4: VSL use in extramural English contexts

Table 19 presents the mean scores and standard deviations for the vocabulary-learning strategy categories used in extramural English contexts. Among the five categories, Discovery strategies yielded the highest mean score ($M = 3.72$, $SD = 0.59$), which places the discovery group closest to the sometimes level of the scale. Results suggest that Learning strategies are often used in EE contexts, as they showed more moderate mean values ($M = 3.16$, $SD =$

0.62). Planning strategies ($M = 3.09$, $SD = 0.88$) and Recording strategies ($M = 3.07$, $SD = 0.74$) displayed very similar mean scores, which indicates that participants, on average, selected the response option sometimes for these strategy categories. Lastly, Self-management strategies ($M = 2.21$, $SD = 0.70$) had the lowest mean across the five categories.

Table 19. *Mean scores for VLS in EE*

Discovery:	Learning:	Planning:	Recording:	Self-management:
Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
3.72 (.591)	3.16 (.621)	3.09 (.882)	3.07 (.736)	2.21 (.701)

To complement the category-level findings, an item-level analysis was conducted to examine in greater detail the individual strategies employed during extramural English engagement (see Table 20). Within *Discovery strategies*, inferring meaning from context showed the highest position on the scale ($M = 4.97$), approaching *almost always*. Consulting reference sources ($M = 4.28$) and drawing on similarities with other known languages to infer word meaning ($M = 4.32$) were likewise positioned at the *often* level. In contrast, the low mean value of the last item indicates that participants *rarely* seek assistance from others ($M = 2.19$) to discover word meaning.

Within the category of learning strategies, relatively large differences can be observed in the use of individual strategies. The highest average score was achieved through translation ($M = 4.51$, $SD = 1.19$), suggesting that this method was almost always used by participants. Ranking below learning translations was the conscious use of newly learned vocabulary, both in spoken language ($M = 4.02$, $SD = 1.30$) and in writing ($M = 3.97$, $SD = 1.32$). In contrast, strategies involving physical movement to retain vocabulary ($M = 1.59$, $SD = 0.79$) and the use of phonetic transcription ($M = 2.15$, $SD = 0.87$) were much less common in the responses.

As the learning item consisted of the most strategies (15), it is worth mentioning some that yielded moderate mean values in addition to the ones with high means. Strategies with values ranging from "rarely" to "sometimes" included learning vocabulary with visual aids ($M = 2.96$), using semantic relationships such as synonyms and antonyms ($M = 2.99$), and consciously practising spelling ($M = 2.90$). A similar trend was observed in linking words to personal

experiences ($M = 2.86$) and using mind maps and other semantic systems ($M = 2.36$), which were also not among the frequently used strategies. For strategies such as rephrasing words ($M = 3.13$), learning collocations and colligations ($M = 3.08$), and recalling words in their original context ($M = 3.39$), the average mean value slightly exceeded the "sometimes" category, which indicates somewhat more regular use, although they cannot yet be considered particularly frequent. Of those listed, conscious learning of pronunciation stands out the most ($M = 3.87$), approaching the level of often-used strategies.

Within *Planning strategies*, the highest mean values were observed for knowing how to choose, adapt, and combine vocabulary learning strategies ($M = 3.73$) and for prioritising specific aspects of a word ($M = 3.69$). Although these items received the highest scores within the category, the average scores do not indicate particularly intensive use, as they are close to the mid-range of the scale. In contrast, consciously planning or scheduling time for vocabulary review had the lowest average score within the category ($M = 2.01$), suggesting that this strategy is rarely used in extramural English contexts. Similarly, conscious selection of words to learn is sometimes used ($M = 2.90$).

A differentiated pattern emerged within *Recording strategies*. Learning vocabulary in an unorganised form just by saying it aloud produced one of the highest mean values in this category ($M = 4.13$), placing it clearly at the *other* level. The second unstructured recording option, namely, learning vocabulary by jotting it down randomly, without collecting it in one place, showed a similar position on the scale ($M = 3.75$). By contrast, the low mean value for using audio recordings or voice memos ($M = 1.64$) suggests that participants favour taking pictures ($M = 3.25$) over audio for recording vocabulary.

Finally, *Self-management strategies* were generally located in the lower range of the scale. Reminding oneself of the importance of vocabulary learning yielded the highest mean within this category ($M = 2.80$), but participants reported engaging in this strategy only at a level close to *sometimes*. All remaining items, including personal vocabulary goals ($M = 2.16$), employment of relaxation ($M = 1.78$), and self-encouragement techniques ($M = 2.09$), suggest that self-management strategies, in general, have limited traction in participants' extramural English routines.

Table 20. *Summary of the findings of VLS use in extramural English contexts (N = 100)*

Category	Items	M $\bar{x}^*$	(SD)
Planning strategies	1. I consciously choose the words I want to learn.	2.90	1.03
	2. I consider the aspects of a word which are most important to me (e.g. spelling, pronunciation, meaning...)	3.69	1.12
	3. I use a big repertoire of vocabulary learning strategies.	3.09	1.42
	4. I know how to choose, adapt and combine my vocabulary learning strategies.	3.73	1.65
	5. I schedule and plan time for my vocabulary revisions.	2.01	.834
	6. I open the tools I use (e.g. dictionaries, AI, thesaurus...) in advance in case I need to look up any words.	3.13	1.46
Recording strategies	1. I do NOT record vocabulary in an organised form. I just learn it by saying it out loud.	4.13	1.33
	2. I do NOT record vocabulary in an organised form. I just learn it by jotting it down randomly, without collecting them all in one place.	3.75	1.32
	3. I collect vocabulary in an organised form (e.g. word list, flash cards, stick sheets, vocabulary log)	2.59	1.08
	4. I record audio clips or voice memos to collect vocabulary.	1.64	.674
	5. I take pictures or screenshots to collect vocabulary.	3.25	1.43
Discovery strategies	1. I guess its meaning from the context.	4.97	.797
	2. I try to recall a similar word in other languages I know.	4.32	.96
	3. I analyse available resources (e.g. illustrations, visuals...).	3.62	1.35
	4. I consult a reference source (e.g. monolingual /bilingual dictionary, language corpus, word lists, Thesaurus, AI...)	4.28	1.19
	5. I simply ignore or skip the unknown word.	3.04	.875
	6. I look for defining words or phrases in the rest of the source material.	3.68	.993
	7. I ask somebody I know (e.g. friends, family, peers, professors...).	2.19	1.05
Learning strategies	1. I learn words in combination with any kind of visual representation (e.g. pictures, drawings...).	2.96	1.07
	2. I use semantic mapping systems, such as a mind map or clustering.	2.36	.937
	3. I learn a word together with its semantic (lexical) relations (e.g. synonyms, antonyms)	2.99	.881
	4. I paraphrase (reword) the word I want to learn.	3.13	1.01
	5. I learn its translation.	4.51	1.19
	6. I learn collocations and colligations for a new word.	3.08	.939
	7. I connect the word with a personal experience to remember it.	2.86	1.31
	8. I use physical action to remember a word (e.g. movement, dance...).	1.59	.792
	9. I try to remember the word in the context in which I encountered it.	3.39	1.35
	10. I learn its spelling specifically.	2.90	1.15
	11. I learn its pronunciation.	3.87	1.23
	12. I learn its phonetic transcription.	2.15	.868
	13. I deliberately use the word(s) I'm trying to learn in conversations.	4.02	1.30
	14. I deliberately use the word(s) I'm trying to learn in my writing.	3.97	1.32
	15. I deliberately seek out and engage with materials (e.g. videos, music, articles) that may contain the word(s) I'm trying to learn.	3.71	1.47
Self-management strategies	1. I set personal vocabulary-learning goals.	2.16	.787
	2. I remind myself of the value of building my vocabulary.	2.80	1.05
	3. I monitor my concentration while learning vocabulary to ensure its effectiveness.	2.17	.93
	4. I adapt tasks to avoid boredom when learning vocabulary.	2.30	.94
	5. I use relaxation techniques to help me learn vocabulary.	1.78	.74
	6. I try to generate positive emotional reactions when learning vocabulary.	2.20	1.03
	7. I use self-encouragement techniques when learning vocabulary.	2.09	1.01

6.5. RQ5: Comparing VSL use in FE and EE settings

In order to compare the respondents' vocabulary learning strategy use across the two contexts, mean values were calculated and are listed in Table 21 .

