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**SYNTACTIC KNOWLEDGE VS. VOCABULARY KNOWLEDGE:
WHICH ONE PREDICTS TURKISH EFL STUDENTS' L2
READING COMPREHENSION BETTER?**

YÜKSEK LİSANS TEZİ

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ETİK SÖZLEŞME

Tokat Gaziosmanpaşa Üniversitesi Lisansüstü Eğitim Enstitüsü tez yazım kılavuzuna göre, Dr. Öğr. Üyesi Zafer SUSOY danışmanlığında hazırlamış olduğum “Syntactic Knowledge vs. Vocabulary Knowledge: Which One Predicts Turkish EFL Students’ L2 Reading Comprehension Better?” adlı Yüksek Lisans tezinin bilimsel etik değerlere ve kurallara uygun, özgün bir çalışma olduğunu, aksinin tespit edilmesi halinde her türlü yasal yaptırımını kabul edeceğimi beyan ederim.

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ÖZET

YAPI BİLGİSİ Mİ YOKSA KELİME BİLGİSİ Mİ? HANGİSİ İNGİLİZCEYİ YABANCI DİL OLARAK ÖĞRENEN TÜRK ÖĞRENCİLERİN İNGİLİZCE OKUDUĞUNU ANLAMA BECERİSİNİ DAHA İYİ YORDUYOR?

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Bu çalışma, temel dilbilimsel bilgi alanlarının Türk üniversite öğrencilerinin ikinci dilde (L2) okuduğunu anlama becerileri üzerindeki göreceli yordama gücünü araştırmaktadır. Araştırmanın odağında söz varlığı kapsamı (kelime bilgisi genişliği), söz varlığı derinliği (çokanlamlılık, eşdizimlilik ve anlamsal ilişkiler gibi nitelik boyutu) ve sözdizim (yapı) bilgisi yer almaktadır. Nicel, kesitsel ve yordayıcı-korelasyonel bir desen benimsenmiştir. Türkiye’de bir devlet üniversitesinin farklı bölümlerinde öğrenim gören ve ana dili Türkçe olan lisans öğrencilerinden oluşan geniş bir örneklemle çalışılmıştır. Veri toplama süreci, dört hafta boyunca düzenli ders saatlerinde, her hafta bir ölçme aracı uygulanacak şekilde yürütülmüştür. İlk hafta söz varlığı kapsamını ölçen bir test, ikinci hafta söz varlığı derinliğini ölçen bir ilişkilendirme testi, üçüncü hafta sözdizim bilgisini ölçen standartlaştırılmış bir dilbilgisi testi ve dördüncü hafta da okuduğunu anlama performansını ölçen bir okuma testi uygulanmıştır. Uygulamalarda ortak yönergeler izlenmiş, süreler denetlenmiş ve sınav güvenliği sağlanmıştır. Analitik aşamada, önce değişkenlerin dağılımlarını özetlemek için betimsel istatistikler sunulmuş, ardından değişkenler arası ilişkileri görmek üzere korelasyonlar incelenmiştir. Son aşamada, her bir yordayıcı değişkenin okuduğunu anlama üzerindeki özgül ve artımsal katkısını görmek amacıyla hiyerarşik çoklu doğrusal regresyon kullanılmıştır. Bulgular, okuduğunu anlama ile söz varlığı kapsamı, söz varlığı derinliği ve sözdizim bilgisi arasında anlamlı ve olumlu ilişkiler bulunduğunu göstermektedir. Modellerin karşılaştırılması, sözdizim bilgisinin okuduğunu anlama düzeyinin en önemli yordayıcısı olduğunu; bununla birlikte, söz varlığı kapsamı ve söz varlığı derinliğinin de birbirini tamamlayan bağımsız katkılar sunduğunu ortaya koymuştur. Sonuçlar, İngilizce okuma öğretiminde yalnızca kelime sayısını artırmaya odaklanmak yerine, kelime bilgisinin nitel

derinliğini geliřtiren etkinlikleri ve sözdizimsel çözümlmeyi güçlendiren uygulamaları bütünleřtiren dengeli bir yaklaşımın daha etkili olacağını işaret etmektedir. Bulgular, program geliřtirme, ölçme-değerlendirme ve yerleřtirme süreçlerine dönük pratik öneriler sağlamanın yanı sıra, Türk EFL bağlamında dilsel bilgi bileřenlerinin görel rollerine ilişkin geniş bir örneklemden elde edilen güncel kanıtlar sağlamaktadır.

Anahtar Kelimeler: Söz Varlığı Kapsamı; Söz Varlığı Derinliği; Sözdizim Bilgisi; Okuduğunu Anlama; İngilizce Eğitimi.



ABSTRACT

SYNTACTIC KNOWLEDGE VS. VOCABULARY KNOWLEDGE: WHICH ONE PREDICTS TURKISH EFL STUDENTS' L2 READING COMPREHENSION BETTER?

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This study investigates the relative predictive power of key linguistic knowledge domains on the L2 reading comprehension of Turkish university students. The investigation focuses on three dimensions: vocabulary size (breadth), vocabulary depth (qualitative aspects such as polysemy, collocation, and semantic relations), and syntactic knowledge. A quantitative, cross-sectional, predictive correlational design was adopted. The research was conducted with a large sample of undergraduate students whose first language is Turkish and who study in different departments at a public university in Türkiye. Data were collected over four consecutive weeks during regular class hours by administering one instrument per week. In the first week, a vocabulary size test was administered; in the second week, an association-based vocabulary depth test; in the third week, a standardized grammar (syntax) test; and in the fourth week, a reading comprehension test. Common administration procedures were followed, time limits were controlled, and test security was ensured. Analytically, the study first summarized the distributions of the variables with descriptive statistics and then examined relationships among them using correlations. Finally, hierarchical multiple linear regression was employed to assess the specific and incremental contributions of each predictor to reading comprehension. The findings indicate meaningful and positive relationships between reading comprehension and all three predictors. Model comparisons show that syntactic knowledge was the most significant unique predictor of reading comprehension levels; nevertheless, vocabulary size and vocabulary depth also made independent, complementary contributions. These results suggest that, rather than focusing solely on increasing the number of known words, a balanced instructional approach integrating activities that enrich the qualitative depth of lexical knowledge and strengthen syntactic analysis in reading is likely to be more

effective. Beyond offering practical implications for curriculum design, assessment, and placement, the study provides contemporary evidence drawn from a large sample regarding the relative roles of linguistic knowledge components in the Turkish EFL context.

Keywords: Vocabulary Size; Vocabulary Depth; Syntactic Knowledge; Reading Comprehension; English Language Education.



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LIST OF ABBREVIATIONS

L1: First Language

L2: Second Language

EFL: English as a Foreign Language

ESL: English as a Second Language

EAP: English for Academic Purposes

SVR: Simple View of Reading

VST: Vocabulary Size Test

WAT: Word Associates Test

SKT: Syntactic Knowledge Test

RCT: Reading Comprehension Test

TOEFL: Test of English as a Foreign Language

YKS: Higher Education Institutions Exam

YDT: Foreign Language Test (within YKS)

ÖSYM: Student Selection and Placement Center

CHAPTER I

INTRODUCTION

Background of the Study

The world is changing quickly, especially in business, science, international communication, and education. This progress has made English the de facto global language of communication (Crystal, 2003). English is not only the main language of many countries, but it is also widely used as a second language in many others. Because it is spoken all over the world, billions of people want to learn it so they can do better in school and the workplace (Graddol, 2006). English is the main language used in academic areas such as scholarly journals and higher education (Hyland, 2006). Because of this, being able to speak and write English well is necessary to access a huge amount of academic information and be a part of the global community of scholars. The popularity of English has made it more important to teach English at all stages of education in countries where English is not the first language, such as Türkiye. It is now a core subject from elementary school through university. Numerous Turkish universities now offer programs that are taught entirely in English or require students to use textbooks and other instructional materials that are written in English. This shows how important it is to be able to communicate clearly in English in school (Kırkgöz, 2009).

Millions of students in Türkiye are taught English as a foreign language (EFL), and being able to speak and write English well is often seen as necessary for success in school and in the workplace. However, learning outcomes, especially in reading, often fall short of expectations, even though students are taught a lot at all stages of their education. As an example, the average score on the English part of the Foreign Language Test (YDT) for the 2025 national university entrance test (YKS) was 35.09 out of 80, which means that only 43.86% of the questions were answered correctly (ÖSYM, 2025). This finding shows that Turkish EFL (English as a Foreign Language) students may have a serious problem with their reading comprehension skills. Additionally, Türkiye regularly scores lower than many other countries on international tests of English proficiency, which makes educators and policymakers even more concerned (Sendur & Kılıçkaya, 2024). These results show how important it is to improve students' English

reading skills in Turkish EFL classes right away, especially since students are reading more difficult academic books at the college level.

Reading comprehension in L2 is a complex cognitive process that requires a lot of different kinds of information and skills. To understand English as L2, decoding and interpreting text are not enough; additional language skills (especially vocabulary and grammar), as well as higher-level strategies, are also needed (Grabe & Stoller, 2011; Koda, 2005). Vocabulary knowledge and syntactic knowledge stand out among the main linguistic components which contribute to reading success. Vocabulary knowledge helps readers figure out what words mean individually, a key step in understanding phrases, sentences, and whole texts. On the other hand, syntactic knowledge helps readers understand how sentences are put together and how words and clauses relate to each other grammatically. This is especially important when understanding complicated syntax constructions.

Not knowing enough words can make it very difficult to understand because too many unknown words make it hard to figure out what the text means. On the other hand, not knowing enough about syntax can lead to misinterpretation of sentence structure, even when the individual word meanings are known (Alderson, 2000). Vocabulary and syntax work together to help readers understand what they read; they are the building blocks of linguistic knowledge.

There is a substantial amount of research that supports this point of view. It has been shown that vocabulary knowledge is strongly linked to reading comprehension success (Anderson & Freebody, 1981; Nation, 2001). Studies show that students need to know about 95% of the words in a book in order to understand it, and about 98% in order to read quickly and independently (Hu & Nation, 2000; Schmitt et al., 2011). To get this level of vocabulary coverage, a vocabulary size of several thousand-word families is required, which is a common goal for many EFL students.

At the same time, understanding of syntax was also found to be a key factor in reading comprehension. To understand complex texts a reader must know certain syntactic patterns and be able to process them (Alderson, 2000). Empirical evidence supports this perspective. In a study of 254 Turkish college students learning English as L2, Taşçı and Turan (2021) found that knowing how to use grammar rules correctly was

the best predictor of reading comprehension scores for high-proficiency readers and generally the best predictor for the overall group. It explained more variance than vocabulary depth or breadth, even though all three were significantly linked. According to that study, vocabulary breadth was more critical for intermediate and low-proficiency readers. However, the findings also suggest that poor grammar skills can significantly hinder comprehension (even when vocabulary knowledge is sufficient).

These results are also supported by large-scale and meta-analytical research alike. Structural-equation modeling conducted by Shiotsu and Weir (2007) using data from their main study with 591 Japanese university students (from an initial sample of 624, which was reduced to 599 after some exclusions), revealed that when vocabulary was taken into account, grammar understanding still had a strong direct effect on reading comprehension. Specifically, this strong direct effect, with a beta value of $\beta = 0.62$, was observed for the lower achievers subgroup ($n = 245$) within their study. For the full sample ($n=591$), the regression weight for syntax was 0.64. In line with these findings, a recent meta-analysis by Zheng et al. (2023) synthesizing 86 studies and 14,852 readers, found a strong overall correlation between syntactic knowledge and reading comprehension. However, the strength of this link significantly increased from lower to higher grade groups. These findings, taken together, highlight the main role of grammar in successful reading: even when vocabulary barriers are removed, insufficient syntactic competence can still impede comprehension, whereas strong syntactic knowledge consistently contributes independently to comprehension outcomes.

Successful reading comprehension in a L2 requires both vocabulary and syntactic knowledge. This makes it hard to say which is more important for understanding, especially in EFL settings such as Türkiye. This argument, which puts language-specific knowledge against more general reading skills, has been at the heart of L2 reading study for more than forty years (Jeon & Yamashita, 2014). A substantial body of research has attempted to quantify the relative contributions of vocabulary and syntactic knowledge to L2 reading comprehension, as demonstrated by studies conducted by Jeon and Yamashita, (2014), Laufer, (1992), Shiotsu & Weir, (2007), Zhang, (2012). However, despite the volume of existing studies, findings remain inconclusive and often contradictory, with some such as Nation, (2006) and Stæhr, (2008) prioritize vocabulary size and others like Shiotsu and Weir (2007) highlight the superior predictive power of

syntactic knowledge. Furthermore, very few studies have integrated vocabulary breadth, vocabulary depth, and syntactic knowledge within a single research design to isolate their unique effects. This study aims to fill this empirical gap by investigating these three dimensions collectively, specifically within the under-researched context of Turkish EFL learners, whose instructional background often differs from the populations in previous major studies. A great deal of research has shown that vocabulary knowledge, one dimension of which is vocabulary breadth or size, is the best indicator of reading success in L2. Several studies in EFL contexts such as Laufer (1992), Hu and Nation (2000), and Nation (2006) have shown that vocabulary size is strongly linked to reading proficiency. Based on such findings, some researchers argue that reading tests function largely as vocabulary tests in disguise. A meta-analysis by Jeon and Yamashita (2014) offers a comprehensive view. They combined information from numerous studies and identified that L2 vocabulary knowledge and L2 syntactic knowledge are two of the strongest correlations and high-evidence skills for reading comprehension in a second language. While these skills are generally crucial, they found through moderator analyses that the correlation between L2 vocabulary knowledge and L2 reading comprehension was higher for older (adolescent and adult) L2 readers than for children. The average correlation observed between L2 reading comprehension and L2 syntactic knowledge was $r = 0.85$, which was numerically a little higher than the correlation with L2 vocabulary knowledge, which was $r = 0.79$. However, despite this slight numerical difference, they explicitly concluded that syntactic knowledge and vocabulary knowledge are equally important correlates of L2 reading comprehension because the observed difference was weak.

However, apart from this meta-analytic evidence suggesting equal importance, the broader literature on the relative contributions of vocabulary and syntactic knowledge to L2 reading comprehension presents mixed and often inconclusive findings. Some studies indicate vocabulary knowledge as a more influential predictor of L2 reading comprehension (e.g., (Laufer B. , 1992); (Nation, 2006); (Jeon & Yamashita, 2014)), while others suggest that syntactic knowledge plays a stronger role, particularly for learners with intermediate proficiency levels (e.g., (Alderson, 2000); (Shiotsu & Weir, 2007)). This discrepancy is clearly illustrated by empirical studies yielding contrasting results. In a study of Japanese college students learning English as L2, Shiotsu and Weir (2007) discovered that syntactic knowledge had a bigger impact on reading comprehension than vocabulary knowledge. Their regression analysis showed that

syntactic knowledge explained a little more variance in reading scores, which led them to argue that syntactic knowledge may take precedence in some situations. On the other hand, Zhang (2012) looked into advanced Chinese EFL learners using separate tests for vocabulary breadth, vocabulary depth, and syntactic knowledge. He found that vocabulary knowledge had a significant positive effect on reading comprehension, whereas the unique effect of syntactic knowledge dropped to non-significance once the influence of vocabulary was statistically controlled. In other words, in the structural equation model of Zhang (2012), vocabulary (breadth and depth combined) remained a strong predictor of reading, but syntax did not contribute significantly after accounting for vocabulary. Syntactic knowledge, on the other hand, had a mostly secondary or overshadowed effect. These different results show that the relative predictive power of vocabulary versus syntactic knowledge may change depending on the student, their level of proficiency, and the way they are measured. In some situations, having a large vocabulary knowledge might compensate for average syntactic knowledge, and in others, having good syntactic knowledge might help make up for a limited vocabulary knowledge. Usually, the two sets of knowledge work hand-in-hand. In fact, vocabulary size and syntactic skill are often linked; language learners with larger vocabularies have likely had more exposure to language, which may have helped their grammatical intuition, and vice versa. This is why the results of different studies were mixed and sometimes contradictory about which factor is more important for L2 reading (Zhang, 2012).