First, in the group of planning strategies, it can be observed that participants use planning strategies slightly more frequently in formal educational contexts. Although the mean value in the extramural English context is not much lower, it does show that, on average, participants chose the response option 'sometimes' on the scale, which in the formal educational context was on average just one point higher and corresponds to the response option 'often'.

Regarding recording strategies, the mean values indicate that students use them similarly frequently as the planning strategies. There is no noteworthy difference between the two learning contexts, as the mean scores are both situated around the sometimes frequency in the formal educational context (M=3.03) and in the extramural English setting (M=3.07). The same trend can be observed in the discovery strategy group, where the mean score reflects the response 'often' across both settings. Thus, there is no significant difference between the two strategy groups. However, it should be noted that this is the only group in which the mean score is slightly higher in the extramural English setting (M=3.72) than in the formal education setting (M=3.63). Regarding learning strategies, participants reported using strategies in this strategy group slightly more in the formal educational context (M=3.40) and slightly less frequently in their extramural English engagement (M=3.16). Lastly, the category of self-management strategies yielded the lowest mean scores. Additionally, the results in this category resemble the pattern of the majority of the VLS groups, as the mean scores do not differ, however, they are higher in the formal educational context (M=2.59) than in the EE setting (M=2.21).

Table 21. *Comparison of mean scores for VLS categories in FE and EE*

Setting	Planning: Mean (SD)	Recording: Mean (SD)	Discovery: Mean (SD)	Learning: Mean (SD)	Self- management: Mean (SD)
FE	3.87 (.772)	3.03 (.663)*	3.63 (.531)	3.40 (.634)	2.59 (.813)
EE	3.09 (.882)	3.07 (.736)	3.72 (.591)	3.16 (.621)	2.21 (.701)

After the descriptive statistics, a paired-samples *t*-test was conducted to examine whether the observed differences between the formal education and extramural English contexts were statistically significant. As the same participants reported their strategy use in both settings, a paired design was appropriate in order to account for within-subject variability and to determine whether the mean differences systematically deviated from zero.

Although the differences in the mean scores between the two settings in the table above seemed minor, the paired-samples *t*-test revealed significant differences between formal education and extramural English context across all five VLS strategies. As presented in Table 22, the greatest difference could be observed in the planning strategies ($t(99) = 15.511, p < .001, 95\% \text{ CI } [0.682, 0.883]$). Similarly, respondents' reported use of learning strategies ($t(99) = 5.323, p < .001, 95\% \text{ CI } [0.152, 0.339]$) and self-management strategies ($t(99) = 7.621, p < .001, 95\% \text{ CI } [0.281, 0.506]$) for the two settings showed slightly lower but still meaningful statistical differences. The least prominent differences were observed in participants' employment of recording strategies ($t(99) = -3.138, p = .002, 95\% \text{ CI } [-0.070, -0.016]$), followed by discovery strategies ($t(99) = -2.152, p = .034, 95\% \text{ CI } [-0.170, -0.007]$).

Table 22. *Paired T-test*

		Paired Differences								Significance	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		<i>t</i>	df		One-Sided <i>p</i>	Two-Sided <i>p</i>
					Lower	Upper					
Pair 1	Planning	.78333	.50503	.05050	.68313	.88354	15.511	99	<.001	<.001	
Pair 2	Recording	-.23200	.73931	.07393	-.37869	-.08531	-3.138	99	.001		.002
Pair 3	Discovering	-.09857	.45796	.04580	-.18944	-.00770	-2.152	99	.017		.034
Pair 4	Learning	.24333	.45713	.04571	.15263	.33404	5.323	99	<.001	<.001	
Pair 5	Self-management	.38429	.50424	.05042	.28423	.48434	7.621	99	<.001	<.001	

In addition to the category-level evaluation, an item-level comparison was conducted to identify similarities and differences in specific vocabulary learning strategies across both settings. It is worth noting that the item-level comparison was included as a supplementary descriptive analysis to identify which strategies were the most and least frequently used by

participants within each strategy category. Therefore, no *t*-tests were conducted for individual items, as this part of the analysis served as additional information. Moreover, the differences between items can be observed clearly from the items' mean values presented in Table 23 for each setting.

As shown in Table 23, all strategy items in the planning strategy category yielded higher mean scores in formal education than in EE. This pattern is particularly evident in item 1 “I consciously choose the words I want to learn“, which yielded the highest mean score among planning strategies in formal education ($M = 5.00$), however, the mean score in the EE context is significantly lower ($M = 2.90$). Similarly, item 2 „I consider the aspects of a word which are most important to me“ and item 4 “I know how to choose, adapt and combine my vocabulary learning strategies“ show higher mean values in formal educational context ($M = 4.2$; $M = 4.32$) than in EE ($M = 3.69$; $M = 3.73$). However the mean difference of this item in the two settings is not significant. As depicted in Table 23, the same applies to item 6, which yielded higher mean scores in formal educational than in EE (FE: $M = 3.74$; EE: $M = 3.13$). Lastly, item 5 shows the lowest mean scores in both settings (FE: $M = 2.32$; EE: $M = 2.01$).

Concerning the recording strategies category, there are fewer significant differences between the two contexts. For instance, the items that described the unorganised collection (FE $M = 3.50$; EE $M = 4.13$) and oral repetition of vocabulary items (FE $M = 3.36$; EE $M = 3.75$) show slightly higher mean scores in the extramural English context. In contrast, participants rarely make use of audio clips or voice memos to collect vocabulary (FE $M = 1.66$; EE $M = 1.64$).

Within the discovery strategy category, more items show comparatively high mean values in both contexts. For instance, participants reported using item 1 “I guess its meaning from the context” (FE $M = 4.39$; EE $M = 4.97$) and item 2 “I try to recall a similar word in other languages I know” (FE $M = 4.02$; EE $M = 4.32$) frequently across both contexts, and the mean values are even higher in extramural English context. In contrast, the mean score for consulting reference sources, such as dictionaries or other tools, shows more frequent use in formal education (FE $M = 4.71$; EE $M = 4.28$). The lowest mean scores across both contexts were found in item 7 “I ask somebody I know (e.g., friends, family, peers, professors...)” (FE $M = 2.28$; EE $M = 2.19$).

Similarities can also be observed within the learning strategy category. On the one hand, the category items that were reported to be used frequently are learning translations (FE $M = 4.58$;

EE M = 4.51) and pronunciation (FE M = 4.29; EE M = 3.87). Similarly, frequently amongst participants are the strategies where they use newly learned vocabulary items in conversation (FE M = 4.06; EE M = 4.02) or in writing (FE M = 4.36; EE M = 3.97). On the other hand, similarities also arise amongst the strategies that are use least frequently across both settings, such as using physical movement (FE M = 1.65; EE M = 1.59), learning its phonetic transcription (FE M = 1.65; EE M = 1.59) and connecting the right to a personal experiences to remember it (FE M = 2.85; EE M = 2.86). The strongest difference between the two settings was found within this category, specifically in item 3, which states that participants learn words' semantic relations (FE M = 3.70; EE M = 2.99).

Lastly, although self-management strategies show the lowest mean scores across strategy items in both contexts, all items within the categories yielded slightly higher mean scores in the formal educational context than in the extramural English context.

Table 23. *Comparison of VLS use across both settings (N=100)*

Category	Items	FE (M)	EE (M)
Planning strategies	1. I consciously choose the words I want to learn.	5.00	2.90
	2. I consider the aspects of a word which are most important to me (e.g. spelling, pronunciation, meaning...)	4.21	3.69
	3. I use a big repertoire of vocabulary learning strategies.	3.66	3.09
	4. I know how to choose, adapt and combine my vocabulary learning strategies.	4.32	3.73
	5. I schedule and plan time for my vocabulary revisions.	2.32	2.01
	6. I open the tools I use (e.g. dictionaries, AI, thesaurus...) in advance in case I need to look up any words.	3.74	3.13
Recording strategies	1. I do NOT record vocabulary in an organised form. I just learn it by saying it out loud.	3.50	4.13
	2. I do NOT record vocabulary in an organised form. I just learn it by jotting it down randomly, without collecting them all in one place.	3.36	3.75
	4. I record audio clips or voice memos to collect vocabulary.	1.66	1.64
Discovery strategies	1. I guess its meaning from the context.	4.39	4.97
	2. I try to recall a similar word in other languages I know.	4.02	4.32
	3. I analyse available resources (e.g. illustrations, visuals...).	3.61	3.62
	4. I consult a reference source (e.g. monolingual /bilingual dictionary, language corpus, word lists, Thesaurus, AI...)	4.71	4.28
	5. I simply ignore or skip the unknown word.	2.94	3.04
	6. I look for defining words or phrases in the rest of the source material.	3.46	3.68
	7. I ask somebody I know (e.g. friends, family, peers, professors...).	2.28	2.19
Learning strategies	1. I learn words in combination with any kind of visual representation (e.g. pictures, drawings...).	3.09	2.96
	2. I use semantic mapping systems, such as a mind map or clustering.	3.04	2.36
	3. I learn a word together with its semantic (lexical) relations (e.g. synonyms, antonyms)	3.70	2.99
	4. I paraphrase (reword) the word I want to learn.	3.55	3.13
	5. I learn its translation.	4.58	4.51
	6. I learn collocations and colligations for a new word.	3.54	3.08
	7. I connect the word with a personal experience to remember it.	2.85	2.86
	8. I use physical action to remember a word (e.g. movement, dance...).	1.65	1.59
	9. I try to remember the word in the context in which I encountered it.	3.47	3.39
	10. I learn its spelling specifically.	3.13	2.90
	11. I learn its pronunciation.	4.29	3.87
	12. I learn its phonetic transcription.	2.30	2.15
	13. I deliberately use the word(s) I'm trying to learn in conversations.	4.06	4.02
	14. I deliberately use the word(s) I'm trying to learn in my writing.	4.36	3.97
	15. I deliberately seek out and engage with materials (e.g. videos, music, articles) that may contain the word(s) I'm trying to learn.	3.53	3.71
Self-management strategies	1. I set personal vocabulary-learning goals.	2.59	2.16
	2. I remind myself of the value of building my vocabulary.	3.18	2.80
	3. I monitor my concentration while learning vocabulary to ensure its effectiveness.	2.66	2.17
	4. I adapt tasks to avoid boredom when learning vocabulary.	2.72	2.30
	5. I use relaxation techniques to help me learn vocabulary.	2.11	1.78
	6. I try to generate positive emotional reactions when learning vocabulary.	2.49	2.20
	7. I use self-encouragement techniques when learning vocabulary.	2.44	2.09

7. Discussion

In this section, the results of the study will be discussed, explained, compared, and embedded in existing research.

7.1. RQ1: VSL use in formal education

Research question one aimed to examine which vocabulary learning strategies learners use in formal educational contexts. The research question was answered satisfactorily, and the participants' responses revealed clear patterns and trends in their vocabulary learning strategy use. The relatively high use of planning strategies suggests that learners' vocabulary learning is structured and goal-oriented. In particular, the strategy item analysis showed that the most frequently used planning strategy was choosing the target words they want to learn. This finding is reasonable, especially in formal educational contexts, because the participants are tertiary-level English students who tackle a large amount of language input regularly to prepare for their courses. To manage that learning, they plan ahead, which can be expected to translate into vocabulary learning. Hardan (2013, p. 171) parallels these results, stating that planning strategies support the learning process and make it easier, faster, and more effective. The results also indicate that students prioritise certain lexical items rather than trying to learn many unfamiliar words at once. Moreover, the results of the strategy item analysis showed that participants not only prioritise which vocabulary they want to learn but also the aspects of that word, as the second most frequently used planning strategy participants reported using is that they choose the aspects of words which are most important to them, such as spelling, pronunciation, or meaning. These strategies can help students in comprehension and academic performance, as they are frequently required to attend to academic and jargon-specific texts. In line with the study's results, Nation and Gu (2007, p. 31) argued that certain planning strategies may be preferred, as they help learners select which words to focus on and how to study and review them. Interestingly, while participants plan their vocabulary learning to some degree, the results show that they do not schedule and plan time for vocabulary revisions.

The second most frequently reported strategy category that participants use is discovery strategies. Within this category, the most employed strategy was consulting reference tools to look up the meaning of unknown words. Frequent consultation of dictionaries, corpora, word lists, and AI tools indicates that learners prefer to discover the meanings of words independently using external sources. This reasoning aligns with the rest of the outcomes, as

one of the strategies reported to be used least frequently is asking someone they know to discover words' meaning. Moreover, Schmitt (2000, p. 120) found that reference tools are a widely used strategy for meaning discovery as they provide learners with quick and reliable access to lexical information such as meaning, pronunciation, grammatical patterns, and usage examples. Again, given that the participants are tertiary-level English students, these results are consistent with previous research that showed that dictionary use is one of the most commonly used vocabulary learning strategies among advanced language learners (Huang & Eslami, 2013, p. 5). Another reason participants might opt for dictionaries can be found in a previous result, which showed that participants regularly select relevant word aspects, and reference tools can support learners, in finding out more about whatever aspect they choose to focus on. Results also showed that when students do not look up words in reference tools, they guess their meanings from the context, as guessing was the second most frequent discovery strategy. Guessing from context is much less challenging when learners have advanced language skills as they are more likely to understand most of the vocabulary in the text (Nation, 2001, p. 233), notably, to guess successfully, learners must know about 95% of the words in the text (Liu & Nation, 1985, pp. 38-39). Moreover, in the background survey, participants reported high confidence levels in learning new lexical items in formal educational settings, which may also contribute to their independent learning preferences. The third most common discovery strategy was recalling similar words in other languages they knew. This was shown to be a widely used strategy in which learners use their L1 to their advantage when learning a foreign language (Schmitt, 2008, p. 337).

The results from the discovery strategy category also seem to align with those of the third-most-frequently used strategy category, learning strategies. As participants' most favourite discovery strategy was consulting reference sources, it is not surprising that the most frequently used learning strategy was learning translations. Heavy reliance on learning translations is widely popular in vocabulary learning strategy research and reflects students' tendency to establish initial meaning connections through their first language or a language they already know (Janjić et al., 2026, p. 2). Although it is important to keep in mind that translation strategies may facilitate comprehension, existing research suggests that excessive reliance on translation methods may limit deeper lexical processing if it is not complemented by practice and contextual use (Nagodavithana & Premarathne, 2021, p.73). Consequently, "it requires five to sixteen or more repetitions for a word to be learned (Schmitt, 2000, p. 137). In the present study, however, the second most frequent learning strategy used by participants is

deliberately using the words they are trying to learn in their writing. In line with this, the Processing Hypothesis confirmed that repeated attention to and engagement with new words support effective retention (Craik & Lockhart, 1972). Lastly, the third most frequent learning strategy was learning the pronunciation of words. This result indicates that, for tertiary-level EFL English students, pronunciation is an important aspect and that they may aim for a native-like pronunciation, which is a common goal of EFL students (Jenkins, 2000, p. 161). By contrast, personal experience, physical action, phonetic transcription, and learning spelling were the least used vocabulary learning strategies, which can be explained by the fact that learners' vocabulary learning strategy use varies according to language proficiency, learning contexts, and preferences in learning style (Carter, 2012, p. 214).