It is particularly evident when people are learning English as L2. EFL students from different countries or at different levels of skill may have different profiles. It is especially important to find out how grammar rules and vocabulary memorization help with reading comprehension in the Turkish EFL setting, where English lessons have traditionally put much emphasis on memorizing words and grammar rules (often at the expense of speaking and understanding). When vocabulary knowledge proves to be the stronger predictor for Turkish students, the focus of teaching should shift toward expanding both the breadth and depth of learners' vocabularies. On the other hand, when syntactic knowledge emerges as equally or even more influential, emphasizing grammar instruction in schools becomes a sensible approach. However, there needs to be a way to make sure that syntactic knowledge is used correctly when reading. To sum up, knowing how vocabulary and grammar work differently in reading can help educators understand

why some Turkish EFL students have trouble reading and help come up with better ways to teach them.

In light of this, the goal of this study was to determine the extent to which vocabulary knowledge and syntactic knowledge predict L2 reading comprehension among Turkish EFL university students. This study is based on an extensive number of undergraduate students and looks at two types of vocabulary knowledge: vocabulary size (breadth) and vocabulary depth. It also looks at syntactic knowledge. The study investigates which part of linguistic knowledge best predicts how well someone will understand what they read in English by looking at these concepts at the same time. The background information given above shows how important English reading skills are on a local and global level, why it is important to focus on vocabulary and syntax, and how mixed study results are at the moment. This allows for a more in-depth look at the problem, goal, and importance of this study.

Statement of the Problem

While the importance of vocabulary and syntactic knowledge in L2 reading is well established globally, their relative contributions remain a matter of debate, particularly within the Turkish EFL context. In Türkiye, English instruction has often been characterized by a strong emphasis on explicit grammar teaching and the memorization of vocabulary, a pattern that has shaped classroom practices for many years. Despite this intensive instruction, many Turkish university students continue to demonstrate poor reading comprehension performance on national exams and struggle with academic texts (ÖSYM, 2025). This persistent failure raises a critical pedagogical question: Is the reading deficit primarily due to a lack of vocabulary size, insufficient depth of word knowledge, or an inability to process complex syntax?

Existing research fails to provide a clear answer for this specific population. Findings from international contexts (e.g., China or Japan) may not generalize to Turkish learners due to differences in L1 typology and instructional backgrounds. Moreover, the limited number of studies conducted in Türkiye have yielded contradictory results. For instance, Nergis (2013) found that syntactic awareness was the strongest predictor for EAP learners, whereas Susoy and Tanyer (2019) concluded that vocabulary depth was the primary factor for advanced ELT students. Similarly, Taşçı and Turan (2021) reported mixed findings dependent on proficiency levels.

These inconsistencies indicate a significant gap in the local literature. Most prior Turkish studies have relied on small samples or specific sub-groups (e.g., ELT majors), leaving it unclear which linguistic factor is the most decisive predictor for the general undergraduate population. This study addresses this gap by investigating the relative predictive power of vocabulary size, vocabulary depth, and syntactic knowledge simultaneously within a large and diverse sample ($N = 493$) of Turkish university students. By doing so, it aims to resolve the ambiguity in the current literature and provide evidence-based guidance on whether instructional focus should shift toward lexical expansion, deeper word knowledge, or syntactic processing to improve reading outcomes.

Purpose of the Study

Given the issues outlined above, this study sets out to examine the relative contributions of vocabulary size, vocabulary depth, and syntactic knowledge to L2 reading comprehension. In short terms, the study will look at three specific predictor variables: (1) vocabulary size, (2) vocabulary depth, and (3) syntactic knowledge and how each of these variables links to and predicts L2 reading comprehension. The study aims to determine which of these elements is a better predictor of reading comprehension achievement by examining data from 493 Turkish undergraduate EFL students.

First, the study evaluates the contribution of vocabulary size (breadth of knowledge) to reading comprehension. Vocabulary size is defined as the number of words or word families that a student knows to at least a basic level (Nation, 2001). The study will find out how much of a difference in reading ability is due to vocabulary breadth by using a standard Vocabulary Size Test (Nation & Beglar, 2007) and connecting it to reading results,

Second, the study evaluates the contribution of vocabulary depth to reading comprehension. Vocabulary depth is the quality of the linguistic knowledge of a person, or how well they know words and all their different meanings, collocations, and associations (Read, 2000). This study will try to answer the question, “Does vocabulary depth provide additional predictive power for reading comprehension beyond vocabulary size?” by using a Word Associates Test, which evaluates depth.

Third, the study evaluates the contribution of syntactic (grammatical) knowledge to reading comprehension. Syntactic knowledge refers to the understanding of the rules

and patterns that govern how words are combined into sentences (Babayigit & Shapiro, 2020). Syntactic knowledge in this study is measured by a grammar test (adapted from a subsection of the Longman TOEFL test (Phillips, 2001)). The aim of this study is to find out if students' knowledge of English grammar structures (like being able to spot correct syntax, deal with complicated sentences, etc.) is related to and can predict how well they will understand written texts.

Fourth, the study comparatively analyzes which of these factors (vocabulary size, vocabulary depth, or syntax) emerges as the best predictor of reading comprehension. The main goal of the study is to compare these variables by using statistical methods like multiple regression analysis to find out how much each variable contributes when all of them are considered. Essentially, the goal is not only to determine whether vocabulary and syntactic knowledge have an impact on reading comprehension-which they undoubtedly do-but also to determine which one has a bigger impact on Turkish EFL learners when the other is controlled for.

Finally, by achieving these objectives, the study aims to clarify the roles of vocabulary and syntactic information in second language reading by achieving these objectives. The findings will directly address the question posed in the thesis title: Which one predicts Turkish EFL students' L2 reading comprehension better? By doing so, the study aims to resolve some of the ambiguity noted in the problem statement and contribute evidence that can guide both theory and practice.

Significance of the Study

This research is important for second-language acquisition (SLA) and reading comprehension success in particular. In theory, it adds to the current conversation about what makes up successful L2 reading comprehension. The combination of various skills (vocabulary, syntactic, etc.) to enable successful comprehension is a fundamental issue. A recent meta-analytic synthesis has maintained this issue by finding that vocabulary and syntactic knowledge continue to be among the strongest correlations of L2 reading (Jeon & Yamashita, 2014).

This study gives a detailed look at L2 reading comprehension by looking at dimensions of vocabulary and syntactic knowledge at the same time. Earlier research often treated 'vocabulary knowledge' as one-dimensional, not fully accounting for how

various aspects of word knowledge affect reading (Anderson & Freebody, 1981). Most vocabulary tests were general measures that neglected the multi-dimensional nature of the construct. New research separates breadth and depth and shows that each affects comprehension in its own distinct way (Chen & Mei, 2024; Tong & Tong, 2022).

If vocabulary depth can still predict reading when breadth is controlled for, that would support different dimensions of vocabulary knowledge with more than one variable (Nation, 2001; Read, 2000). Similarly, new L2 reading models are based on measuring how much syntactic knowledge matters compared to vocabulary knowledge. For example, Shiotsu and Weir (2007) and Zheng et al. (2023) implied that morpho-syntactic awareness and grammatical understanding are still strong predictors of language skills even after vocabulary knowledge is controlled for. According to Laufer (1989) and Hu and Nation (2000), these results support modern versions of the linguistic-threshold hypothesis. This hypothesis is now based on vocabulary -coverage benchmarks: 95% for basic understanding and 98% for comfortable reading. There is also a link between this study and recent discussions about the Simple View of Reading (SVR) in second language settings (Babayiğit & Shapiro, 2020). Nordstrom et al. (2025) say that longitudinal testing in semi-transparent orthographies shows that decoding and linguistic understanding are still two separate but connected processes. According to Nordström et al. (2025), while syntactic knowledge primarily promotes sentence-level parsing, vocabulary knowledge improves both linguistic understanding and decoding (sight word access); as a result, their proportionate weights assist in refining the SVR model for EFL populations.

Finally, researchers are still calling for strong multivariate models to separate the effects of vocabulary knowledge and syntactic knowledge (Ardasheva et al., 2021; Zheng et al., 2023).

This study aims to investigate whether global tendencies reproduce locally or whether context works as a moderator. By offering such data for the under-researched Turkish EFL setting either conclusion is conceptually instructive.

This study has practical implications for language instruction and curriculum design in Türkiye and similar EFL situations. If the study indicates that vocabulary knowledge is a stronger predictor of reading comprehension, EFL programs should

prioritize vocabulary development. It might lead teachers to use methods for quickly building students' vocabulary knowledge, like reading a lot, teaching vocabulary strategies, and so on, because they would know that every word gained can lead to better reading comprehension. It would also show how important it is to teach more than just words; to make sure students develop deeper knowledge of those words (e.g., understanding synonyms, word families, usage contexts, and collocations), because depth of vocabulary knowledge may have an independent impact. If, on the other hand, syntactic knowledge turns out to be just as important or more important, then teaching grammar is still important, just maybe with a shift in approach. Teachers may concentrate on assisting students in applying their syntactic knowledge in reading contexts, such as by teaching parsing techniques for complex sentences or emphasizing how comprehending clauses and referents can improve comprehension (Grabe & Yamashita, 2022; Urquhart & Weir, 1998).

In Türkiye, where grammar instruction has always been traditionally robust finding that strong syntactic knowledge highly predict reading success would support current methods and also encourage combining grammar with reading activities. The findings may have ramifications on assessment and placement. For example, universities in Türkiye often administer English proficiency and placement tests to new students to see where they fit in before they start school. Finding out whether a vocabulary test, a grammar test, or a mix of the two best reflects reading ability could help design more reliable and efficient diagnostic tests. The results can also help material designers: reading books and test prep classes (for example, for the YDT or TOEFL) could be better tailored. For instance, if vocabulary depth emerges as a significant predictor of reading comprehension (Qian, (2002); Read, (2004)), then instructional materials could include activities that help students build semantic networks and connect words, instead of just teaching them isolated definitions.

Lastly, the results show policymakers where they should spend their efforts more. There may be programs like extensive reading schemes or vocabulary enhancement courses that colleges should consider offering if they find a big vocabulary gap. If grammar is what's getting in the way, maybe bridging classes that focus on complex academic English structures would help. In short, this study is significant because it gives evidence-based implications on which language skills

Turkish EFL students should focus on in order to improve their reading comprehension. To help teachers make choices that will improve their students' academic English skills, the study aims to find out whether vocabulary or syntactic knowledge (or both) is the most important factor for better comprehension. In sum, by clarifying which linguistic skill most limits Turkish EFL learners' reading comprehension, this research can guide evidence-based pedagogical decisions and contribute to SLA (Second Language Acquisition) theory on the relative impact of vocabulary and syntax.

Definitions of Key Terms

For this study, the following key terms are explained in two ways: theoretically (how they are thought of in theory) and functionally (how they are used in this study):

Vocabulary Size (Breadth of Vocabulary Knowledge)

Theoretical Definition

According to Nation (2001) vocabulary size refers to the total number of words or word families that an individual knows to a minimum useful level in a given language. It reflects the breadth of one's vocabulary repertoire—essentially, how many words one can recognize and understand in context (Anderson & Freebody, (1981)). Learners with a larger vocabulary repertoire are able to recognize and understand a greater number of words in context. When studying second language reading, vocabulary size is very important because it determines vocabulary coverage of texts (Hu & Nation, (2000)).

Functional Definition

The Nation and Beglar (2007) Vocabulary Size Test (VST) is used to measure vocabulary size in this study. The VST is a multiple-choice test that checks how well someone knows 1,000 word-family bands of different frequencies. Each question shows a target word in a simple setting and asks the student to pick the correct meaning. The version used in this study is limited to the first 10,000 word-family list. As a quantitative measure of a person's language breadth, their score on this test (out of a possible maximum) will show how well they know the 10,000 most common word families.

Vocabulary Depth (Depth of Vocabulary Knowledge)

Theoretical Definition

It is the quality of one's knowledge about words, covering how well one knows various dimensions of a word's meaning and use (Read, 1993; 2000). According to Qian (1999) and Schmitt (2014) depth of vocabulary knowledge includes understanding of synonyms and antonyms, knowledge of collocations (what other words a given word commonly co-occurs with), morphological knowledge (knowledge of roots and derivations), polysemy (different meanings of the same word), and other word-association networks. It displays the depth and the extent of a person's vocabulary (Read, 2004). A learner with a higher vocabulary depth possesses a thorough understanding of a word, which extends beyond its basic meaning to include its multiple related meanings (polysemy), its grammatical and collocational properties (reflecting usage challenges), and its various semantic relationships with other words (such as synonymy, antonymy, and hyponymy) (Zhang, 2012).

Functional Definition

The Word Associates Test (WAT), which was created by Read (2000), is used to measure vocabulary level in this study. The WAT presents the test-taker with a target word and several other words and the task is to identify which of those words are semantically or collocationally associated with the target word. The test-taker has to figure out which groups of words are meaningfully linked to the target word (through semantic association or collocation). For instance, the student is given an adjective and has to choose which words from a list are its synonyms or nouns that are closely related. The student's WAT score shows how well they understand these deeper word connections. A higher score indicates greater depth of vocabulary knowledge. By administering Read's WAT to participants, a numerical index of each student's vocabulary depth is attained, which will be correlated with their reading performance.

Syntactic Knowledge

Theoretical Definition

According to Babayiğit and Shapiro (2020) syntactic knowledge means understanding the rules and patterns behind how words are put together to make

statements and sentences in a language. It includes understanding morphology (inflections, like tense or plural markers) and grammar (sentence structure) (Larsen-Freeman & Celce-Murcia, 2015). It also means being able to break down sentences and figure out how different parts of a sentence relate to each other, like how subjects and verbs agree, how modifiers and clauses work, and so on (Grabe & Yamashita, 2022). A learner who knows a lot about syntax can understand complicated sentence structures, correctly read sentences with multiple clauses, and spot grammatical mistakes or ambiguity (Koda, 2005). Ultimately, syntactic knowledge enables readers to build the structural framework of meaning and determine "who is doing what to whom, when, and how" from a sequence of words (VanPatten, 2015).

Functional Definition

An adapted set of grammar questions from the Longman TOEFL Test (Phillips, 2001) was used to measure syntactic knowledge in this work. A set of multiple-choice questions that are like those on official English tests are chosen. The questions cover important parts of English grammar, like verb tenses, relative clauses, conditionals, agreement, prepositions, and more. Each question presents a sentence with a missing word or phrase, and the student chooses the option that correctly completes the sentence grammatically. The student's overall score on this syntactic knowledge test shows how well they understand English grammar structures. A high score indicates a strong ability to understand and use English syntax, which is expected to aid reading comprehension, since a student with strong syntactic knowledge can interpret complex sentences more accurately. It is important to note that this test is mostly about receptive syntactic knowledge, which means being able to recognize the right forms in context, which is how reading works. This instrument was selected because its focus on identifying grammatically correct structures in context aligns with the receptive syntactic processing required for reading comprehension, as opposed to productive grammatical skill.

Reading Comprehension (in L2 English)

Theoretical Definition

It is the ability to understand, interpret, and derive meaning from written texts in English (RAND Reading Study Group, 2002). Not only does it involve understanding words and sentences, but it also involves putting together a clear picture of the text's main

idea, drawing conclusions as needed, and combining what is read with what is already known. In an academic setting or assessment, reading comprehension can mean being able to answer questions about the main ideas, details, inferences, words in context, and the author's tone or purpose. It is a higher-order ability that arises from the interaction of reader's cognitive functions, metacognitive techniques, and linguistic knowledge (vocabulary, grammar).

Functional Definition

A Reading Comprehension Test adapted from the Longman TOEFL Test (Phillips, 2001) is used to measure L2 reading comprehension in this study. This test consists of several passages followed by multiple-choice questions, similar in format to standardized English tests (TOEFL or YDT) that the students might encounter. The passages are about a variety of topics, and the questions test different types of comprehension, such as finding the main idea, knowing specific details, drawing conclusions about what they mean, and figuring out what words mean in the context of the passage. Each participant's reading comprehension score is the number of questions answered correctly across all passages. This score serves as the dependent variable in this study, and its outcome is used to predict using the vocabulary and syntax measures.

Turkish EFL Learners

Theoretical Definition

This term refers to learners who are learning English as a second language but speak Turkish as their first language or went to elementary school in Türkiye. *Foreign language* implies that English is not the main way they communicate with others every day and that they mostly hear English in school or on the media, not by living in a society where everyone speaks English.

Functional Definition

Turkish EFL students here specifically denotes the 493 undergraduate students in Türkiye who participated in this research. These students are typical young adults in Türkiye. They all took the English section of the national university entrance exam and/or are enrolled in regular English classes at university. At the time of this study, they were continuing to improve their English through their university coursework. The findings of

this study are intended to be generalizable to similar populations of Turkish EFL learners at university level.

Assumptions and Delimitations

Every empirical study is based on a set of ideas and has clear limits on its scope and domain. For clarity, the key assumptions and delimitations of this thesis are outlined below:

Assumptions

It is assumed that the tests used in this study assess the variables they are supposed to measure accurately and consistently. The Vocabulary Size Test (Nation & Beglar, 2007), the Word Associates Test (Read, Assessing Vocabulary, 2000), the TOEFL-based Structure and Written Expression test (Phillips, 2001), and the Reading Comprehension test (Phillips, 2001) are all standard or commonly used instruments for L2 research and testing. It is assumed that they have sufficient validity. For example, the vocabulary size test genuinely assesses how many words participants know (not some other skill like test-taking skill), and the reading test genuinely assesses comprehension (not just memorization or pointless pursuit). It is assumed these instruments are both valid and reliable - for instance, that the Vocabulary Size Test truly measures vocabulary breadth (validity) and would yield consistent scores upon repeat administration (reliability).

It is presumed that each participant who took the test did so with sincere and rational effort. In other words, it is presumed that the students were motivated to perform well and adhered to the instructions carefully. This is crucial since the results would not accurately represent students' true ability if they were just guessing or not trying on a given test. To support this notion, the examinations were administered in a controlled environment (in a classroom) with proper supervision, and students were told that their performance would be kept confidential and used for research to encourage honest effort.

The sample of 493 Turkish EFL undergraduates is assumed to be broadly representative of the larger population of Turkish university-level EFL learners, notably those at pre-intermediate to advanced proficiency levels. This means that it is assumed there are not any extreme biases in the sample, such as the fact that it is not made up entirely of extraordinarily strong or weak participants, but rather a mix comparable to what one would find at various universities. This assumption supports the

findings' generalizability: assuming the sample is representative of the population, the conclusions drawn about the contributions of vocabulary knowledge and syntactic knowledge to reading comprehension can be applied to similar learner populations in Türkiye.

It is assumed in the analysis (particularly when utilizing multiple regression or structural modeling) that the contributions of syntactic knowledge, vocabulary depth, and vocabulary size to reading comprehension are incremental and separable. Assuming all other variables remain constant, it is presumed that there are underlying linear relationships, such as the tendency for an increase in vocabulary to be linearly related to an increase in reading comprehension score. A certain amount of linearity is assumed for interpretability in the quantitative approach, even though reality may be more complex (interactions may exist, thresholds may be non-linear).

It is also presumed that all participants had adequate decoding skills (basic reading fluency in recognizing English words in print), so that their vocabulary and syntactic knowledge were the primary distinguishing variables in reading comprehension, rather than differences in basic phonological decoding ability. It is assumed all participants can read English text at the word level and differences in comprehension are due to differences in understanding, not inability to decode. It is further presumed that participants' reading, or test-taking methods are all the same; that is, no participant received systematic instruction in test-taking techniques that affected their scores regardless of their comprehension skills.

Delimitations

This study is limited to undergraduate EFL learners in Türkiye. Most of the participants belong to the same age group (19–25) and are in the same educational setting (university). There are no younger learners (K-12 kids) but there are three participants older than 26 in the study. Therefore, without more evidence, caution should be exercised when extrapolating the findings to, say, high school students or EFL learners in other countries. The findings are primarily meant to apply to the context of Turkish EFL university students.

The study focuses on English reading comprehension and its connection to linguistic knowledge factors: vocabulary knowledge and syntactic knowledge. It

purposefully ignores other possible variables that might impact reading comprehension, such as prior knowledge of the subject matter, reading techniques, motivation, working memory, and reading proficiency in native language. These things might play a role in reading comprehension success, but they are not the subject of this thesis. The study isolates vocabulary knowledge and syntactic knowledge as the variables of interest by design, which is a delimitation essential for the purpose of answering the research questions. The analysis will not, however, take into consideration the variation in reading scores brought about by those other factors.

This study's borders are set by the tests used (VST, WAT, TOEFL Structure and Written Expression, and TOEFL Reading). In this case, vocabulary size refers to receptive vocabulary knowledge, which means the ability to recognize and understand words as measured in a multiple-choice format. Productive vocabulary knowledge (ability to actively recall or use words) is not measured. Similarly, written multiple-choice questions that emphasize formal accuracy are used to assess syntactic knowledge; however, they could not accurately reflect a participant's potential for real-time syntax processing or sophisticated sentence construction. Multiple-choice questions on short passages are used to test reading comprehension. This is similar to how standardized reading tests are usually designed, but it might not cover all aspects of comprehension, like the ability to summarize or analyze a text. By using these instruments, the results are restricted by the operationalization of each construct by the chosen tests. Thus, the findings relate to formal syntactic knowledge, test-based reading comprehension, and the breadth and depth of receptive vocabulary. As a result, findings depend on the tests that were used. For example, a free response reading test or an oral grammar test might yield somewhat different outcomes.

This study is not an experiment by design; it is more of a correlational and comparison study. In a one-time evaluation, the relationships that exist between the variables were observed. Hence, a delimitation is that causal relationships were not established. Although it might be assumed that vocabulary knowledge is a good predictor of reading comprehension, without experimental or longitudinal evidence, it cannot be stated with certainty that increasing vocabulary will result in a comparable improvement in reading comprehension success. The study's methodology allows us to discuss possible influence and contribution (and make pedagogical recommendations),

but causation is inferred from theory rather than evaluated directly through intervention. This delimitation is important to temper the interpretation of results.

The study did not monitor changes over time; rather, it was conducted in a short time period. It provides a snapshot instead of a long-term look at how things have changed. Furthermore, participants' earlier learning experiences or the contents of their curriculum were not taken into account (beyond knowing they have had general EFL training). The study does not compare different instructional methods; all students are assumed to be from the mainstream Turkish education system; therefore, the influence of different teaching approaches is held constant and is not included in the comparison scope.

By defining these assumptions and limits, both confidence in the study's approach and the boundaries within which the findings may be interpreted are acknowledged. These guidelines aid in ensuring that the research findings are suitable and within reasonable bounds.

Research Questions

The following research questions have been developed in line with the study's objectives. These questions serve as this study's foundation and align with the variables under study.

Research Question 1

To what extent does vocabulary size (i.e., the total number of words known) predict L2 reading comprehension among Turkish EFL students? This question explores the correlation between learners' vocabulary breadth and reading comprehension success. It asks whether students with larger English vocabularies tend to have better reading comprehension, and how strong that predictive relationship is.

Research Question 2

To what extent does vocabulary depth (i.e., the quality and complexity of vocabulary knowledge, such as collocational knowledge and multiple meanings) predict L2 reading comprehension among Turkish EFL students? The study explores whether a deeper understanding of words, beyond their simple meanings, leads to improved reading comprehension. It investigates whether students who possess a deeper understanding of

words (in terms of usage and associations) are better able to understand texts and the extent to which this area of knowledge accounts for reading proficiency.

Research Question 3

To what extent does syntactic knowledge (i.e., the awareness and mastery of grammar structures and sentence formation in a given language) predict L2 reading comprehension among Turkish EFL students? This question centers on the role of syntactic knowledge. It asks whether reading comprehension scores are typically greater for participants who possess a deeper understanding of English syntax. Essentially, it examines the extent to which these participants' comprehension of written texts is enhanced by their syntactic knowledge.

Research Question 4

Which of the three-vocabulary size, vocabulary depth, or syntactic knowledge, is the strongest predictor of L2 reading comprehension among Turkish EFL students? This question will be answered by assessing the distinct contribution of each predictor in a regression model. The study aims to determine the impact of vocabulary knowledge and syntactic knowledge on reading comprehension in this situation.

By providing answers to these questions, the study seeks to fill the gap in the issue statement by clearly determining the relative significance of vocabulary knowledge versus syntactic knowledge for English reading comprehension. Each question relates to the analysis that will be provided in the results chapter, and taken as a whole, they encompass the range of the study's objectives.

In conclusion, this introduction addressed the importance of vocabulary breadth, vocabulary depth, and syntactic knowledge in English reading comprehension for Turkish EFL university students. It implies that these aspects of linguistic knowledge are recognized by all as essential for reading success. Yet, integrated examination of these factors within the Turkish EFL environment remains limited in the literature, and this creates a significant gap. This gap constitutes the research problem driving the present study, which aims to provide a more comprehensive understanding of how these linguistic dimensions collectively affect reading comprehension outcomes. As a result, the following chapter will examine relevant theoretical and empirical research on

vocabulary breadth, vocabulary depth, and syntactic knowledge, with an emphasis on how each relates to reading comprehension. This literature review will lay the foundation for the current study and explain how it will address the identified gap.



CHAPTER II

LITERATURE REVIEW

This chapter provides a review of the literature regarding the comparative roles of syntactic knowledge and vocabulary knowledge in the context of L2 reading comprehension. It begins with major theories of reading comprehension and emphasizes the relationship between vocabulary and syntactic knowledge and second language comprehension processes. It then examines vocabulary knowledge in relation to L2 reading, highlighting key findings for each dimension (vocabulary size versus vocabulary depth). Next, the review analyzes studies on syntactic knowledge and reading comprehension, followed by research that directly compares vocabulary and syntax as predictors of L2 reading. The chapter subsequently focuses on the Turkish EFL setting and highlights limited research on Turkish learners and the need for the current study. The chapter concludes by summarizing the key findings and remaining gaps in the literature, which leads to the research questions that form the basis of this thesis.

Theoretical Perspectives on L2 Reading Comprehension

Reading comprehension is the product of decoding and linguistic comprehension which involves text decoding first and then meaning construction. The Simple View of Reading (Gough & Tunmer, 1986) is one of the major frameworks in L1 (first language) reading research. According to the Simple View, language decoding (the ability to recognize words) and language comprehension are the two main components that make up reading comprehension (RC). In other words, a reader needs to recognize accurately the written words and comprehend the text's language in order to understand it. Reading comprehension will be reduced if either decoding or language comprehension is deficient; both are crucial and complementary. This approach, which was originally developed for L1 reading, has been used in L2 (second language) contexts as well. In these circumstances, decoding includes processing L2 grammatical structures and mapping L2 word forms to their meanings, both of which strongly rely on vocabulary knowledge. Therefore, the Simple View of Reading points out how deficits in either vocabulary or syntactic knowledge can directly hinder L2 reading comprehension by affecting sentence comprehension or word recognition.

Empirical studies have validated this concept in a variety of languages. For example, Lee et al. (2022) showed that linguistic comprehension and decoding combined accounted for a significant amount of variation in reading proficiency. Overall, the Simple View emphasizes the importance of both strong word decoding skills and comprehensive language comprehension skills for successful reading.

Another model of text comprehension that has been influential is Kintsch's Construction-Integration (C-I) model (Kintsch, 1988; Kintsch, 1998). According to the C-I model, reading involves developing a mental image of the text (a text-base) by processing the syntactic relationships between words and their meanings, then combining this with the reader's existing knowledge to create a cohesive mental image of the situation being described. Linguistic expertise is crucial during the building stage since the reader must deduce propositional meaning from each sentence by comprehending the language and analyzing the syntactic structure. The reader cannot successfully construct the text-base if there are too many unfamiliar words or if the grammatical structure is too complicated to understand. The integration step uses higher-level cognitive processes, like drawing conclusions and using background knowledge, on top of what was learned in the vocabulary and syntactic decoding stages. Thus, the C-I model shows that strong vocabulary and grammatical abilities are necessary to construct the fundamental meaning units, which lead to more complex understanding and inference. In other words, vocabulary and syntactic knowledge serve as the foundation for readers to draw conclusions and integrate novel information with their previous knowledge.

The focus of early reading theories varied between bottom-up decoding capabilities and top-down inference abilities and prior knowledge. Modern perspectives generally recognize reading as an interactive process. In this sense, Stanovich's interactive-compensatory model proved essential (Stanovich, 1980). Despite being developed in 1980, Stanovich's interactive-compensatory model is considered theoretically modern because it integrates top-down and bottom-up processes into a coherent, interactive model. Thus, it shows an important change from previous one-dimensional models of reading. Stanovich (1980) proposed that readers compensate for shortcomings in one area by relying more on other knowledge sources. For example, if a reader has poor word-decoding abilities, they may rely more heavily on contextual cues or prior knowledge to infer meaning. On the other hand, a reader with less background

information may depend more on accurate language decoding. This approach implies a dynamic interaction: higher-level contextual aspects can help comprehension, especially when lower-level abilities are missing.

Later, researchers such as Bernhardt expanded on Stanovich's concept to include L2 settings. According to Bernhardt's (2005) compensatory model of L2 reading, L2 readers use a variety of resources, including L1 literacy abilities, L2 linguistic knowledge (vocabulary and grammar), strategic processing, background information, and so on, to compensate for inadequacies in any one area. Bernhardt estimated that approximately half of the variance in L2 reading outcomes can be explained by two main variables: L2 linguistic knowledge and L1 reading ability. (See Figure 1 for a visual representation. (Bernhardt, 2005))

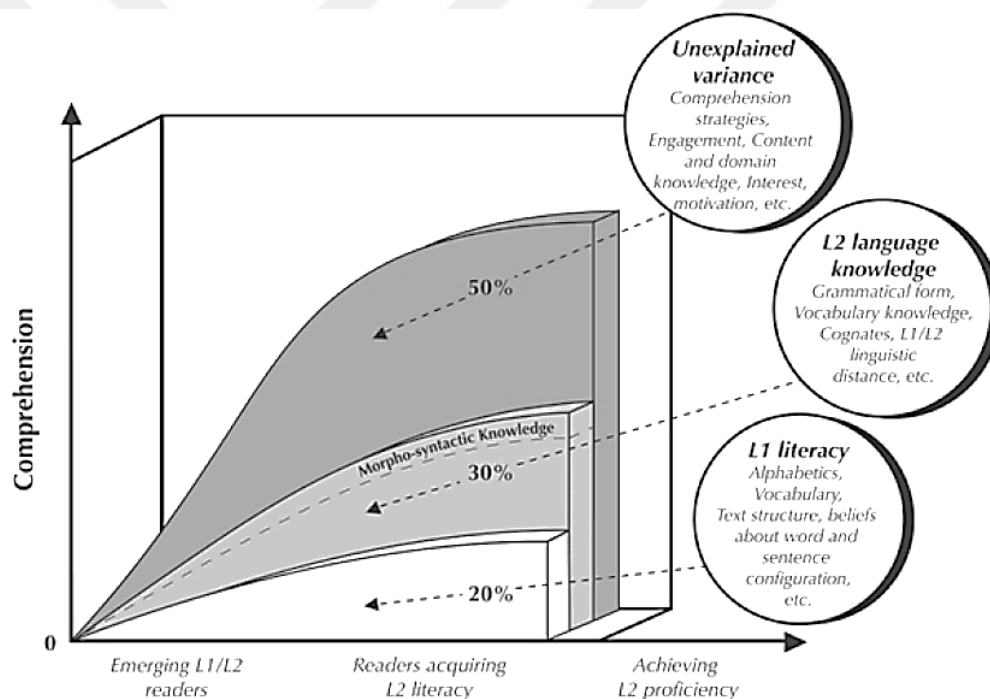


Figure 1. Developing Proficiency, adapted from Bernhardt (Progress and procrastination in second language reading, 2005).

In her model, these two variables (L2 proficiency and L1 literacy) each contribute significantly (on the order of ~20-30% of variance), leaving around 50% of variance unaccounted for by other factors. In other words, the reader's proficiency in their L1 and

the amount of language they know in the L2 predict roughly half of their L2 reading performance while the remaining half may depend on a variety of other factors (such as motivation, background knowledge, and techniques). This compensatory model emphasizes the idea that strong L2 vocabulary and syntactic knowledge are required, but it also admits that other variables outside linguistic knowledge influence L2 reading.