Lastly, results showed that recording and self-management strategies play a minor role in participants' vocabulary learning routines compared to planning, learning, and discovery strategies. One possible explanation is that in formal educational settings, learning is often structured externally through assignments, deadlines, and assessments. As a result, learners may rely less on internal regulation strategies and instead focus on other techniques for acquiring vocabulary, which is also consistent with participants' reported high levels of confidence in learning new vocabulary.

It is worth noting that the results of the present study are consistent with previous research on vocabulary learning strategy use among university students. Most notably, the findings closely resemble those reported by Ghamarian (2017), whose taxonomy and research context were adopted in the present study. Similar to the current results, Ghamarian (2017) found that discovery strategies were used most frequently, followed by planning strategies, whereas self-management strategies were used least frequently. Similar outcomes have been found in other VLS studies. For instance, Fu (2021) found that Chinese university students most frequently used determination and cognitive strategies, such as dictionary consultation, contextual guessing, and translation learning. Sidhu and Mohamad Nor's (2020) study revealed that students prioritize strategies such as learning spelling, repeating words orally, highlighting vocabulary, and taking notes. In contrast, strategies such as drawing pictures, using physical movement, interacting with native speakers, and mnemonic techniques were not favoured by students.

7.2. RQ2: Extramural English activities

The second research question sought to determine which extramural English activities tertiary-level EFL students engage in. During the analysis, a clear pattern emerged in participants' extramural English engagement, which revealed that they participate in receptive activities such as reading, watching, and listening more frequently than in oral and written practices.

Listening and watching were the most common activities amongst participants, who reported listening to audio and watching diverse English content daily. These high percentages can be attributed to the accessibility of English-language media in digital environments (Hyland, 2004, p. 180). Consequently, streaming platforms, social media content, podcasts, and music have become an integral part of everyday life for many language users (Sockett & Kusyk, 2015, p. 154). The background survey results further support this explanation, as social media was the most frequently mentioned context of English use, followed by watching films or series and listening to audiobooks or podcasts. The overall findings parallel previous research on EE activities, which has shown that social media consumption is a popular source of English engagement among learners (Sundqvist & Sylvén, 2016; Peters, 2018). Reading different media was also among the most frequent extramural English activities. These results align with the findings of the background survey, which showed that reading books, articles, and posts on social media is a popular EE activity among participants.

Although participants reported engaging in productive extramural English activities such as speaking and writing less frequently compared to receptive activities, the results for these activities were still considerably high but more evenly distributed between the scale options *daily* and *few times a week*. One explanation for this outcome is that productive language engagement, especially in extramural settings, often depends on social interaction opportunities and is therefore likely to occur less frequently than, for example, receptive engagement with content on social media. Moreover, research in second language acquisition has shown that productive activities require greater cognitive effort (Nation, 2013, p. 50; Schmitt, 2020, p. 86), which of course does not preclude them from being common leisure activities, albeit more passive leisure activities such as watching films or listening to podcasts appear to take precedence among participants. Hence, a plausible explanation for these findings is that receptive activities do not require specific preparation and are more convenient and even allow of concurrent activities like commuting or exercising. In contrast, speaking and writing

usually require a partner or a communicative purpose and involve more effort than watching or listening to English-language content. Another explanation could be that participants might not consider online activities such as leaving comments under pictures or videos, or chatting with friends to be typical leisure activities, as they often engage in them primarily to stay up to date with others rather than to relax, even if these activities take place during their free time.

Lastly, gaming activities appear to play a comparatively minor role in participants' extramural English habits. This finding diverges from previous studies that have described digital gaming as a popular extramural English practice among learners (Sylvén & Sundqvist, 2012; Peters, 2018; De Wilde et al., 2020). However, this finding was confirmed by the background survey results, which showed that gaming was rarely mentioned as a context for using English, which suggests it may be relevant primarily to a specific cohort.

7.3. RQ3: Reasons for EE use

To find out more about participants' extramural English habits, the third research question sought to ascertain the reasons for which participants engage in extramural English activities. As the results have shown, the three most prominent reasons reported by participants were that they simply feel like using English, that they are interested in how things are in their original form, and, lastly, that they think many things sound better in English.

The first reason, that participants simply feel like using English, shows that they engage with English on their own accord and not due to external factors. The latter aligns with the concept of extramural English, as EE engagement is primarily driven by interest and enjoyment (Sundqvist, 2009, p. 26). Moreover, the findings suggest that participants prefer the original version of the media, which can be explained by the fact that translation and dubbing often result in a loss of originality and changes in meaning. Furthermore, preferring English-language content due to its availability only in English received significantly lower agreement levels than interest in the language reinforcing the idea that participants choose to engage with English content and are not doing so for external reasons. Additionally, a very prevalent reason among participants was that things sound better in English, which further shows that they enjoy English-language content.

Interestingly, although the subsequent reason received lower agreement than the three previously discussed, improving language skills was still more important than expected, as 86% of participants reported engaging in extramural English for this reason. It should be noted that the results for this item were more evenly distributed across the scale options. Nonetheless, the high agreement level is still noteworthy because extramural English is mostly associated with enjoyment (Sundqvist, 2009, p. 26). A possible explanation for this result is that while participants enjoy engaging in extramural English practices as a leisure activity, they may also want to improve their English skills as an additional goal. Since the participants are university students, they are likely aware that exposure to a target language can improve proficiency and that these activities can complement formal language instruction. Overall, the findings of this section clearly mirror the characteristics of extramural English as they show that participants primarily engage in English-language content due to personal interests and inner drives. Nonetheless, as a secondary goal, they aim to benefit from their involvement and obtain advantages in terms of improving their language skills.

7.4. RQ4: VSL use in extramural English contexts

The fourth research question sought to determine whether participants employed vocabulary learning strategies in their extramural English practices. The results have clearly shown that participants utilise vocabulary learning strategies during their extramural English engagement but it needs to be noted that, on average, the frequency of their VLS usage in this setting falls close to the “sometimes” option of the scale. Discovery strategies were reported to be used most frequently, approaching the “often” response category, while the average scores for planning, recording, and learning strategies were close to the “sometimes” frequency, and self-management strategies fell close to “almost never.”

The item-level analysis revealed that in the discovery strategy category, the most common strategy employed by participants is guessing the meaning from the context, followed by attempting to recall a similar word in other languages known to the learners, and lastly, consulting reference sources. In contrast, analysing visuals, ignoring unknown words, and searching for clues were reported less frequently, and asking people they know was the least used strategy in this category. Consequently, it seems that when participants encounter an unknown word while engaging in extramural English activities, they heavily rely on the context and try to guess the meaning of the word, or try to recall the word in a language that they know,

and as a last resort, they look it up in a reference source. A plausible explanation for this result can be found in the reasons for which they engage in extramural English activities. Although it was not the most prominent reason, the majority of the participants reported engaging in extramural activities also to improve their language skills. The dominance of guessing and trying to recall meaning, rather than looking it up, seems to be more in line with EE use for entertainment: trying to comprehend without interrupting reading or watching, making it plausible that these strategies are employed by participants to expand their vocabulary.