L2 linguistic threshold is one of the key concepts which is associated with these interactive models (Alderson, 1984; Clarke, 1980). While higher-level abilities (such as applying prior information or techniques) might help to fill language gaps, they cannot fully compensate for severe deficiencies in basic L2 linguistic understanding (Clarke, 1980). Before a reader can effectively utilize top-down methods or transfer L1 reading skills to L2 reading, they must meet a particular level of L2 vocabulary and grammar proficiency (Alderson, 1984). In L2 reading, this is commonly known as the threshold theory (Alderson, 1984; Clarke, 1980). According to Clarke's (1980) "short-circuit" hypothesis, L2 readers are unable to transmit their L1 reading skills because their L2 language proficiency is too low, which causes them to become short-circuited. Alderson (1984) famously asked, "Is second language reading a reading problem or a language problem?" and he suggested that language barriers are the main cause of reading difficulties below a particular threshold of L2 linguistic ability rather than reading proficiency itself. The threshold idea has been empirically supported. Brisbois (1995), for instance, observed that when L2 proficiency was restricted, L2 readers' success depended more on L2 language competency than on L1 reading ability. Bernhardt and Kamil (1995) also demonstrated that in order for L1 reading skills to transfer successfully, a minimum linguistic threshold must be reached. Therefore, according to theoretical viewpoints, vocabulary and syntactic understanding are fundamental prerequisites for L2 reading comprehension. Even if they have much prior information or great general reading abilities, L2 readers will find it difficult to decode and understand texts if they lack enough vocabulary knowledge and syntactic knowledge. Higher-level cognitive skills can actually improve comprehension only when a reader has a basic threshold of linguistic knowledge.

In conclusion, several models highlight the critical importance of linguistic knowledge in reading. Specifically, according to the Simple View, language comprehension and decoding are essential elements (Gough & Tunmer, 1986). Similarly,

Kintsch's (1988; 1998) concept emphasizes constructing textual meaning from words and grammar as a prerequisite for greater comprehension. Moreover, although interactive and compensatory models (Bernhardt, 2005; Stanovich, 1980) demonstrate that readers employ a variety of information sources to offset their shortcomings, they also warn that no amount of strategy or context can completely compensate for a lack of vocabulary or syntax beyond a certain point. Taken together, these perspectives establish the foundation for the subsequent sections, which will investigate the contributions of syntactic knowledge and vocabulary knowledge to L2 reading. Given these theoretical frameworks, both vocabulary knowledge and syntactic knowledge are fundamental to reading - the following sections review empirical research on each of these components in L2 reading.

Vocabulary Knowledge and L2 Reading Comprehension

Defining and Conceptualizing Vocabulary Knowledge

Vocabulary knowledge is a complex concept. Researchers often distinguish between two major dimensions: vocabulary breadth (also known as size) and vocabulary depth. Vocabulary breadth is the number of words a person understands at least to some extent-essentially, how many vocabulary items (word families) one can recognize the core meaning of. It is a quantitative measure of the scope of one's vocabulary. Vocabulary size, according to Nation (2001), is the number of words for which a learner has at least some meaning. In short, vocabulary breadth is often estimated with instruments like yes/no checklists or standardized vocabulary levels tests (e.g., the Vocabulary Levels Test or newer Vocabulary Size Tests; (Nation & Beglar, 2007)). These assessments often require learners to demonstrate recognition or basic understanding of words at varying frequency levels. Such assessments only provide a superficial indicator of word knowledge in other words, they simply determine if a word is recognized or unfamiliar in its most basic sense (Read, 2004). Thus, vocabulary breadth tests show how much vocabulary someone knows, but they normally do not check how well they know each word.

Vocabulary depth is about how well someone understands each word in all its aspects and how deep and high-quality someone's understanding of that word is. Depth of vocabulary knowledge includes more than just knowing the main dictionary meaning of a word. It also includes knowing its semantic associations (like synonyms, antonyms, and hyponyms), collocations, morphological properties (like root form and derivations),

grammatical behaviors (like typical syntactic patterns or frames), register and frequency, and pronunciation and spelling (Qian D. D., 1999; Schmitt, 2014). In short, depth is a multi-dimensional notion that shows how well each word integrates into the learner's vocabulary. In addition to a word's basic meaning, a learner who is deeply familiar with it would also be aware of its subtle connotations, alternative meanings (polysemy), normal usage patterns, and linkages to other words (e.g., associations and collocations).

Read (1993) contributed that depth is how well a word is represented in mental lexicon, and breadth is how many words a learner knows something about. Even though breadth and depth are different concepts they are connected. For example, knowing more words (greater breadth) usually provides more opportunities to also develop depth of knowledge about words. On the other hand, knowing a lot about some words might help them learn more terms that are related. However, the two dimensions are not identical, and there might be an imbalance (e.g., a learner may know many words just superficially, or fewer words but each in great detail) (Nurweni & Read, 1999; Qian D. D., 1999).

In L2 vocabulary assessment and research, both dimensions have been emphasized. Vocabulary breadth is often seen as foundational-a learner must know a sufficient number of words to achieve basic comprehension-while vocabulary depth is increasingly regarded as critical for finer nuances of understanding and advanced reading (Qian D. D., 1999; Schmitt, 2014). Therefore, a comprehensive assessment of a learner's vocabulary competence must take into account both the breadth (number of words) and depth (quality of those words). The current study takes this approach by investigating both dimensions; it is recognized that quantity of words known, and quality of word knowledge are closely related but not identical skills, and both may impact reading in different ways.

The Role of Vocabulary Size in L2 Reading Comprehension

A robust vocabulary size is widely documented to be essential for L2 reading comprehension. Research conducted by Jeon and Yamashita (2014) and Schmitt et al. (2011) showed that vocabulary size, also known as breadth, is a significant factor in determining the level of reading comprehension in a second language (L2). To put it another way, if readers do not have a comprehensive understanding of a significant proportion of the words contained in a document, it is highly likely that they will have

difficulty successfully comprehending that text. According to Schmitt et al. (2011), vocabulary coverage is a critical concept in vocabulary research. It is defined as the percentage of running words in a text that a reader is familiar with.

According to the findings of early research, a minimal threshold for optimal comprehension was approximately 95% vocabulary coverage. This means that coming across more than one unknown word out of twenty could considerably impair one's ability to comprehend the text (Laufer B. , 1989; Laufer & Ravenhorst-Kalovski, 2010). On the other hand, recent research has advocated for thresholds that are much higher. For example, Hu and Nation (2000) found that in order for readers to be able to read for pleasure without experiencing significant difficulties, they needed to be familiar with around 98-99% of the terms that were contained in a given text. These results were further supported by Schmitt et al. (2011), whose study demonstrated that vocabulary coverage nearing 98% was likely necessary for adequate comprehension (e.g., aspiring to more than 60% comprehension), whereas many readers achieved only limited understanding at 95% coverage, with only 35-41% of participants reaching adequate comprehension at that level.

In order to successfully read authentic, unsimplified texts, it is often necessary to have a substantial amount of vocabulary knowledge. These vocabulary coverage criteria represent this requirement. Nation (2006) estimated that around 8,000-9,000 word families are required to achieve approximately 98% vocabulary coverage in a variety of fields, including academic writings, novels, and newspapers, among other types of writing. Even writings that are just partially authentic or graded require knowledge of a few thousand different word families. Laufer and Ravenhorst-Kalovski (2010) made a distinction between a minimal vocabulary threshold for reading, which is approximately 4,000 - 5,000 word families and roughly equates to 95% coverage, and an optimal threshold, which is approximately 8,000-word families and roughly equates to 98% coverage. They emphasized that learners who fall below the minimal threshold frequently struggle significantly with comprehension, whereas reaching the optimal threshold enables much more independent reading with content comprehension that is satisfactory.

Empirical research frequently found strong associations between vocabulary size and L2 reading ability, which highlights vocabulary breadth as one of the strongest indicators of reading success (Qian D. D., 2002; Stæhr, 2008). This is shown by the fact

that vocabulary size is positively correlated with reading comprehension success. For instance, Laufer (1992) discovered that there was a strong connection between the size of learners' vocabulary and the results they received on ESL reading comprehension tests. Similarly, Qian (2002) observed that scores on a vocabulary size test were highly linked (with a correlation coefficient of around $r \approx .74-.78$) with scores on the TOEFL reading comprehension test in an academic English as a second language (ESL) setting. Horst et al. (1998), Nation and Coady (1987) and Zhang (2012) are just a few examples of the several additional research that were conducted across a variety of learner populations and produced results that are similar to these. An exceptionally remarkable discovery was made by Stæhr (2008), who conducted a study on Danish students of English as a foreign language and discovered that vocabulary breadth alone was responsible for nearly 72 percent of the variation in reading comprehension scores. Such findings highlight the essential role that vocabulary breadth plays in reading comprehension outcomes, hence validating the argument made by some researchers that the size of one's receptive vocabulary is a determining factor for reading success in many different circumstances associated with second language acquisition.

Meta-analytic evidence further confirms vocabulary's significance for L2 reading. According to Jeon and Yamashita (2014), who conducted a comprehensive analysis of a number of studies, the average correlation between vocabulary knowledge and reading comprehension was roughly $r = .79$. This indicates that vocabulary is one of the most powerful predictors that was investigated.

Additionally, the idea of vocabulary thresholds has important educational implications. It implies that teachers should place a strong priority on learning a critical mass of high-frequency words. According to research by Laufer and Ravenhorst-Kalovski (2010), learners should first strive for around 4,000-5,000 word families in order to obtain approximately 95% vocabulary coverage. Afterwards, they should expand their word families to 8,000 or more in order to attain advanced independent reading. This realization highlights the essential role that vocabulary breadth plays, as understanding is inevitably restricted in the absence of appropriate vocabulary covering. The learners who fall below these levels typically experience dissatisfaction as a result of limited comprehension, whereas the learners who surpass these thresholds have reading experiences that are significantly smoother and more effective.

In summary, L2 reading comprehension is greatly impacted by vocabulary breadth. Empirical research consistently demonstrates the strong predictive power of vocabulary size, and clear vocabulary coverage thresholds (95% and 98%) set critical benchmarks for reading success. Therefore, increasing the breadth of learners' vocabulary, particularly within high-frequency ranges, is necessary for successful reading in a second language.

The Role of Vocabulary Depth in L2 Reading Comprehension

Especially at more advanced levels, it is believed that reading comprehension is influenced not only by the sheer size of one's vocabulary but also by the depth or quality of one's vocabulary knowledge (Binder et al., 2017; Cai & Liao, 2024). It is evident that having a large vocabulary is crucial, but the quality of that vocabulary might influence one's capacity to understand complex texts and draw conclusions during reading (Nassaji, 2004; Qian D. D., 2002; Schmitt et al., 2011). Deeper vocabulary knowledge can improve reading comprehension in a number of ways.

First, having a large vocabulary makes it easier to parse and analyze texts accurately (Cai & Liao, 2024; Nassaji, 2004; Stæhr, 2008). A reader is more likely to comprehend a word accurately in context when they possess rich knowledge about it, such as understanding its many meanings and nuances, common collocations, and grammatical behavior (Li & Kirby, 2015; Perfetti & Hart, 2002). Depth also includes morphological awareness (e.g., roots, affixes) and collocational knowledge, which support accurate meaning construction (Kieffer & Lesaux, 2012; Li & Kirby, 2015). Many words in English have multiple meanings or usages depending on context (Nation, 2013). A shallow vocabulary knowledge, which consists of understanding only one core meaning, has the potential to mislead a reader when the text is intended to convey a secondary meaning with those words. When the reader has a more in-depth understanding (for example, when they are familiar with synonyms, polysemy, and collocations), they are able to adapt their comprehension to the context. For example, the word *draft* has multiple distinct meanings. When the word *draft* is used in reference to air movement (a cold draft) or mandatory military duty (the draft), a reader who only understands the basic definition of the word (a preliminary version of a document) may become confused. Deeper vocabulary knowledge will enable a reader to identify these alternative meanings. Therefore, a deeper vocabulary knowledge can improve comprehension accuracy by

lowering misunderstandings and the need to rely on outside cues to understand words (Jeon & Yamashita, 2014; Qian D. D., 2002; Read, 1993).

Second, depth is linked to vocabulary inferencing ability - the skill of guessing or inferring the meaning of unknown words from context (Perfetti & Hart, 2002). According to the findings of research conducted by Nassaji (2004), learners who had a more extensive vocabulary knowledge were more successful in inferring the meanings of words based on their context. The reasoning behind this is that when a reader encounters a word that they are not familiar with, they call on their network of vocabulary knowledge (knowledge of related words, morphology, and so on) to speculate about what the word might imply (Deacon & Kirby, 2004). According to the Lexical Quality Hypothesis, precise and integrated representations of a word's form (orthography, phonology) and meaning support efficient recognition and interpretation, thereby enhancing inferencing accuracy (Perfetti & Hart, 2002). For instance, having knowledge of the root of a word as well as its different affixes (also known as morphological depth) might assist in deciphering the meaning of a new derivative of that word (Carlisle, 2000; Kieffer & Lesaux, 2012). Having a large number of synonyms and antonyms, also known as semantic depth, can assist in triangulating the meaning of an unknown term by comparing it to other words or comparing it to something similar (Schmitt, 2014). Therefore, depth can indirectly help with comprehension by allowing readers to manage words they are unfamiliar with through the use of inference, which helps to sustain the flow of understanding (Nassaji, 2004; Qian D. D., 2002; Tong & Tong, 2022).

Third, the depth of one's vocabulary may become especially crucial for higher-level comprehension (which goes beyond literal comprehension) (Cain et al., 2004). For deeper comprehension, it is often necessary to appreciate the nuances, tone, and connotations that are present in a text, even after the basic meanings of words have been comprehended. There are nuances that can be picked up by a reader who has a greater vocabulary knowledge, such as if a word choice is sarcastic, technical, archaic, or colloquial. These nuances can have an effect on how a paragraph is interpreted. Depth also plays a role in spotting cohesive ties in text, such as being aware that the word however indicates a contrast or being able to recognize when two different words are synonyms relating to the same topic in a text (Cai & Liao, 2024). This helps in building coherence while reading. In conclusion, having a more in-depth understanding of the

words provides readers with the ability to progress from a surface awareness of the gist to a more sophisticated explanation of how something is expressed and indicated.

The empirical research that has been conducted on the relationship between vocabulary depth and reading has generally supported that depth adds additional explanatory power for comprehension beyond what is offered by vocabulary size. Qian (2002) was one of the pioneers who conducted a comprehensive investigation into this topic. Using a word associates test, Qian (2002) discovered that vocabulary depth had a strong correlation with TOEFL reading scores (in the range of $r = .78-.82$, which is comparable to vocabulary size). Furthermore, his research revealed that vocabulary depth made a significant and unique contribution to predicting reading comprehension when vocabulary size was taken into consideration.

Despite the fact that breadth continued to be the most important factor in determining reading rate, Binder et al. (2017) found that vocabulary depth contributed a substantial additional unique variance in reading comprehension beyond vocabulary breadth among adult readers who were proficient in reading. In other words, two learners with the same vocabulary size but different levels of depth of knowledge may get different reading outcomes, with the one with deeper knowledge performing better in comprehension. This suggests depth is not simply a byproduct of knowing more words; it captures a qualitatively different dimension of vocabulary proficiency that matters for reading. These findings were supported by other research as well. For instance, Tannenbaum, Torgesen, and Wagner (2006) conducted a study with third-grade students who were learning English as their first language. They discovered that measurement of word breadth and depth both predicted reading comprehension, with each factor accounting for its own variance. In that particular study, depth was evaluated based on how well children knew various characteristics of words.

In L2 contexts, Qian (1999) reported that both vocabulary breadth and depth significantly predicted reading comprehension of Chinese and Korean EFL learners, and that depth remained an independent predictor even after controlling for breadth. Similarly, Li and Kirby (2015) found that while breadth predicted general multiple-choice comprehension, depth made a unique contribution to summary-writing tasks requiring deeper processing. Proctor et al. (2012) also showed that vocabulary depth added predictive power for reading comprehension beyond breadth in bilingual children. These

data support the idea that vocabulary depth enhances reading comprehension beyond just vocabulary size.

According to several studies, in some situations, vocabulary depth may even be more important than breadth (Marzban & Hadipour, 2012). Evidence demonstrates that depth predicts comprehension accuracy and breadth uniquely predicts reading rate (Binder et al., 2017; Cai & Liao, 2024). According to Staehr (2008), vocabulary size had a very significant overall link with L2 reading, producing a high correlation of 0.83 and explaining 72% of the variance in the ability to score above average in the reading test. However, the study primarily focused on the dimension of vocabulary size and, while acknowledging that learners need depth as well as breadth in their vocabulary for adequate communication, it called for more research into the specific role of vocabulary depth. More specifically, Qian (2002) strongly advocates for the inclusion of depth and breadth to predict reading proficiency; depending solely on breadth would leave out important details. The significance of depth has been emphasized by recent research conducted in a variety of EFL scenarios, as well. Tong and Tong (2022) studied Chinese-English bilingual readers and discovered that vocabulary depth impacts reading comprehension through both direct and indirect pathways, including improved word reading skills. According to their pathway analysis, depth has a complex impact on reading because it can improve lower-level processes like word recognition (indirect effect) as well as aid in text comprehension (direct effect) (Tong & Tong, 2022).

In summary, vocabulary depth contributes to reading comprehension by enhancing the precision of word understanding, enabling inference of unknown words, and supporting higher-level text processing. It has been demonstrated through empirical data that the level of vocabulary depth explains additional variance in reading ability that goes beyond the breadth of the vocabulary. Depth can be a differentiating dimension, particularly for more advanced reading as well as for tasks that need nuanced or inferential comprehension. Therefore, in addition to learning more words, L2 learners can benefit by learning more about each word they already know, including the different meanings, relations, and applications of each term. Research suggests that deepening word knowledge through activities such as word associations, word-family knowledge, and collocations can increase reading comprehension success. Ultimately, a

learner with both a wide and deep vocabulary will be best equipped for tackling complex texts in the L2.

Summary of Vocabulary Knowledge Section

To summarize, vocabulary knowledge, in both breadth and depth, is fundamentally linked to L2 reading comprehension. Vocabulary breadth acts as the basic foundation by ensuring that the reader is familiar with the meanings of the majority of the words used in the text. Numerous research and a meta-analysis showed that the vocabulary size is one of the most reliable indicators of L2 reading comprehension success. Understanding will be severely limited in the absence of a threshold level of vocabulary, which is often considered to be between 95% and 98% coverage of words in a text. At the same time, vocabulary depth brings a qualitative dimension to this relationship. The reader is able to analyze the text more precisely, deduce the meanings of new words, and understand subtle nuances when they have a deeper understanding of vocabulary. This contributes to better reading comprehension even when breadth is taken into account. Both aspects function together: a vast vocabulary (breadth) is required for reading fluency, while a thorough knowledge of those vocabulary items (depth) improves comprehension. Literature suggests that in order for second language learners to achieve optimal reading growth, they should concurrently strengthen their understanding of high-frequency and academic words while simultaneously expanding their vocabulary size into several thousand words. The most effective teaching strategies for improving reading comprehension are probably those that cover both areas, such as introducing new words while simultaneously going into detail about word families, collocations, and usage. All things considered, the evidence evidently shows that vocabulary knowledge is a fundamental component of L2 reading proficiency.

Syntactic Knowledge and L2 Reading Comprehension

Defining Syntactic Knowledge

Syntactic knowledge refers to a person's understanding of the rules and patterns that govern how words are combined into sentences (Babayigit & Shapiro, 2020; Marjokorpi & Van Rij, 2024). In the context of language learning, it refers to a fundamental understanding of grammar, which encompasses not only morphology (the form and inflection of words) but also syntax (the organization of words into phrases and

sentences) (Larsen-Freeman & Celce-Murcia, 2015). A learner who possesses a strong syntactic knowledge is able to recognize and correctly interpret a wide range of grammatical constructions. These include a variety of verb tenses, plural markers and agreement, complex sentence structures (such as subordinate and relative clauses), and variations in word order (such as in questions or passive voice) (Grabe & Yamashita, 2022). In simple terms, syntactic knowledge involves understanding how sentence structure maps onto meaning, which helps to discern who is doing what to whom based on grammatical cues (VanPatten, 2015).

When it comes to reading, having the understanding of syntactic structures enables a reader to determine the specific meaning of phrases by parsing them. Written texts - especially academic or formal texts - often contain lengthy sentences with multiple clauses, modifiers, and referents (Koda, 2005). It is possible for a learner to be perplexed by the connections between the many components of a complex phrase if they do not have a solid understanding of syntax. For instance, who is the noun that a relative clause is describing, or which verb is tied to a certain subject? On the other hand, a learner who has a sophisticated understanding of syntactic structures is able to correctly interpret complicated comprehension elements such as tense/aspect, agreements (subject-verb, number), and complex sentence structures like subordination or inversion of the L2 language. As a matter of fact, syntactic knowledge in English involves mastery of features such as correct subject-verb agreement, tense usage, negation patterns, complex sentence types, and so on. In essence, a learner with a high level of syntactic knowledge may understand texts that are syntactically complicated by figuring out how the sentence structure works together to convey meaning.

For L2 readers, syntactic proficiency manifests in the ability to map syntactic structures onto an utterance-for example, identifying which noun functions as subject and which as object in a sentence (VanPatten, 2015). To accomplish this, sentences must be broken down into meaningful parts (clauses, phrases), and the grammatical relationships between these parts must be understood. This includes determining which noun is the subject of which verb, determining what a pronoun refers to, determining where a clause begins and finishes, and so on (Kintsch, 1988; Kintsch, 1998). A learner who is not very good at grammar might comprehend individual words, but they might misunderstand the sentence as a whole because they are unable to decipher the structure of the sentence. They might not know, for example, which word a participial phrase modifies or whether

a clause provides a contrast or a cause. Syntactic knowledge helps resolve these ambiguities by providing a framework for how sentences are built.

In the applied linguistics literature on L2 reading, specific distinctions among terms such as grammatical knowledge, syntactic knowledge, and grammar proficiency are frequently inconsistently used and this results in their frequent use with overlapping meanings. In this thesis, the term syntactic knowledge is used to place an emphasis on the structural features of grammar (as opposed to, for example, having explicit knowledge of prescriptive rules). Syntactic knowledge includes both an explicit understanding of grammatical rules, which requires conscious awareness, and an implicit, automatic ability to interpret sentence patterns in real time. Both of these are important: a learner may be aware of a rule (explicitly) yet still have difficulty applying it when reading if their parsing abilities are lacking, and vice versa (VanPatten, 2015). When it comes to reading, the most important factor is the functional capacity to accurately interpret the sentence structure. This can be accomplished by either implicit parsing skills or explicit grammatical reasoning.

In conclusion, syntactic knowledge in a second language (L2) refers to the collection of grammatical structures that a learner is able to comprehend and the speed with which they are able to absorb them. According to Perfetti and Stafura (2014) the learner's syntactic parsing is generated directly from vocabulary processing, where knowledge of structure is primarily encoded within vocabulary items and their multiword sequences. This enables them to transform a series of words into propositions that carry meaning and contribute to the construction of a coherent text representation. This kind of knowledge includes knowing how phrases and clauses are put together, how punctuation and sentence connectors indicate relationships, and how words inflect and agree (morphology). If a learner has limited syntactic knowledge, they may not be able to correctly interpret relationships in even a moderately complicated sentence. On the other hand, a learner who has advanced syntactic knowledge is able to navigate complex sentences and extract meaning from them. Therefore, it is expected that syntactic knowledge will play a significant role in facilitating reading comprehension, particularly as texts get more complex (Zheng et al., 2023).

Empirical Studies on Syntactic Knowledge in Reading

While the impact of syntactic (grammatical) knowledge on second language reading has been explored in a number of studies, historically, this area of research has often received less extensive and detailed attention compared to investigations into vocabulary. Overall, research indicates that syntactic knowledge is positively associated with reading comprehension. This means that proficient readers of a second language tend to have a strong command of syntax in the second language. However, there has been some debate regarding the relative importance of syntactic knowledge in comparison to vocabulary knowledge in predicting reading performance. While Perfetti and Stafura (2014) emphasize the critical role of word knowledge through their Lexical Quality Hypothesis, the broader research literature presents mixed and inconclusive findings on which of these linguistic components is a stronger predictor of reading performance. Some early studies suggested that syntactic knowledge is a significant variable in L2 reading success. However, other research (e.g., (Laufer B. , 1992)) found that when both vocabulary knowledge and syntactic knowledge were analyzed together, vocabulary knowledge explained more variance in reading comprehension than syntactic knowledge. This research reviews both sides of the argument.

Several influential studies pointed to the significant contribution of syntactic knowledge to reading comprehension. For instance, in their study of Dutch EFL learners, van Gelderen et al. (2004) used structural equation modeling to analyze the components of second-language reading. After controlling for other factors like processing speed and metacognitive knowledge, their final model showed that L2 vocabulary knowledge made a significant and unique contribution to reading comprehension ($\beta = .26$). In contrast, L2 syntactic knowledge did not show a significant unique contribution in the same model. This finding indicates that for this group of learners, vocabulary knowledge was a more powerful independent predictor of reading success than syntactic knowledge was.

Perhaps the most cited study in this area is Shiotsu and Weir (2007). In their study, Shiotsu and Weir conducted in-depth studies with Japanese university students studying English as a foreign language. They concluded that syntactic knowledge was an even more powerful predictor in reading comprehension tests than vocabulary breadth. Even after controlling for vocabulary breadth, syntactic knowledge remained a strong predictor of reading results. In contrast, their findings showed that vocabulary breadth had a less

distinctive effect on reading comprehension performance when syntactic knowledge was statistically controlled for. This meant that for those learners, understanding how to correctly comprehend complicated English syntax provided a higher boost to reading test performance than merely learning an additional set of low-frequency words. Shiotsu and Weir's findings challenged a then-common assumption that vocabulary is always the dominant factor in reading so the importance of grammatical proficiency in L2 reading should not be underestimated.

Syntactic knowledge's significant role has been confirmed by research. Atai and Nikuinezhad (2012), working with Iranian EFL learners, reported that syntactic knowledge explained more variance in reading comprehension than vocabulary did in their data. Similarly, studies showed that the impact of syntactic knowledge on reading can be particularly significant for specific groups, depending on proficiency levels or developmental stages. For example, Droop and Verhoeven (2003) found that for Dutch bilingual children in early grades, morphosyntactic knowledge correlated more strongly with reading comprehension than vocabulary knowledge. However, at later grades, the relative importance of vocabulary increased. Kim and Cho (2015), in a Korean context, discovered that the role of syntactic knowledge varied across different reading ability groups. Their findings indicated that syntactic knowledge was a stronger predictor of English reading comprehension for high proficiency readers, whereas vocabulary knowledge was a better predictor for intermediate proficiency readers.

These studies show that syntactic knowledge significantly affects reading, but its impact varies by context and proficiency. In contrast to research highlighting syntactic knowledge, some influential work suggests vocabulary knowledge can be the stronger predictor, with syntactic knowledge adding little unique variance once vocabulary is controlled for. A key example is the structural equation modeling (SEM) study by Zhang (2012) with 190 advanced Chinese university students. He found that vocabulary knowledge, measured in both breadth and depth, significantly predicted reading comprehension. While syntactic knowledge was also related to reading, its unique contribution was non-significant once vocabulary's effect was accounted for. This implied that much of the variance initially associated with syntactic knowledge was better explained by, or overlapped with, vocabulary knowledge. Zhang's analysis ultimately

indicated that vocabulary knowledge was a more substantial contributor to reading comprehension than syntactic knowledge in his sample.

In a study conducted in Türkiye by Susoy and Tanyer (2019) with adult Turkish EFL university students, L2 syntactic knowledge was not significantly correlated with reading scores for their overall sample. However, a subsequent study by Taşçı and Turan (2021), offered more detailed findings concerning the predictive power of different knowledge types across proficiency levels. According to Taşçı and Turan (2021) for participants with high reading proficiency levels, syntactic knowledge outperformed vocabulary breadth and depth in terms of predictive power for L2 reading comprehension. For intermediate and low reading proficiency levels, vocabulary breadth was found to be the largest contributor to L2 reading comprehension. There is a notable discrepancy between the two studies regarding the role of vocabulary depth. Susoy and Tanyer (2019) indicated that the depth of vocabulary knowledge was the best predictor of L2 reading comprehension for their overall sample when other factors were controlled for, significantly explaining 36% of the total variance. Conversely, Taşçı and Turan (2021) reported that vocabulary depth made no significant unique and direct contribution to L2 reading comprehension for any of the high, intermediate, or low L2 reading proficiency groups. Based on the findings of Taşçı and Turan (2021), it is suggested that for their participants, depending on their proficiency level, either syntactic knowledge or vocabulary breadth was a more critical factor for reading success than vocabulary depth, and specifically for highly proficient readers, syntactic knowledge was more significant. This discrepancy in findings might be attributed to the differing statistical power of the two studies, given that Taşçı and Turan (2021) included a much larger sample of 254 students, whereas Susoy and Tanyer (2019) involved only 30 participants.

These seemingly contradicting findings from different studies have created a significant amount of discussion within the field. Jeon and Yamashita's (2014) meta-analysis provides valuable context. As previously mentioned, they discovered that, on average, reading comprehension and L2 vocabulary and syntactic knowledge have very strong correlations. In fact, the average correlation for syntactic knowledge was slightly higher than that for vocabulary (roughly $r = .85$ for syntactic knowledge vs. $r = .79$ for vocabulary knowledge). This highlights the significance of both language components in general. The meta-analysis reveals that vocabulary knowledge and syntactic

knowledge are so intertwined in supporting reading that good readers are likely to be good in both. However, whether vocabulary knowledge or syntactic knowledge appears as the stronger predictor in a given study can depend on various factors. One major factor is the learner's proficiency level. Kim and Cho (2015) examined the relative contributions of vocabulary and syntactic knowledge to L2 reading comprehension in Korean high-school EFL learners by dividing participants into low-, intermediate-, and high-proficiency subgroups and running multiple regression analyzes. They found that in the low-proficiency subgroup, neither vocabulary nor syntactic knowledge significantly predicted reading comprehension performance. In the intermediate-proficiency group, vocabulary knowledge emerged as the primary predictor, whereas in the high-proficiency group, syntactic knowledge accounted for significant additional variance in comprehension. Another factor is the nature of the reading comprehension measure. Different tests (multiple-choice questions, cloze tests, free recall, etc.) place different demands on linguistic knowledge. Shiotsu and Weir (2007) pointed out that the way reading is evaluated can affect whether vocabulary knowledge or syntactic knowledge has a greater impact. The reading test style they used for their study might have been especially sensitive to syntactic knowledge. However, because studies that use cloze tasks might inherently give vocabulary knowledge a larger role, since the blanks typically target content words. Furthermore, there are differences in the definition and assessment of syntactic knowledge; some assessments focus on explicit understanding of syntax and morphology rules, which may be more in line with formal grammar training, while others assess implicit parsing skills. Such differences can lead to different outcomes in research.

The relative contribution of vocabulary knowledge vs. syntactic knowledge to L2 reading is inconclusive when examining all studies, according to Zhang (2012) and a systematic review by Choi and Zhang (2021). This is because it frequently depends on learner backgrounds, variations in research design, and which aspect of language or reading is being emphasized. It can be challenging to statistically separate the effects of vocabulary knowledge and syntactic knowledge because they are frequently so closely related (students who excel in one are typically also good at the other).

According to Bernhardt (2011), the compensatory model of second language reading describes a process that is multidimensional and dynamic, where the interaction involves knowledge being able to override linguistic deficiencies. This means that readers

with low-level second-language skills can, in certain contexts, exhibit high-level comprehension abilities. This perspective implies that strengths in one area, such as vocabulary (word) knowledge, can compensate for weaknesses in another, such as grammatical shortcomings, and vice versa. For instance, Bernhardt (2005) elaborates on this compensatory interaction, explaining that as word knowledge develops, it frees up resources to operate on more complex syntactic patterns. Such synergy among knowledge sources allows one component to appear more prominent or to take over for other knowledge sources that are inadequate or nonexistent in particular situations.