Within the second most frequently reported strategy category, namely learning strategies, the item-level analysis revealed that students learn translations of the word and also try to employ the newly learned lexical items in their conversations. These findings parallel previously reported results that students either discover the meaning from context or consult reference sources, suggesting that they learn the translation of the word they have looked up. Moreover, since the students are advanced English students at a tertiary level, it is plausible to assume that they also possess high metalinguistic awareness and know that just encountering and looking up a word does not necessarily lead to long-term retention. Therefore, in order to remember new vocabulary items after they have established their meanings through discovery strategies, they try to use these lexical items in their conversations, as well as in writing.

Furthermore, the item-level analysis of the recording strategies showed that participants do not collect the vocabulary they encounter during their extramural English practices. Instead, they either say it out loud or, less frequently, jot it down randomly without collecting it all in one place. Results also indicate that they sometimes take pictures or screenshots to save vocabulary, perhaps to revisit it later, which again shows their intent to retain these vocabulary items. Regarding the planning strategies, the results are in alignment with the nature of the extramural English setting, as results showed that students do not consciously choose the words they want to learn, which seems plausible because, for instance, if they are watching a movie, they cannot plan for the unknown words that they might encounter during the movie. Instead, the planning strategies they reported using most frequently are considering the aspects of the word that are most important to them, which shows that when they encounter unknown words and look them up or figure out their meaning by trying to guess it from the context, they consider the aspect that they need to focus on the most. Moreover, students reported that they almost never schedule or plan time to revise these vocabulary items, which, of course, can be explained by

the leisure-focused concept of extramural English, which is still primarily a voluntary activity rather than a learning setting (Sundqvist, 2009, p. 26).

Lastly, all self-management strategies were mentioned relatively rarely, which indicates that participants do not monitor their concentration, adjust tasks to avoid boredom, use relaxation techniques, elicit positive emotional responses, or use self-encouragement techniques while engaging in extramural activities of their choice. One possible explanation why participants rely less on such strategies for internal regulation can be found in the background survey, in which they reported high confidence levels in learning new vocabulary in extramural English contexts. Another reason is that EE is inherently enjoyable (Lee et al., 2024, p. 3620) and there is no stress or boredom factor that students need to counteract. Consequently, this may explain the limited use of self-management strategies.

Unfortunately, these results cannot be compared with existing studies, as although there are numerous studies on vocabulary learning strategies and incidental learning, none have yet investigated the use of vocabulary learning strategies in a wide range of extramural English activities. The only existing study aimed at determining which vocabulary learning strategies students use during English-language gaming concluded that guessing, using language references, and taking notes were the most commonly used strategies in extramural gaming (Calafato & Clausen, 2024). However, comparing the present findings with this study would be somewhat misleading, as the latter focused primarily on gaming, whereas in the study at hand, games were the least frequently reported activity among students. Instead, it is worth noting that many studies have focused on incidental vocabulary learning during extramural or out-of-school English practices and have indeed found that vocabulary acquisition in this context is feasible (Horst, 2005; Nguyen, 2023; Santi et al., 2021; Nation & Meara, 2020). At this point, the contrast emerges that, most of the time, extramural English activities are linked to incidental or implicit learning, whereas vocabulary learning strategies are mostly viewed as a conscious or explicit learning process (Schmitt, 2000, p. 121;), as the strategies are employed consciously to facilitate students' learning process (Macaro, 2006, p. 326). However, the results of this study have clearly shown that these two concepts cannot be fully separated, as implicit learning occurs alongside explicit learning to maximise its effectiveness and ensure successful retention. Building on this, previous research has also shown that while implicit learning is possible, effective retention requires students' conscious attention (Pigada & Schmitt, 2006; Nation, 2013; Peters & Webb, 2018; Perez, 2020). Therefore, it can be concluded that “it is

preferable to think in terms of continua from explicit to implicit and from implicit to explicit” (Carter, 2012, p. 204).

7.5. RQ5: Comparing VSL use in FE and EE settings

The main goal of the study at hand was to determine whether participants integrate vocabulary learning strategies employed in formal education into their extramural English practices. Therefore, the findings of the two prior research questions were compared in the last result section, where patterns, including differences and similarities, were identified.

The comparison of the descriptive results on the category level showed that planning strategies are used more frequently in formal educational contexts. A similar pattern emerged within the learning and self-management strategy categories, as the mean values of the respective strategies were higher for educational use. However, an interesting discrepancy emerged within the discovery strategies, as this was the only strategy category in which the mean score was slightly higher for extramural than for educational use. This result may be attributed to the fact that during extramural English engagement, students may encounter unfamiliar words more often, so they rely on strategies such as guessing the meaning from context or looking them up in a reference source. The fact that guessing ranked so highly among discovery strategies could be explained students’ desire to avoid interruptions during their EE activities, leading them to guessing the meaning of unfamiliar words instead. Accordingly, it has been found that discovery strategies play a central role in implicit or incidental vocabulary acquisition (Nation, 2013; Schmitt, 2000).

Although the statistical analysis using a paired *t*-test revealed significant differences across the 5 strategy categories in both language settings, the descriptive analysis showed that, for most strategies, the average values across the two language settings differed by only a small margin. The category that showed the strongest difference was the planning category, which reflects the nature of extramural English, where students cannot plan their vocabulary acquisition due to the unpredictability of new words they might encounter during their English-language engagement. If writing in FE and EE is taken to illustrate this difference, students who receive a writing assignment, for example at university, can already plan in advance which connectors they will use, which vocabulary they should incorporate to make the text more academic. In an educational setting, the goal of such assignments is to submit a linguistically

strong paper. In contrast when writing in EE, for example chatting with friends, the primary aim shifts from linguistic accuracy to information exchange. Therefore, one might assume that the planning factor in the case of EE writing is largely absent.

Interestingly, the item-level comparison showed that, in both settings, the same strategy items within their respective strategic categories were used most frequently, albeit to a lesser extent in the extramural English setting, except for discovery strategies. These findings clearly indicate that participants draw on the same vocabulary learning strategies in their extramural English practice as they do in formal education. Therefore, a clear overlap between the two contexts can be observed. One possible explanation for this is that learners tend to apply strategies in extramural English settings that have already proven effective for them in class. Although the choice of strategies may depend in part on individual learning styles, students are likely to resort to methods they are already accustomed to. This interpretation aligns with Oxford's (1990, p. 12) view that strategy use can develop into automatic behaviours that learners apply without deliberate effort. In line with Oxford (1990, p. 12), Anderson (1983, p. 127) reviewed early research on cognition and language learning psychology and stated that knowledge initially learned deliberately can become proceduralized and automated through repeated use. Consequently, strategies first practiced in classroom environments may later function as habitual responses when learners tackle unfamiliar vocabulary in extramural practices. In essence, if students encounter an unknown word during their extramural English activity, it stands to reason that they will automatically think of the same strategy they would use in a formal educational context to infer or attempt to deduce the meaning of a word. In doing so, they may not even be aware that they are applying a vocabulary learning strategy that they usually employ in formal educational contexts. This could indicate that such strategies become automatic over time and are, with or without students' awareness, integrated into students' extramural English practices. Although the study's results do not allow inference about the extent to which this process occurs with or without students' awareness, the data suggest that strategies used in school can significantly impact students' extramural English engagement.

7.6. Implications and future research

The findings of the study at hand have several implications for foreign language teaching and learning, especially for vocabulary acquisition among tertiary-level EFL learners. The study

has shown that participants already possess a wide repertoire of vocabulary learning strategies and employ them in formal education as well as in extramural English contexts. This suggests that strategy training or teaching how to apply specific strategies, such as vocabulary learning strategies, in class can have long-lasting effects, as the strategies are not limited to school-based use but also form part of informal learning environments. Therefore, teachers could support these practices by explicitly teaching various learning strategies and their use across different contexts, which could help students explore different vocabulary learning strategies and find those that best fit their learning style.