Research indicates that both vocabulary and syntactic knowledge are necessary for L2 reading, however their relative relevance may differ. It is true that the majority of studies demonstrate that vocabulary is a very dominant feature; however, a considerable number of studies also highlight syntactic knowledge as being vital, which serves as a reminder that syntactic knowledge should not be neglected in the training of second language reading. It is apparent from the contradictory findings that reading in a second language is a multidimensional skill: vocabulary knowledge and syntactic knowledge work together (along with other abilities such as decoding, background knowledge, and so on). According to one review, there is no clear evidence supporting which type of linguistic knowledge is more contributory than the other in all circumstances, and variations in participant proficiency and the methods used to measure reading, vocabulary knowledge, and syntactic knowledge are frequently the cause of inconsistent results (Choi & Zhang, 2021). In other words, context is important and there is no one-size-fits-all solution to the vocabulary knowledge vs. syntactic knowledge debate. In summary, literature presents a mixed picture: vocabulary knowledge often emerges as crucial, yet many studies (and a meta-analysis) underscore that syntactic knowledge can be equally important, especially for advanced readers or certain test formats. This inconsistency, particularly visible in the limited research on Turkish EFL learners, points to the need for further investigation - which the current study will undertake.

Summary of Syntactic Knowledge Section

In conclusion, grammatical (syntactic) knowledge is widely acknowledged to be an essential part of L2 reading comprehension. Learners must be able to parse sentence structures and understand grammatical relationships to extract meaning from text. According to the findings of much research, there is a high correlation between the level

of syntactic knowledge that learners possess and their reading comprehension success. However, there is still controversy over whether syntactic or vocabulary knowledge is more crucial for L2 reading. According to the findings of a number of research syntactic knowledge turns out to be a more accurate predictor than vocabulary in certain contexts (Atai & Nikuinezhad, 2012; Shiotsu & Weir, 2007). On the other hand, many researchers discovered that vocabulary knowledge is more important than syntactic knowledge after a fundamental language barrier is reached. There is evidence from meta-analysis that implies both are important, and in fact, they are significantly intercorrelated in terms of promoting reading. It is likely that their relative impacts are context bound; for low-proficiency readers or when dealing with syntactically complex academic texts, insufficient syntactic knowledge can be a major stumbling block; for higher-proficiency readers or vocabulary-dense texts, vocabulary gaps might be the bigger issue. It is evident that reading comprehension can be limited by deficiencies in any area. A learner with poor syntactic knowledge will struggle to interpret complex sentences even if they know the word meanings; a learner with limited vocabulary will miss key content words even if they understand the syntax. Therefore, when explaining and teaching L2 reading, both dimensions of linguistic knowledge should be taken into account. For teachers, the conclusion is that they should pay equal attention to the development of vocabulary knowledge and the instruction of syntactic knowledge, while also adapting their teaching methods to the specific requirements of their students. L2 readers are only able to tackle texts with complete comprehension if they possess both a strong vocabulary foundation and excellent grammar skills.

After examining vocabulary and syntactic information separately, research directly comparing their relative contributions can now be considered. Essentially, the question becomes which type of knowledge most accurately predicts L2 reading comprehension and under what conditions.

Comparative Studies: Vocabulary vs. Syntactic Knowledge

This thesis aims to determine whether of the two factors, vocabulary or syntactic knowledge, is a better predictor of reading comprehension under different settings. Numerous studies compared the impact of vocabulary and syntactic knowledge on reading outcomes. These studies were carried out in a variety of settings (including distinct student groups, skill levels, first language origins, and so on), and their

conclusions were occasionally contradictory, as was addressed before. This part of the literature review synthesizes comparative literature findings to identify patterns and insights.

In general, literature portrays a complicated picture of the present situation. Many studies show that vocabulary knowledge plays a larger role in L2 reading, frequently explaining more variance in comprehension than syntactic knowledge. Brisbois (1995), in a study of English reading by French L1 learners, discovered that vocabulary knowledge had a bigger impact on reading scores than syntactic knowledge. Similarly, van Gelderen et al. (2004) found that vocabulary knowledge was a better predictor of reading success than syntactic knowledge. In a Korean EFL environment, Shin and Kim (2012) found that vocabulary knowledge was a better predictor of comprehension than syntactic knowledge for college students. Zhang (2012), who used structural equation modeling to test Chinese university EFL learners, discovered that vocabulary knowledge was the most influential element overall and notably, he did not argue that syntactic knowledge's effect was transmitted through vocabulary; rather, he concluded that syntactic knowledge's apparent influence was largely overlapping with vocabulary knowledge. The findings of these studies are consistent with the commonsense assumption that the most important factor in achieving successful reading comprehension is being familiar with the words included inside a text. Indeed, some academics contend that vocabulary knowledge plays the most crucial role in achieving L2 reading success, especially beyond the initial stages of learning (Nation & Coady, 1987; Stæhr, 2008; Zhang, 2012). A broad lexicon enables readers to decode the majority of the content words in passages, which provides them with the comprehension of meaning. On the other hand, learners are fundamentally hindered regardless of their level of syntactic knowledge if they do not have a large vocabulary.

On the other hand, a smaller but noteworthy group of studies has come to the conclusion that syntactic knowledge is of equal or even higher significance in some situations. The most prominent is Shiotsu and Weir (2007), which showed syntactic knowledge out-predicting vocabulary knowledge for Japanese EFL learners on an academic reading test. As previously stated, Atai and Nikuinezhad (2012) concluded that syntactic knowledge was the strongest predictor of reading comprehension among Iranian EFL learners. In a study of Turkish university prep-class students, Taşçı and Turan (2021) found that syntactic knowledge was more important for reading

comprehension than different dimensions of vocabulary knowledge. The study demonstrated that vocabulary breadth, vocabulary depth, and syntactic knowledge all connected with reading comprehension, but syntactic knowledge had the strongest distinctive contribution for the high reading proficiency group in regression analysis. The authors suggested that Turkish EFL learners, who generally receive extensive grammar instruction, differed significantly in their reading performance, possibly more than vocabulary.

Why do these comparative studies produce different results? Analysis and reviews provide several reasons: As was said before, the level of proficiency can act as a mediator between the relative relevance of vocabulary and syntactic knowledge. Syntactic knowledge may be a limiting aspect at lower skill levels. If learners have not learned basic syntactic structures, their reading will be restricted even if they know some vocabulary. This is because syntactic knowledge is a fundamental component of language formation. When learners reach higher levels of competency, almost all of them have a firm grasp on fundamental syntactic knowledge and vocabulary knowledge, particularly academic lexicon, becomes the determining factor. For instance, in the study by Susoy and Tanyer (2019), which involved Turkish university students majoring in English, depth of vocabulary knowledge emerged as the single best predictor of reading comprehension, while syntactic knowledge showed no significant relationship for their cohort. In contrast, Nergis (2013) found that for her group of advanced EAP learners, the strongest predictors were a combination of syntactic awareness and, most significantly, metacognitive reading strategies, while depth of vocabulary knowledge was not a uniquely strong predictor.

It is also possible for the findings to be affected by the type of reading comprehension exam and the linguistic measurements that are employed. Standard multiple-choice reading comprehension tests, such as TOEFL or university entrance exams, may have a greater impact on grammar due to questions that indirectly assess syntactic knowledge (e.g., understanding pronoun referents or sentence relationships). On the other hand, research that makes use of more comprehensive outcome measures (such as overall course performance or extensive reading tasks) might be more accurate in reflecting the cumulative influence of vocabulary. Furthermore, whether and how vocabulary depth is measured might influence the results as well; including a depth measure frequently enhances the perceived importance of vocabulary knowledge (as

evidenced in Susoy and Tanyer, (2019), when vocabulary depth surpassed syntactic knowledge).

Some researchers suggest that learners whose first language is very different from English (for example, Japanese or Turkish) may find grammar to be a relatively more difficult obstacle to overcome (due to the fact that the syntax is different). On the other hand, learners whose first language is more grammatically similar to English or who have a strong command of their first language may find that vocabulary is an important obstacle to overcome. Bernhardt (2005) noted that some of the variance in L2 reading comes from L1 literacy - if a learner has strong L1 reading skills, they might cope with complex grammar better (by inference or transferring reading strategies), making vocabulary knowledge the distinguishing factor instead. On the other hand, if the grammatical systems of the first and second languages are different, then the second language's grammar might be a bottleneck and cause a delay. It is possible that this is one of the reasons why certain research conducted in East Asian environments (which have larger structural variations between L1 and L2) discover a greater grammar effect, whereas studies conducted in European contexts frequently focus more emphasis on vocabulary once fundamental grammar has been established.

Differences in sample size, analytical methods, and operational definitions can significantly impact research interpretations in reading comprehension studies. For instance, studies employing simpler statistical analyzes like bivariate correlations often yield inconclusive results because they may not account for the shared variance between highly correlated linguistic factors like vocabulary knowledge and syntactic knowledge. In contrast, multiple regression and more sophisticated techniques such as Structural Equation Modeling (SEM) are considered more rigorous, capable of providing more reliable estimates of unique contributions and controlling for measurement error (Zhang, 2012).

While SEM studies are valued for their ability to disentangle the unique contributions of various factors, their findings are not always uniform. For example, a study by Zhang (2012) using SEM with advanced Chinese EFL learners indeed suggested that vocabulary exerted a strong direct effect on reading comprehension, with syntactic knowledge's direct effect being comparatively modest once vocabulary knowledge was accounted for. However, it is crucial to acknowledge that other prominent SEM studies,

such as those by Shiotsu and Weir (2007), reached divergent conclusions, finding syntactic knowledge to be a stronger predictor of reading comprehension than vocabulary, even for high-ability learners. This highlights that the relative importance of these factors can vary depending on various study characteristics, including the L2 proficiency of the participants.

Furthermore, how researchers define, operate, and measure key constructs also plays a critical role. Studies may differentiate specific subskills of vocabulary (e.g., breadth vs. depth, polysemy, collocation, morphological knowledge) or syntactic knowledge (e.g., explicit vs. implicit knowledge, parsing speed, sentence-level comprehension) from global text understanding. This means that different measures of reading comprehension (e.g., literal comprehension tasks versus summary writing, or general academic texts versus specialized content-area texts) can alter the balance of observed vocabulary and syntactic factors. For instance, vocabulary breadth might be a stronger predictor for general comprehension or multiple-choice tasks, while vocabulary depth could be more critical for tasks requiring deeper text processing, such as summary writing or inferential comprehension.

These varied research designs, participant characteristics, and measurement choices collectively contribute to the mixed findings or incongruous results that are frequently discussed and analyzed in systematic reviews and meta-analyses in the field of second language reading comprehension. The lack of consensus often necessitates further investigation with larger, more diverse samples and refined methodologies.

An increasing amount of research argues that vocabulary and syntactic knowledge should not be viewed as competing factors in second language (L2) reading. Instead, they are complimentary and mutually dependent aspects of language competence. This complex interaction is frequently captured in the concept of lexico-grammar, which holds that there is no distinct barrier between the lexicon and grammar. In empirical investigations, both were discovered as high evidence correlates of L2 reading ability, and many scholars believe they are equally important predictors of understanding.

As a result, scholarly discourse has switched from debating whether vocabulary knowledge or syntactic knowledge is more important to looking into the circumstances under which one may become more predictive than the other. Research has produced

contradictory and conflicting findings regarding their respective contributions, which are frequently linked to many crucial aspects. A significant aspect is the learners' L2 competency; the relative relevance of each component appears to alter as proficiency progresses. While some research implies that syntactic knowledge is more influential at lower skill levels and vocabulary at higher levels, others find the opposite, revealing a complex, context-dependent relationship. Furthermore, methodological changes in research design have a major impact on the outcomes. The way constructs are operationalized, for example, evaluating vocabulary breadth against depth or explicit versus implicit syntactic knowledge as well as the type of reading comprehension assessment utilized can all have an impact on the apparent predictive value of the components.

This discussion revolves around the concept of a syntactic threshold, which corresponds to the broader linguistic threshold theory. This hypothesis proposes that a minimal degree of L2 linguistic ability, including grammatical competence, is required for effective reading comprehension and successful transfer of first language (L1) reading skills. Without a solid understanding of syntax, readers may be unable to generate meaning units above the word level, requiring them to adopt a more localized processing technique that undermines text-level coherence. This syntactic fluency serves as a gateway, allowing learners to apply higher-order cognitive skills to their reading experience.

However, once this syntactic threshold is passed, the idea that vocabulary is the obvious primary driver of reading achievement must be carefully qualified. While vocabulary knowledge is widely regarded as a powerful predictor of reading comprehension in a variety of contexts, the evidence does not always support its priority. For example, some meta-analytic data has indicated a somewhat greater association between syntactic knowledge and L2 reading comprehension, implying that the two components are of equivalent relevance. Furthermore, certain studies found syntactic understanding to be a more powerful predictor than vocabulary, particularly for advanced learners working with complicated texts. As a result, the predictive weight of each component varies depending on the research design, measurement choices, and learner characteristics.

In conclusion, the relationship between vocabulary knowledge, syntactic knowledge, and L2 reading comprehension is a complicated and dynamic one. Rather than a straightforward hierarchy, the data suggests a complimentary system in which the relative contributions of the vocabulary knowledge and syntactic knowledge can differ dramatically based on a variety of linguistic, individual, and environmental factors.

In order to provide a concise summary of the comparative research, it is important to note that numerous studies and meta-analyzes prove that vocabulary knowledge, particularly vocabulary breadth, is a strong predictor of L2 reading in general. The relevance of syntactic knowledge, on the other hand, has been shown to be comparable to or even surpass that of vocabulary in a number of studies, particularly those that include specific learner profiles or test formats. Differences in learner proficiency, text demands, L1 background, and study techniques are substantially responsible for the inconsistencies that were observed. When it comes to deciding between vocabulary knowledge and syntactic knowledge, there is no clear winner; rather, both types of dimensions are essential, and the relative weight of each type of knowledge varies depending on the context. Therefore, teachers or researchers of second languages have a responsibility to pay attention to both vocabulary and syntax, as well as to identify situations in which an individual might require additional reinforcement. For instance, learners with low proficiency may benefit from intensive grammar support initially, whereas learners with advanced proficiency may require more attention to expanding and deepening their vocabulary.

Finally, it is important to point out that in actual practice, vocabulary knowledge and syntactic knowledge are not completely distinct from one another. In many cases, a statement that has a complicated syntax also contains specialized vocabulary. On the other hand, a sentence that is straightforward but contains words that are difficult to understand is still not comprehensible. Being able to read effectively requires a combination of having a sufficient amount of vocabulary depth, acceptable vocabulary breadth, and a strong ability to parse grammatical structures. One of the most effective methods is to make sure learners develop all of these concurrently. Given these mixed findings globally, it is crucial to investigate the vocabulary vs. syntax question in particular local contexts. The next section focuses on research (and its scarcity) in the Turkish EFL context, to highlight why the current study is necessary.

Turkish EFL Context: Vocabulary and Syntactic Knowledge

There have been very few studies that have specifically focused on the Turkish EFL environment in terms of the roles that vocabulary knowledge and syntactic knowledge play in reading comprehension. In Türkiye, English is taught as a foreign language in a formal school setting (typically beginning in late primary or middle school), and traditionally, there has been a heavy emphasis on grammar instruction in curricula, along with vocabulary learning, typically through reading passages and memorization. This makes Türkiye an interesting context because English is taught as a foreign language. In most cases, by the time Turkish students enter university, they have already completed years of English instruction and taken high-stakes examinations. As a result, they have created a profile of their strengths and limitations in language abilities, which may be different from those of learners in other contexts.

A distinctive feature of the Turkish context is the university entrance examination. It includes a foreign language part known as YDT. This exam historically placed significant weight on reading comprehension passages as well as discrete vocabulary and grammar questions. Not only is it necessary to comprehend the reading texts in order to achieve success on these examinations, but it is also necessary to be familiar with the rules of explicit grammar (for fill-in-the-blank grammar items) and a wide range of vocabulary items (for synonym/translation issues). Consequently, high school instruction often trains students intensively in grammar rules and exam-oriented word lists. Despite this, many learners enter university with gaps in either vocabulary breadth or functional grammar use (or both), which can affect their academic reading.

According to the research that has been conducted in Türkiye, there is a trend that is consistent with the findings of other countries: vocabulary knowledge and syntactic knowledge are both important, but the relative weight that each carries can vary. A study conducted by Nergis (2013) investigated the characteristics that influence academic reading comprehension among students enrolled in English for Academic Purposes (EAP) programs at Turkish universities. Through her research, she investigated the level of vocabulary knowledge, syntactic awareness, and metacognitive reading strategies. Her findings revealed that syntactic awareness was a more accurate predictor of academic reading ability in that group than vocabulary depth, and that the employment of metacognitive strategies also played a crucial part in the process. In other words, learners

with a stronger understanding of complex English grammar (and the ability to recognize and analyze grammatical structures in academic writings) tended to understand those texts better, even more so than those with a deeper vocabulary knowledge. Nergis interpreted this in light of the fact that academic texts often feature challenging syntax (long sentences, embedded clauses), and that her participants already had a reasonably good vocabulary range due to studying in an English-medium program, making syntactic knowledge the differentiating factor. This is consistent with the threshold hypothesis: after the learners had a solid vocabulary knowledge, differences in syntactic proficiency determined who could manage the dense academic text more effectively.

Susoy and Tanyer (2019) concentrated their attention on 30 university students majoring in the English Language Teaching (ELT) Department of a Turkish public university. While the exact proficiency level is not specified within the direct excerpt, researchers citing this work refer to the participants as advanced EFL/EAP learners or proficient L2 readers, implying a relatively high language proficiency. The study directly compared vocabulary breadth, vocabulary depth, and syntactic knowledge as predictors of L2 reading comprehension. Their findings revealed a strong and statistically significant relationship between vocabulary depth and L2 reading comprehension. In a regression analysis, vocabulary depth emerged as the best predictor of L2 reading comprehension when the effects of vocabulary size (breadth) and syntactic knowledge were controlled for, significantly explaining 36% of the total variance in reading comprehension scores. In contrast, the study found neither a strong nor a significant relationship between syntactic knowledge and L2 reading comprehension, indicating that it did not provide any distinctive predictive ability beyond the vocabulary measurements in their sample.

This implies that for these participants, vocabulary knowledge - especially vocabulary depth - was the key driver of reading success, more so than syntactic knowledge. This outcome could reflect that for proficient L2 learners, such as ELT majors, syntactic knowledge may be sufficiently developed and standardized, meaning it no longer serves as a primary differentiating factor in reading comprehension. In such cases, further extra syntactic tuition might give smaller returns than an emphasis on vocabulary building, and variations in the richness and quality of word understanding (vocabulary depth) become more critical in distinguishing reading performance. The research conducted by Susoy and Tanyer (2019) highlights the significance of examining

the depth of vocabulary in the Turkish EFL context, rather than focusing solely on vocabulary breadth. This is particularly relevant given that traditional language teaching has often emphasized vocabulary size (breadth) and grammatical rules. In such an educational environment, the nuance of vocabulary depth could become a defining characteristic that differentiates advanced students' reading comprehension abilities.

The study conducted by Taşçı and Turan (2021) aimed to evaluate the relationship between vocabulary breadth, vocabulary depth, and syntactic knowledge in predicting reading comprehension in Turkish English as a Foreign Language (EFL) learners at three different levels of proficiency. They found that the most reliable predictor changes as one becomes more proficient. For high-proficiency readers, syntactic knowledge was the most powerful predictor ($\beta = .374$, $p = .005$). Vocabulary breadth also made a statistically significant contribution ($\beta = .305$, $p = .015$), but not as strongly as syntactic knowledge, while vocabulary depth did not significantly contribute to the prediction ($\beta = -.100$, $p = .415$). In the case of intermediate readers, vocabulary breadth was the most important predictor ($\beta = .354$, $p = .001$). Syntactic knowledge had a significant, though less impactful, contribution ($\beta = .250$, $p = .011$). Similar to high-proficiency readers, vocabulary depth did not significantly contribute to the reading comprehension of intermediate readers ($\beta = -.125$, $p = .202$). For low-proficiency readers, the only factor that accurately predicted reading scores was vocabulary breadth ($\beta = .379$, $p = .006$). Syntactic knowledge ($\beta = .181$, $p = .133$) and vocabulary depth ($\beta = .007$, $p = .954$) did not provide a statistically significant direct contribution when entered with vocabulary breadth into the regression model.

Their study indicates that there is no one sort of knowledge that predominates across all levels of proficiency. Rather, the balance between vocabulary breadth, depth, and syntactic knowledge is dependent on the overall proficiency of the learners. In addition to these primary studies, more comprehensive educational analyzes in Türkiye point to vocabulary as a problem area that needs to be addressed. According to Kırkgöz (2009) despite the implementation of high-level policy reforms and the shift toward communicative approaches, effective implementation is hindered by insufficient teacher training and inadequate classroom resources at the micro (instructional) level. This, in turn, restricts learners' opportunities to engage in authentic English use and, consequently, their vocabulary development.

Exam results are a reflection of this policy gap: official YDT exam data (ÖSYM, 2025) shows that average scores in the English section, which includes reading passages with comprehension questions, remain moderate. This indicates that a significant number of students struggle with full comprehension of those texts, most likely due to vocabulary gaps and complex sentences that they find difficult to parse. Furthermore, Sendur and Kılıçkaya (2024) conducted a comparative analysis of foreign language examination sections in Türkiye and Poland, observing that the Turkish examination, particularly the YDT, mainly focuses on reading ability. Their analysis further indicates that Türkiye's prevailing assessment practices prioritize rote memorization and regurgitation of language components, encouraging learners to focus solely on mastering grammatical rules and vocabulary knowledge.

This results in a diminished emphasis on communication and practical language use, with mainly grammar-, reading-, and vocabulary-based learning and teaching practices being observed in relation to foreign language exams in Türkiye. This may encourage students to view vocabulary and grammar as distinct components of their study, rather than integrating them through extensive reading practice. Therefore, learners may possess a large number of rules and word meanings in isolation, but they lack the experience to apply this knowledge to real-world reading contexts, which can result in poor comprehension when confronted with unfamiliar phrasings or language that is less formulaic. Taken together, these policies, performance, and assessment factors underscore the need for integrated vocabulary and grammar instruction grounded in authentic reading experiences.

In terms of vocabulary breadth, many EFL students, including those in countries like Türkiye, typically build a foundational vocabulary which encompasses the most frequent words in English (Nation, 2013). This initial knowledge often enables them to understand a significant portion of general texts. However, expanding beyond this fundamental level to acquire the much larger vocabulary size required for fluent and independent reading of complex materials is a substantial task that often does not occur without considerable and sustained engagement with the language, particularly through extensive reading. Consequently, while students may attain a vocabulary coverage that provides a minimum criterion for comprehension, they frequently find it challenging to reach the optimal threshold coverage necessary for comfortable, unassisted reading of

authentic texts. This difference means that in academic settings, such as English-medium universities, learners may understand the general meaning of their readings. They may struggle to interpret finer details, understand foreign terms from context, or comprehend implicit information. They frequently have trouble because they are unfamiliar with lower-frequency vocabulary and idioms that aid comprehension. In terms of grammar, these students generally understand the fundamentals of English syntax, such as basic tenses and typical sentence patterns. Despite this, they might struggle with more sophisticated forms like inversion and reduced relative clauses, which are commonly used in academic writing and necessitate a higher level of grammatical proficiency.

The few Turkish studies that were conducted, notwithstanding their insightful nature, show the necessity of conducting additional research in this setting. It appears that the vocabulary depth has been under-emphasized in past instruction, and there is evidence to suggest that developing deeper word knowledge could result in improvements in reading comprehension success. At the same time, it is essential to make certain that students are able to comprehend complicated syntax. This is especially important when they are transitioning to reading texts that are specialized to a discipline or research articles, which can contain lengthy sentences that are difficult to understand. Susoy and Tanyer (2019) and Taşçı and Turan (2021) utilized a test of English as a Foreign Language (TOEFL) or a TOEFL-based reading comprehension study. However, both studies were constrained by smaller, more homogeneous samples (predominantly intermediate-advanced learners), leaving open the question of how vocabulary breadth, depth, and syntactic knowledge contribute to reading comprehension across a larger, proficiency-diverse Turkish EFL population. This gap is addressed by the current study, which includes a large sample of approximately 500 learners. The study quantifies the unique contributions of vocabulary size, vocabulary depth, and syntactic knowledge within the context of standardized testing.

In summary, the Turkish context is reflective of the findings from the global context, which are that vocabulary knowledge and syntactic knowledge are both essential, but with some differences. The richness of vocabulary appears to have a significant influence in the reading success of many Turkish learners, which may be the result of earlier instructional imbalances (for example, years of teaching that predominantly concentrated on grammar). It has been demonstrated by Nergis (2013) and other

researchers that syntactic knowledge continues to be a vital foundation and has the potential to become a determining factor if it is not appropriately developed. The relatively small number of studies and somewhat conflicting results make it an open question which knowledge type most limits Turkish learners' reading comprehension on average. This is precisely the gap the current research intends to fill, thus providing locally relevant evidence to guide teaching practice in Türkiye's EFL programs.

Summary and Research Gap

This literature review has highlighted that both vocabulary knowledge and syntactic knowledge are crucial for L2 reading comprehension. Theoretical models (Simple View, C-I model, etc.) and empirical studies meet on the understanding that without sufficient knowledge of vocabulary knowledge and syntactic knowledge, L2 readers cannot successfully construct meaning from texts. Vocabulary size provides the basic fuel for comprehension - the more words a reader knows, the more of the text they can decode. Vocabulary depth contributes to this because it enables a more accurate and nuanced comprehension as well as by assisting in inferencing. Syntactic knowledge, on the other hand, enables readers to thread those words together into coherent propositions and to comprehend meanings that are difficult at the sentence level. A lack of syntactic knowledge can lead to misunderstandings or confusion, even if all the words are familiar to the reader.

A major theme in the literature is the interdependence of vocabulary knowledge and syntactic knowledge in reading. Since they are highly correlated with one another and frequently evolve together, it might be challenging to separate out their unique contributions. However, studies that attempted to compare them yielded contradictory findings, which suggests that the issue of which accurately predicts reading better does not have a straightforward answer that can be applied universally. Instead, it seems to be dependent on elements like the level of proficiency of the learner, the complexity of the text, and the techniques of measurement. This nuanced perspective steers researchers away from absolutist claims like vocabulary knowledge is always more important than syntactic knowledge or vice versa. As an alternative, it emphasizes that both are significant, and that the relative weight of their significance fluctuates depending on the context. Crucially, the review reveals some gaps and ambiguities that warrant further investigation.

There are many studies which focus on vocabulary (usually just breadth) or syntactic knowledge alone, but very few examined vocabulary breadth and depth together with syntactic knowledge (e.g., (Jeon & Yamashita, 2014); (Schmitt, 2014)). This means understanding of how these factors jointly interact is limited. For example, one might ask: how would a learner with moderate vocabulary size but high depth, and strong grammar, perform in reading compared to a learner with a large vocabulary but shallow depth and weaker grammar? This issue will be addressed by current research, which will incorporate all three predictors into a single research design. By examining their combined and distinct effects, a better understanding of linguistic predictors of reading can be assessed. As a result, this helps to prevent the issue from being oversimplified to one versus another, when all three contribute in ways that overlap with one another.

The evidence in the Turkish EFL context is scarce and somewhat inconsistent. While there is extensive research on L2 reading in general, studies that specifically compare the relative contributions of vocabulary and syntactic knowledge within a single research design remain limited. Among the few key studies addressing this specific comparison (e.g., Nergis, (2013); Susoy & Tanyer, (2019); Taşçı & Turan, (2021)), results vary significantly due to differences in instruments and samples. Consequently, there is no clear consensus regarding whether Turkish students struggle more with vocabulary than with syntax when it comes to reading. Some of the studies highlight the importance of grammar understanding, while others highlight the importance of vocabulary richness. This discrepancy shows that additional data is required, particularly with a bigger sample size and a combination of breadth and depth measures, to determine the typical scenario for Turkish university EFL learners. This study, with 493 participants and standardized measures, is designed to fill this gap.

There is a theoretical gap in understanding threshold effects between vocabulary knowledge and syntactic knowledge. It remains underexplored at what point (for instance, at what vocabulary size) syntactic knowledge starts to significantly contribute, or at what level of grammar competence vocabulary becomes the limiting factor. There are studies that suggest that vocabulary is more important at later stages, whereas grammar is more important at earlier levels; however, this has not been quantified in a conclusive manner. Interactions in the data of this study might provide light on this; for instance, readers with lower scores may benefit more from focusing on grammar, while readers with higher

scores may benefit more from expanding their vocabulary. By including a range of proficiency levels, it might be possible to determine whether there is evidence of such a crossover point in the sample.

Another critical gap lies in the translation of research findings into pedagogical practice. While many studies confirm that both vocabulary and syntax are correlated with reading, the lack of consensus regarding their relative importance leaves educators without clear guidance on where to concentrate instructional effort (Grabe & Yamashita, 2022; Nation, 2013). This study addresses this practical ambiguity by seeking to identify the strongest predictor among the three variables. By determining whether vocabulary gaps or syntactic deficiencies are the primary bottleneck for Turkish EFL learners, the research aims to provide evidence-based recommendations for curriculum design specifically, whether to prioritize lexical expansion, deeper word knowledge, or syntactic processing to most effectively enhance reading comprehension. In the same way, if syntactic knowledge is a powerful predictor, then the question arises as to whether it should be taught overtly or implicitly for reading. The literature review alone cannot answer this, but identifying the stronger predictor gives direction for pedagogical focus which subsequent research can build on (for instance, designing vocabulary enhancement programs or grammar-processing training and checking their effect on reading). To summarize, clarifying the question of whether vocabulary knowledge or syntactic knowledge is more important in a particular setting is the initial step toward making judgments that are supported by evidence in the field of education, even if the actual implementation of such decisions requires additional practical study.

Despite increased study, vocabulary depth still receives less attention from researchers than breadth. Vocabulary depth measurements, such include Word Associates exams, collocation knowledge exams, and other similar assessments, are not typically utilized in classrooms, particularly in EFL contexts like Türkiye. An essential concern for learners who may know fewer words but use them extremely well is whether these learners with a high vocabulary depth (compared to their breadth) can compensate for a smaller vocabulary size in reading comprehension. According to the findings of this literature review, depth does have certain distinct advantages; nevertheless, additional data would be helpful in validating its relevance in a variety of settings. Alongside vocabulary breadth and syntactic knowledge, this research places a significant

emphasis on depth, which will help the investigation of this line of inquiry. For example, it might be observed if some students with limited vocab size manage good reading scores because they have high depth (and vice versa).

Considering the above gaps, this study aims to clarify and extend the literature by providing strong data on the relative predictive power of vocabulary size, vocabulary depth, and syntactic knowledge for L2 reading comprehension, specifically focusing on Turkish EFL students. By doing so, it addresses the uncertain areas noted: the joint consideration of breadth/depth and syntactic knowledge, the context-specific insight for Turkish learners, and the practical question of which area might yield more gains if prioritized.

In conclusion, both aspects of linguistic knowledge are crucial pillars for reading. This is the conclusion of this chapter. Previous research has not provided a conclusive answer to the question of which of these two factors is more accurate in predicting the level of reading comprehension that Turkish students of English as a foreign language have in their second language. All the research that has been done so far provides answers that are occasionally contradictory. Through an empirical investigation, this thesis aims to provide a more definitive answer, thus filling a gap in the existing body of literature and guiding educators on whether to emphasize vocabulary expansion or syntactic development (or the extent to which each should be emphasized) for the purpose of improving reading outcomes. In summary, the literature offers a mixed view: sometimes vocabulary knowledge emerges as the key factor for L2 reading, other times grammar proves equally or more important, depending on learner profiles and contexts.