Moreover, the results indicate that extramural English activities have significant potential for vocabulary acquisition. As students already regularly engage with English-language media and activities, teachers could integrate these activities into class in multiple ways. For instance, when working with movies, podcasts, or any other English-language media, teachers could draw students' attention to unfamiliar vocabulary and show them how to use specific vocabulary strategies to determine its meaning, or how to record or practise it to retain it effectively. Building a connection between formal learning process and extramural or everyday language use could encourage students to consciously and continuously improve their language skills by employing these strategies when needed in extramural settings.

Another important aspect that has emerged from the study at hand is that students resort to receptive activities more than productive ones in extramural English practices. Therefore, another aim could be to support learners to transform these receptive activities into productive language use, since research has shown the effectiveness of deliberate attention and practice on retention. This could be achieved, for instance, by showing learners how to actively integrate newly learned vocabulary items into their English-language activities, thereby increasing the likelihood that new vocabulary will be retained for long-term use in their mental lexicon.

Furthermore, research reviewed in this paper has shown showed that both incidental and intentional processes are important for vocabulary acquisition. The results of the study have revealed that students, albeit to a lesser extent than with discovery strategies, attempt to consolidate what they have learnt by consciously using the new words. Consequently, it would be important to direct learners' attention to the fact that they might learn new vocabulary incidentally, but using certain strategies could support their acquisition. Therefore,

opportunities for implicit learning should be sought out, but supplemented with intentional practices such as learning strategies.

Given that, with the exception of Calafato and Clausen's (2024) research, there are hardly any studies that focus on the use of vocabulary learning strategies during extramural English engagement, there is a clear need for further research in this area. Future research could examine learners' level of awareness when resorting to vocabulary learning strategies during encounters with unfamiliar words during extramural English activities. Moreover, future studies could investigate the extent to which the use of VLS in extramural English supports vocabulary acquisition and improves vocabulary size. In addition to survey-based studies, think-aloud protocols, qualitative interviews or learning journals could be employed to learn more about participants' VLS use. Finally, future research could examine whether learners with different proficiency levels use similar vocabulary learning strategies in both contexts.

8. Conclusion

To conclude, this study examined tertiary-level EFL students' vocabulary learning strategy use in formal educational and in extramural English contexts, as well as their extramural English practices, including activities they engage in and the reasons behind them, in order to determine whether the vocabulary learning strategies used in formal education are integrated into their extramural English practices.

Firstly, the results have shown a clear pattern in participants' preferences regarding their vocabulary learning strategy use in formal education. Planning, discovery, and learning strategies were employed particularly frequently, which suggests that they plan their vocabulary learning to a certain extent by selecting which words and word aspects they want to learn. Accordingly, they frequently make use of reference tools, infer meanings from context, and use their L1 to their advantage. In contrast, recording and self-management strategies play a comparatively minor role in participants' vocabulary learning practises.

Secondly, their extramural English use revealed that participants mostly engage in receptive activities such as listening to audio content, watching audiovisual materials, and reading different media. They also speak or write in English in their free time, though significantly less frequently. At the same time, the results have shown that the most prevalent reasons for which

students engage in extramural English activities are primarily connected to the enjoyment of English-language activities, either because the content is originally in English or because they simply feel like using English. Nevertheless, their goal to improve their language skills was also reported as a relevant reason for their EE engagement.

Thirdly, the analysis of vocabulary learning strategies used in extramural contexts showed that participants make use of these strategies outside formal educational contexts. Discovery strategies are particularly frequently used, such as inferring meaning from context or drawing on other known languages. Moreover, learning strategies such as learning translations and using new vocabulary items in conversations are used frequently, while planning, recording, and self-management strategies are employed the least frequently in extramural contexts.

Lastly, the comparison of the vocabulary learning strategies used in formal and extramural English contexts showed that participants mostly used the same strategies in both environments, although less frequently in EE practices. A particularly noteworthy finding was that discovery strategies are an exception in this case, as they are used more frequently in extramural contexts. The most prominent differences were found within the planning strategy category, as students employed them more frequently in formal education, which can be explained by the nature of the learning environment which influence the aims of EE activities. Overall, the results suggest that the vocabulary learning strategies used by participants in class are also applied outside the classroom during extramural English activities.

27466 words

*The thesis was proofread using Grammarly Proofreader (Grammarly, 2024), which is an AI-assisted tool. However, no content was generated by artificial intelligence, all ideas, analyses, and written text are the author's own.

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10. Appendix

10.1. Abstract

The study is concerned with the use of vocabulary learning strategies in formal education and in extramural English settings, and its aim was to examine the extent to which participants integrate vocabulary learning strategies they used in formal education into their extramural English practices. The participants of this study were one hundred students from the Department of English and American Studies of the University of Vienna, who filled in an online questionnaire where information on their vocabulary learning strategy use across both settings, extramural English use, and reasons was gathered. The quantitative results were analysed with SPSS Statistics, and qualitative responses were organised into meaningful categories.

The results showed a clear pattern in participants' preferences regarding their vocabulary learning strategy use in both contexts. Planning, discovery, and learning strategies were employed particularly frequently, while recording and self-management strategies were less prevalent in participants' vocabulary learning practises. Secondly, their extramural English use revealed that participants preferred receptive activities, such as listening to audio content, watching audiovisual materials, and reading various media, over productive activities, such as speaking or writing. At the same time, the results have shown that the most prevalent reasons for which students engage in extramural English activities are primarily connected to the enjoyment of English-language activities, and they also aim to improve their language skills. Lastly, the comparison of the vocabulary learning strategies used in formal and extramural English contexts showed that participants mostly used the same strategies in both settings, although, on average, less frequently in extramural English contexts.

The results suggest that students in the Department of English and American Studies at the University of Vienna use vocabulary learning strategies in formal education. Furthermore, the findings revealed that the vocabulary learning strategies employed in class are also integrated outside the classroom during extramural English activities. The results suggest that the learning strategies used in the classroom are transferred to other learning environments, therefore, additional research is needed to investigate this relationship in greater detail.

10.2. Zusammenfassung

Die Studie befasst sich mit dem Einsatz von Strategien zum Vokabellernen im formalen Unterricht und im Kontext des extramuralen Englisch. Ihr Ziel war es, zu untersuchen, inwieweit die Teilnehmer Strategien zum Vokabellernen, die sie im formalen Bildungswesen angewandt haben, in ihre extramuralen Englischpraktiken integrieren. Die Teilnehmer dieser Studie waren hundert Studierende des Instituts für Anglistik und Amerikanistik der Universität Wien, die einen Online-Fragebogen ausfüllten, in dem Informationen über den Einsatz ihrer Vokabellernstrategien in beiden Kontexten, den extramuralen Gebrauch der englischen Sprache sowie deren Zwecke erfasst wurden. Die quantitativen Ergebnisse wurden mit SPSS Statistics analysiert, und die qualitativen Antworten wurden in sinnhafte Kategorien gegliedert.

Die Ergebnisse zeigten in beiden Kontexten ein klares Muster hinsichtlich der Präferenzen der Teilnehmenden bei der Anwendung ihrer Strategien zum Vokabellernen. Planungs-, Entdeckungs- und Lernstrategien wurden besonders häufig eingesetzt, während Aufzeichnungs- und Selbstmanagementstrategien in den Vokabellernpraktiken der Teilnehmenden weniger verbreitet waren. Zweitens zeigte sich bei der Nutzung der englischen Sprache außerhalb des Unterrichts, dass die Teilnehmenden rezeptive Aktivitäten wie das Anhören von Audioinhalten, das Anschauen von audiovisuellen Materialien und das Lesen verschiedener Medien gegenüber produktiven Aktivitäten wie Sprechen oder Schreiben bevorzugten. Gleichzeitig haben die Ergebnisse gezeigt, dass die häufigsten Gründe, aus denen Studierende an extramuralen Englischaktivitäten teilnehmen, in erster Linie mit dem Vergnügen an englischsprachigen Aktivitäten zusammenhängen und dass sie zudem darauf abzielen, ihre Sprachkenntnisse zu verbessern. Schließlich zeigte der Vergleich der im formalen und im extramuralen Englischkontext verwendeten Vokabellernstrategien, dass die Teilnehmenden in beiden Umgebungen meist dieselben Strategien nutzten, wenn auch im Durchschnitt seltener im extramuralen Englischkontext.

Die Ergebnisse deuten darauf hin, dass die im Unterricht eingesetzten Strategien zum Vokabellernen auch außerhalb des Unterrichts bei extramuralen Englischaktivitäten zum Einsatz kommen. Die Ergebnisse lassen vermuten, dass die im Unterricht verwendeten Lernstrategien auf andere Lernumgebungen übertragen werden, daher sind weitere Untersuchungen erforderlich, um diesen Zusammenhang genauer zu untersuchen.

10.3. Questionnaire

1. Background information

- 1) Age: _____
- 2) Gender
☐ Male ☐ Female ☐ Non-binary ☐ Prefer not to say
- 3) Which degree programme are you currently enrolled in?
☐ BA - English and American Studies
☐ MA - Anglophone Literatures and Cultures
☐ MA - English Language and Linguistics
☐ Bed - Bachelor of Education UF English
☐ Med - Master of Education UF English
☐ PhD - Doctoral Programme in Humanities, Philosophy and Education
- 4) Which languages do you know? (Please list them in chronological order from birth; for your first language, L1, you can give more than one if you grew up in a multilingual family: L1a, L1b), “knowing” means the ability to have at least a basic exchange in the language)
L1a: _____ L1b: _____ L1c: _____
L2: _____ L3: _____ L4: _____
- 5) How would you rate the overall size of your English vocabulary compared to your peers?
☐ 1: Very limited
☐ 2: Limited
☐ 3: Moderate
☐ 4: Extensive
☐ 5: Very extensive
- 6) To what extent do you feel confident in your ability to learn new English vocabulary in academic contexts?
☐ 1: Not at all confident
☐ 2: Slightly confident
☐ 3: Moderately confident
☐ 4: Quite confident
☐ 5: Extremely confident
- 7) To what extent do you feel confident in your ability to learn new English vocabulary in extramural contexts?
☐ 1: Not at all confident
☐ 2: Slightly confident
☐ 3: Moderately confident
☐ 4: Quite confident
☐ 5: Extremely confident
- 8) Please think about your everyday life, where do you use English the most?
1: _____ 2: _____ 3: _____
- 9) Have you ever lived in an English-speaking country?
☐ I have lived in an English-speaking country for three months or more.
☐ I have never lived in an English-speaking country before

2. Vocabulary learning strategies IN FORMAL EDUCATION

The following questions focus specifically on **STRATEGIES USED IN FORMAL EDUCATION SETTINGS**. This includes any materials you read, write, listen to, watch, or study as part of your courses or lectures. When answering this section, please consider only university-related materials and **VOCABULARY LEARNING STRATEGIES YOU APPLY WITHIN YOUR EDUCATIONAL CONTEXT**.

a) Planning vocabulary learning in formal education

The following section describes planning strategies that can be used for vocabulary learning. Read each statement and mark the option on the scale that best suits you.

	never	rarely	sometimes	often	almost always	always
1. I consciously choose the words I want to learn.	1	2	3	4	5	6
2. I consider the aspects of a word which are most important to me (e.g. spelling, pronunciation, meaning...)	1	2	3	4	5	6
3. I use a big repertoire of vocabulary learning strategies.	1	2	3	4	5	6
4. I know how to choose, adapt and combine my vocabulary learning strategies.	1	2	3	4	5	6
5. I schedule and plan time for my vocabulary revisions.	1	2	3	4	5	6
6. I open the tools I use (e.g. dictionaries, AI, thesaurus...) in advance in case I need to look up any words.	1	2	3	4	5	6

→Other strategy/ies that I use for planning: _____

b) Recording vocabulary in formal education

The following section describes recording strategies that can be used for learning vocabulary. Read each statement and mark the option on the scale that best suits you.

	never	rarely	sometimes	often	almost always	always
1. I do NOT record vocabulary in an organised form. I just learn it by saying it out loud.	1	2	3	4	5	6
2. I do NOT record vocabulary in an organised form. I just learn it by jotting it down randomly, without collecting them all in one place.	1	2	3	4	5	6
3. I collect vocabulary in an organised form (e.g. word list, flash cards, stick sheets, vocabulary log)	1	2	3	4	5	6
4. I record audio clips or voice memos to collect vocabulary.	1	2	3	4	5	6
5. I take pictures or screenshots to collect vocabulary.	1	2	3	4	5	6

→Other strategy/ies that I use for recording: _____

c) Discovering the meaning of an unknown word in formal education

The following section describes strategies that can be used to discover the meaning of an unknown word. Read each statement and mark the option that best suits you.

	never	rarely	sometimes	often	almost always	always
1. I guess its meaning from the context.	1	2	3	4	5	6
2. I try to recall a similar word in other languages I know.	1	2	3	4	5	6
3. I analyse available resources (e.g. illustrations, visuals...).	1	2	3	4	5	6
4. I consult a reference source (e.g. monolingual /bilingual dictionary, language corpus, word lists, Thesaurus, AI...)	1	2	3	4	5	6
5. I simply ignore or skip the unknown word.	1	2	3	4	5	6
6. I look for defining words or phrases in the rest of the source material.	1	2	3	4	5	6
7. I ask somebody I know (e.g. friends, family, peers, professors...).	1	2	3	4	5	6

→Other strategy/ies that I use for discovering the meaning of an unknown word: _____

d) Learning vocabulary in formal education

The following section describes vocabulary learning strategies that can be used. Read each statement and mark the option that best suits you.

	never	rarely	sometimes	often	almost always	always
1. I learn words in combination with any kind of visual representation (e.g. pictures, drawings...).	1	2	3	4	5	6
2. I use semantic mapping systems, such as a mind map or clustering.	1	2	3	4	5	6
3. I learn a word together with its semantic (lexical) relations (e.g. synonyms, antonyms)	1	2	3	4	5	6
4. I paraphrase (reword) the word I want to learn.	1	2	3	4	5	6
5. I learn its translation.	1	2	3	4	5	6
6. I learn collocations and colligations for a new word.	1	2	3	4	5	6
7. I connect the word with a personal experience to remember it.	1	2	3	4	5	6
8. I use physical action to remember a word (e.g. movement, dance...).	1	2	3	4	5	6
9. I try to remember the word in the context in which I encountered it.	1	2	3	4	5	6
10. I learn its spelling specifically.	1	2	3	4	5	6
11. I learn its pronunciation.	1	2	3	4	5	6
12. I learn its phonetic transcription.	1	2	3	4	5	6
13. I deliberately use the word(s) I'm trying to learn in conversations.	1	2	3	4	5	6
14. I deliberately use the word(s) I'm trying to learn in my writing.	1	2	3	4	5	6
15. I deliberately seek out and engage with materials (e.g. videos, music, articles) that may contain the word(s) I'm trying to learn.	1	2	3	4	5	6

→Other strategy/ies that I use for vocabulary learning: _____

e) Self-management strategies in formal education

The following section describes self-management strategies that can be used for vocabulary learning. Read each statement and mark the option that best suits you.

	never	rarely	sometimes	often	almost always	always
1. I set personal vocabulary-learning goals.	1	2	3	4	5	6
2. I remind myself of the value of building my vocabulary.	1	2	3	4	5	6
3. I monitor my concentration while learning vocabulary to ensure its effectiveness.	1	2	3	4	5	6
4. I adapt tasks to avoid boredom when learning vocabulary.	1	2	3	4	5	6
5. I use relaxation techniques to help me learn vocabulary.	1	2	3	4	5	6
6. I try to generate positive emotional reactions when learning vocabulary.	1	2	3	4	5	6
7. I use self-encouragement techniques when learning vocabulary.	1	2	3	4	5	6

→Other strategy/ies that I use for self-management: _____

3. Extramural English activities

Please indicate how frequently you engage in the following extramural English activities outside of formal education (school, courses, or lectures). For each activity listed below, select the frequency that best matches your experience, ranging from (almost) never to every day.

	(almost) never	a few times a year	once a month	a few times a month	once a week	a few times a week	every day
1. Reading (e.g. books, e-books, articles, content on social media, comics, poetry, stories, fanfiction, lyrics, blogs, online shopping websites...)	1	2	3	4	5	6	7
2. Watching (e.g. TV, movies, series, documentaries, comedy shows, YouTube, content on social media, cinema, theatre plays...)	1	2	3	4	5	6	7
3. Listening (e.g. to music, the radio, podcasts, audio books, concerts...)	1	2	3	4	5	6	7
4. Writing (e.g. messages, e-mails, poetry, stories, comics, songs, content on social media, in-game chats...)	1	2	3	4	5	6	7
5. Speaking (e.g. in person, online, in gaming)	1	2	3	4	5	6	7
6. Playing (e.g. board games, video or computer games, games on your smartphone or tablet...)	1	2	3	4	5	6	7

I make use of other activities, namely: _____

4. Reasons for engaging in extramural English activities

In this section, you'll find several statements regarding your reasons and motivations for engaging with the English language outside of formal education. Please indicate your level of agreement with each statement using the following agreement scale:

	strongly agree	agree	somewhat agree	disagree	strongly disagree
1. Many things are only available in English (at least temporarily).	1	2	3	4	5
2. I need English for international contacts and friendships.	1	2	3	4	5
3. I want to improve my English skills.	1	2	3	4	5
4. I am interested in how things are in their original form (e.g., films, books, songs, TV shows, video games...).	1	2	3	4	5
5. Many things sound better in English.	1	2	3	4	5
6. I simply feel like using English.	1	2	3	4	5

I have other reasons, namely: _____

5. Vocabulary learning strategies in extramural English practices

The following questions address **STRATEGIES YOU USE IN RECREATIONAL SETTINGS**, such as when engaging with English-language media, online content, entertainment, or social interactions. When completing this section, please consider only those vocabulary learning **STRATEGIES THAT YOU USE DURING THE EXTRAMURAL ENGLISH ACTIVITIES YOU INDICATED IN THE PREVIOUS QUESTION.**

a) Planning vocabulary learning in extramural English settings

The following section describes planning strategies that can be used for vocabulary learning. Read each statement and mark the option on the scale that best suits you.

	never	rarely	sometimes	often	almost always	always
1. I consciously choose the words I want to learn.	1	2	3	4	5	6
2. I consider the aspects of a word which are most important to me (e.g. spelling, pronunciation, meaning...)	1	2	3	4	5	6
3. I use a big repertoire of vocabulary learning strategies.	1	2	3	4	5	6
4. I know how to choose, adapt and combine my vocabulary learning strategies.	1	2	3	4	5	6
5. I schedule and plan time for my vocabulary revisions.	1	2	3	4	5	6
6. I open the tools I use (e.g. dictionaries, AI, thesaurus...) in advance in case I need to look up any words.	1	2	3	4	5	6

→Other strategy/ies that I use for planning: _____

b) Recording vocabulary in extramural English settings

The following section describes recording strategies that can be used for learning vocabulary. Read each statement and mark the option on the scale that best suits you.

	never	rarely	sometimes	often	almost always	always
1. I do NOT record vocabulary in an organised form. I just learn it by saying it out loud.	1	2	3	4	5	6
2. I do NOT record vocabulary in an organised form. I just learn it by jotting it down randomly, without collecting them all in one place.	1	2	3	4	5	6
3. I collect vocabulary in an organised form (e.g. word list, flash cards, stick sheets, vocabulary log)	1	2	3	4	5	6
4. I record audio clips or voice memos to collect vocabulary.	1	2	3	4	5	6
5. I take pictures or screenshots to collect vocabulary.	1	2	3	4	5	6

→Other strategy/ies that I use for recording: _____

c) Discovering the meaning of an unknown word in extramural English settings

The following section describes strategies that can be used to discover the meaning of an unknown word. Read each statement and mark the option that best suits you.

	never	rarely	sometimes	often	almost always	always
1. I guess its meaning from the context.	1	2	3	4	5	6
2. I try to recall a similar word in other languages I know.	1	2	3	4	5	6
3. I analyse available resources (e.g. illustrations, visuals...).	1	2	3	4	5	6
4. I consult a reference source (e.g. monolingual /bilingual dictionary, language corpus, word lists, Thesaurus, AI...)	1	2	3	4	5	6
5. I simply ignore or skip the unknown word.	1	2	3	4	5	6
6. I look for defining words or phrases in the rest of the source material.	1	2	3	4	5	6
7. I ask somebody I know (e.g. friends, family, peers, professors...).	1	2	3	4	5	6

→Other strategy/ies that I use for discovering the meaning of an unknown word: _____

d) Learning vocabulary in extramural English settings

The following section describes vocabulary learning strategies that can be used. Read each statement and mark the option that best suits you.

	never	rarely	sometimes	often	almost always	always
1. I learn words in combination with any kind of visual representation (e.g. pictures, drawings...).	1	2	3	4	5	6
2. I use semantic mapping systems, such as a mind map or clustering.	1	2	3	4	5	6
3. I learn a word together with its semantic (lexical) relations (e.g. synonyms, antonyms)	1	2	3	4	5	6
4. I paraphrase (reword) the word I want to learn.	1	2	3	4	5	6
5. I learn its translation.	1	2	3	4	5	6
6. I learn collocations and colligations for a new word.	1	2	3	4	5	6
7. I connect the word with a personal experience to remember it.	1	2	3	4	5	6
8. I use physical action to remember a word (e.g. movement, dance...).	1	2	3	4	5	6
9. I try to remember the word in the context in which I encountered it.	1	2	3	4	5	6
10. I learn its spelling specifically.	1	2	3	4	5	6
11. I learn its pronunciation.	1	2	3	4	5	6
12. I learn its phonetic transcription.	1	2	3	4	5	6
13. I deliberately use the word(s) I'm trying to learn in conversations.	1	2	3	4	5	6
14. I deliberately use the word(s) I'm trying to learn in my writing.	1	2	3	4	5	6
15. I deliberately seek out and engage with materials (e.g. videos, music, articles) that may contain the word(s) I'm trying to learn.	1	2	3	4	5	6

→Other strategy/ies that I use for vocabulary learning: _____

e) Self-management strategies in extramural English settings

The following section describes self-management strategies that can be used for vocabulary learning. Read each statement and mark the option that best suits you.

	never	rarely	sometimes	often	almost always	always
1. I set personal vocabulary-learning goals.	1	2	3	4	5	6
2. I remind myself of the value of building my vocabulary.	1	2	3	4	5	6
3. I monitor my concentration while learning vocabulary to ensure its effectiveness.	1	2	3	4	5	6
4. I adapt tasks to avoid boredom when learning vocabulary.	1	2	3	4	5	6
5. I use relaxation techniques to help me learn vocabulary.	1	2	3	4	5	6
6. I try to generate positive emotional reactions when learning vocabulary.	1	2	3	4	5	6
7. I use self-encouragement techniques when learning vocabulary.	1	2	3	4	5	6

→Other strategy/ies that I use for self-management: _____

If there are any additional insights, reflections, or perspectives regarding vocabulary learning strategies in both settings or extramural English practices in general, that you wish to share, please elaborate further: _____

Thank you for your participation!