CHAPTER III

METHODOLOGY

Research Design

This study used a quantitative, cross-sectional, non-experimental correlational-predictive design. According to Creswell (2014), correlational research provides an opportunity to predict scores and explain the relationship among variables. This design was deemed appropriate for the current study as the primary objective was to identify the extent to which specific independent variables (vocabulary and syntax) predict reading comprehension outcomes without manipulating the learning environment. Consequently, the study examined the extent to which three dimensions of linguistic knowledge (vocabulary size (breadth), vocabulary depth, and syntactic knowledge) predict L2 reading comprehension among Turkish EFL undergraduates. No variables were manipulated; instead, existing differences in students' vocabulary and syntactic knowledge were measured and correlated to their reading performance. The purpose was to determine how each predictor (vocabulary size, vocabulary depth, and syntactic knowledge) affected reading outcomes. This research design is appropriate for addressing questions about which linguistic knowledge dimension best predicts an outcome, and it aligns with prior research investigating the roles of vocabulary and syntactic knowledge in reading comprehension (Hu et al., 2022). The study was able to determine the extent to which each independent variable explains variance in reading comprehension by employing a predictive correlational approach and multiple regression analysis inside the research, both on its own and in combination with other variables. In addition, this research design included hierarchical regression modeling, which allowed for the evaluation of incremental validity by observing how the prediction of reading comprehension improves when additional variables are added in a stepwise manner (via blocks). Given the study's cross-sectional, single-group design, all required steps were taken to ensure internal consistency in procedures and scoring.

Participants

The sample comprised 493 Turkish EFL undergraduates recruited by convenience sampling from various departments at Sivas Cumhuriyet University. In convenience sampling, the participants are chosen based on their willingness and availability for study

(Creswell, 2014). All participants were native speakers of Turkish who had taken or were currently taking compulsory or elective English courses as part of their undergraduate programs. Their ages ranged from 19–38 years ($M = 21.75$, $SD = 1.89$). The gender distribution was 396 females (80.3%) and 97 males (19.7%). Students were drawn from all four-year levels (Year 1: 140; Year 2: 83; Year 3: 237; Year 4: 33). Participation was voluntary and authorized by the institution; students were informed that their test scores would be used solely for research purposes. This cohort reflects the target population of Turkish university-level EFL learners whose reading comprehension may be associated with vocabulary size, vocabulary depth, and syntactic knowledge.

Table 1. Participant characteristics (N = 493)

Characteristic	Value
Institution & recruitment	Sivas Cumhuriyet University; convenience sampling
Language background	Native Turkish; enrolled in compulsory/elective English courses
Age (years)	Range = 19–38; $M = 21.75$; $SD = 1.89$
Gender	Female = 396 (80.3%); Male = 97 (19.7%)
Year of study	Year 1 = 140 (28.4%); Year 2 = 83 (16.8%); Year 3 = 237 (48.1%); Year 4 = 33 (6.7%)
Participation & ethics	Voluntary; institutionally authorized; scores used solely for research

Note. In convenience sampling, participants are selected based on availability and willingness (Creswell, 2014).

Instruments

Four instruments were used to measure the three independent variables (vocabulary breadth, vocabulary depth, syntactic knowledge) as well as the dependent variable (reading comprehension). Specifically, the study employed the Vocabulary Size Test (VST; (Nation & Beglar, 2007)) for breadth, the Word Associates Test (WAT; (Read, 2000)) for depth, a TOEFL-based Structure and Written Expression test (SKT) for syntactic knowledge (Phillips, 2001), and a TOEFL-based reading section (RCT) for reading comprehension (Phillips, 2001). These measures are standardized or widely used

in EFL research, which supports content coverage and comparability with existing studies. In the following sections, each instrument is described in terms of format and scoring, and reliability evidence from published sources is summarized. Because item-level data were not available in the present dataset, internal consistency could not be computed for this sample.

Vocabulary Size Test (VST)

The Vocabulary Size Test (VST) is a multiple-choice measure designed to estimate learners' receptive vocabulary size by sampling 10 items from each 1,000-word frequency band up to the 14,000 level (total 140 items) (Nation & Beglar, 2007). In this study, a 100-item form (covering the 1,000th to 10,000th word-frequency bands) was adapted. This range was deemed most appropriate for the target population of university-level EFL learners, whose functional vocabulary is unlikely to extend significantly into the 11,000–14,000 frequency bands. This adaptation focuses the measurement on the most relevant lexical range while reducing test-taker fatigue. (See Appendix A). Higher-numbered, lower-frequency bands test items (11k–14k) were not included since it is highly unlikely that those items would be known by average non-advanced English as a Foreign Language (EFL) learners. Including those items would result in an increase in guessing noise and could potentially undermine construct interpretation for this particular cohort. Reducing the test length also helped to mitigate fatigue while maintaining broad coverage across frequency levels.

Each item presents a target word with a brief non-defining context and four options; one point is awarded for each correct response. In this study, the VST scores were not used to estimate an approximate number of words. Instead, they were used as a raw total score for analysis. It is simply a number that shows how broad a person's vocabulary is. The test was administered in paper-and-pencil format with a 50-minute time limit, which is typically sufficient for 100 items.

The VST has been extensively validated in terms of psychometric support. Beglar (2009) conducted a Rasch-based validation of the 14,000-word, 140-item VST and reported strong person and item reliability and good model fit, providing strong evidence for the test's reliability and construct validity across a range of proficiency levels. Subsequent work has continued to support the VST's acceptable internal consistency across formats. Because item-level data were not available in this study's dataset, internal

consistency could not be computed for the present sample; thus, the study relies on the published reliability findings for the VST.

Word Associates Test (WAT)

The Word Associates Test (WAT) measures vocabulary depth, i.e., the quality of word knowledge beyond mere form-meaning links. It was originally developed by Read (1993) and subsequently refined in Read (2000). The revised WAT comprises 40 items; each item presents an adjective (target) and eight options arranged in two four-word boxes (See Appendix B). Participants select four associates that are meaningfully related to the target word. These associations typically include paradigmatic (synonym/near-synonym) and syntagmatic (collocational) relations and may also reflect analytic relations (an option representing one dimension of the target's meaning) (Read, 1998, as cited in Taşçı & Turan, 2021).

Importantly, each item has exactly four correct responses (the distribution across the two boxes varies-1-3, 2-2, or 3-1-to reduce guessing). Scoring awards 1 point per correct selection for a maximum of 160 points (40×4). In this study, participants were told to choose all words related to the target. A 50-minute time limit was used for administration of the test while some studies reported shorter administration times (≈ 25 minutes) for similar cohorts, but this study's timing was standardized across sessions for logistical consistency.

The reliability of the (WAT) was previously examined by Read (1993) using the Rasch model (IRT). The reported internal consistency reliability values (KR-20) were found to be 0.93. The WAT has also been widely used in L2 research, and published studies report high internal consistency.

Syntactic Knowledge Test (SKT)

Participants' knowledge of English syntax was assessed with a TOEFL-based Structure and Written Expression test sourced from Longman Complete Course for the TOEFL Test (Phillips, 2001). The instrument comprised 40 multiple-choice items, mirroring the two standard TOEFL formats: (a) Incomplete sentences (15 items), in which the examinee selects the option that correctly completes a sentence, and (b) Error identification (25 items), in which the grammatically incorrect part of a sentence is identified (See

Appendix C). The items sampled a broad range of core syntactic structures like tense and aspect, modality, subject-verb agreement, relative and adverbial clauses, prepositions, and word order. Each item had four options with a single correct answer; responses were scored dichotomously (1 for correct, 0 for incorrect) and it yields a maximum score of 40. The test was administered in classroom settings in paper-and-pencil format with a 50-minute time limit.

Reading Comprehension Test (RCT)

The dependent variable, L2 reading comprehension, was assessed with a TOEFL-based reading test drawn from the same source (Phillips, 2001). The test comprised five academic-style passages (≈ 250 -350 words each) followed by 50 multiple-choice questions that sampled key sub-skills (identifying main ideas and specific details, making inferences, inferring vocabulary from context, resolving anaphoric reference, and identifying author stance/purpose) (See Appendix D). Participants had 75 minutes to complete all items; responses were scored 1 for correct and 0 for incorrect which yields a maximum score of 50. While the TOEFL format supports comparability with prior EFL reading studies, using a full section with five passages provided sufficient score range and helped avoid ceiling/floor effects. In educational measurement, ceiling and floor effects occur when many participants' scores cluster at the top or bottom limits of a test, respectively. These effects reduce the test's ability to distinguish between higher or lower performing individuals so they might weaken the test's sensitivity and reliability (Garin, 2014; Liu & Wang, 2021).

All instruments were administered in English, and the reading materials were used without modification from the published source. Administration procedures were standardized across classes (details in Section 3.4 Procedures), with a brief format reminder at the start of the session to ensure consistent task understanding.

Procedures

Data collection spanned four consecutive weeks in regular classroom settings. The sequence of administration was purposefully designed to mitigate potential order effects and manage cognitive load. One test was administered per week in the following order: Week 1 - Vocabulary Size Test (VST), Week 2 - Word Associates Test (WAT), Week 3 - Syntactic Knowledge Test (SKT), and Week 4 - Reading Comprehension Test (RCT).

Time limits were 50 minutes for VST, 50 minutes for WAT, 50 minutes for SKT, and 75 minutes for RCT.

This specific ordering was chosen for two key theoretical and practical reasons. First, the Reading Comprehension Test (RCT) was administered last to prevent 'priming' effects; If the reading passages had been presented earlier, the rich contextual clues within the texts might have inadvertently helped students recall or learn specific vocabulary or structures, thereby artificially inflating scores on the subsequent knowledge tests. Second, the sequence moved from discrete, lower-cognitive-load tasks (checking word recognition) to more integrative and demanding tasks (processing complex texts), allowing participants to adapt to the testing process without immediate fatigue.

Each session followed standardized procedures. At the start of the session, the researcher provided uniform instructions and a brief format reminder, emphasized that the activity would not affect course grades, and asked students to work independently without dictionaries or other aids. Tests were proctored throughout. Timing was strictly controlled (e.g., a five-minute warning was announced, and testing stopped exactly at the allotted time). To maintain a positive testing atmosphere over the four-week period, light refreshments were provided to all groups; these were not contingent on performance or participation.

Table 2. Four-Week Administration Schedule and Scoring Overview

Week	Test	Time	Standardization Notes	Scoring Summary
1	Vocabulary Size Test (VST)	50 min	Uniform instructions; no dictionaries or aids; proctored; 5-min warning	Dichotomous scoring (1 = correct, 0 = incorrect) Points awarded
2	Word Associates Test (WAT)	50 min	Uniform instructions; no dictionaries or aids; proctored; 5-min warning	per correct associate; no penalties for omissions
Week	Test	Time	Standardization Notes	Scoring Summary

3	Syntactic Knowledge Test (SKT)	50 min	Uniform instructions; no dictionaries or aids; proctored; 5-min warning	Dichotomous scoring (1 = correct, 0 = incorrect)
4	Reading Comprehension Test (RCT)	75 min	Uniform instructions; no dictionaries or aids; proctored; 5-min warning	50 MCQs across five passages; dichotomous (1/0)

After each session, answer sheets were collected and scored using official keys. Multiple-choice sections were scored dichotomously (1 = correct, 0 = incorrect). For the WAT, points were awarded for each correct associate; no penalties were applied for omissions, so only correct selections earned points. The resulting raw scores for all four measures were entered into a spreadsheet and then imported into SPSS for analysis (with checks to ensure data entry accuracy).

Data Preparation and Analysis

All scoring sheets were verified and entered in SPSS (Version 27). Inclusion required complete data on VST, WAT, SKT and RCT; cases with missing sessions or unmatched IDs were excluded listwise, which yields $N = 493$ at the end. Raw totals were converted to z-scores ($M = 0$, $SD = 1$) to place variables on a common metric given their different ranges (e.g., VST 0-100, WAT 0-160, SKT 0-40, RCT 0-50). Standardization does not change correlational or regression relations; it facilitates coefficient comparability and outlier screening. Variable labels and coding followed the instrument specifications described in Section 3.3. Analyses were conducted in SPSS with $\alpha = .05$ (two-tailed).

Data analysis comprised four stages. First, descriptive statistics (mean, standard deviation, minimum-maximum, skewness, kurtosis) were compiled for VST, WAT, SKT and RCT to reveal score distributions and screen for potential floor/ceiling effects; summary tables and charts for these results were provided in the Results and Discussion chapter. Second, multiple-regression assumptions were examined. These included linearity (scatterplots and partial regression plots), normality of residuals (residual histograms and normal P-P plots, with visual diagnostics prioritized given the large N), homoscedasticity (standardized residuals versus standardized predicted values),

multicollinearity (VIF and tolerance, using a conservative criterion of $VIF < 5$), outliers and influence (studentized deleted residuals, Mahalanobis distance with $df = 3$ at $p < .001$, and Cook's Distance), and independence of errors (Durbin-Watson). Diagnostic values and plots also appeared in the Results and Discussion chapter. Third, bivariate relationships among VST, WAT, SKT and RCT were estimated with two-tailed Pearson product-moment correlations; the full correlation matrix is presented in the Results and Discussion chapter. Finally, unique and incremental predictive power for RCT was tested with hierarchical multiple regression using theory-driven blocks (Block 1: VST; Block 2: + WAT; Block 3: +SKT), with a reverse-order model ($SKT \rightarrow VST \rightarrow WAT$) as a robustness check. At each step, R^2 and ΔR^2 (F-change) were evaluated; in the final model, standardized β coefficients with t and p values, 95% confidence intervals, and semi-partial (part) correlations were reported, and VIF/tolerance and Durbin-Watson as diagnostics were shown. Model summaries and coefficients were also presented in the Results and Discussion chapter.

In accordance with current academic ethical standards and institutional policies, it is declared that language editing tools were used during the writing process of this thesis solely for the purpose of checking grammatical accuracy and ensuring lexical precision. These tools were not used for data generation, data analysis, literature synthesis, or the formulation of research findings and conclusions, all of which remain the original and unassisted work of the author.

CHAPTER IV

RESULTS

This chapter presents statistical findings for 493 Turkish EFL learners and outlines the analytic sequence which was used to address the four research questions on the relative contributions of vocabulary size, vocabulary depth, and syntactic knowledge to L2 reading comprehension. The analyses were carried out in four steps. First, descriptive statistics were computed to summarize the distributions of the main variables and to check whether the data were suitable for parametric analyses. Second, to ensure that the data met the requirements of the planned statistical procedures, the assumptions of multiple regression were examined in detail. Third, bivariate (zero-order) Pearson correlations were calculated to determine the strength and direction of the relationships among vocabulary size, vocabulary depth, syntactic knowledge, and L2 reading comprehension. Finally, hierarchical multiple regression was calculated to assess the unique and incremental contributions of each linguistic predictor to L2 reading comprehension and to identify which of them was the strongest predictor when all were considered together.

The overall pattern of results showed that all variables were normally distributed and demonstrated sufficient variability, the regression assumptions were met, and all three linguistic variables (vocabulary size, vocabulary depth, and syntactic knowledge) were positively and significantly correlated with L2 reading comprehension. When entered into a hierarchical regression model, all three predictors emerged as significant, and syntactic knowledge makes the largest unique contribution to reading comprehension. The following sections present these findings in turn.

Descriptive Statistics

This section summarizes the distributional characteristics of the four main variables in the study: vocabulary size (VST), vocabulary depth (WAT), syntactic knowledge (SKT), and reading comprehension (RCT). Descriptive statistics were first computed using the raw scores to give an overview of the participants' performance levels and to display the actual observed ranges for each instrument. Because the instruments used in the study had different scoring scales (for example, the vocabulary size test and the word associates test had different maximum scores), the raw scores were later

standardized (i.e., converted to z-scores) so that all variables would be on a common metric ($M = 0$, $SD = 1$) for subsequent correlational and regression analyses.

As shown in Table 3, the raw score distributions indicated reasonable variability for all four measures. Vocabulary size (VST) scores ranged from 28 to 96 ($M = 54.65$, $SD = 14.30$), demonstrating that participants differed substantially in how many English word families they knew at a basic level. Vocabulary depth (WAT) scores ranged from 28 to 139 ($M = 94.04$, $SD = 18.45$), suggesting an even wider spread in how deeply students knew words in terms of meaning relations and collocations. Syntactic knowledge (SKT) scores varied between 5 and 39 ($M = 17.23$, $SD = 7.37$), which indicates that some students had quite limited grammatical/syntactic control while others had much stronger command of English sentence structure. Reading comprehension (RCT) scores ranged from 7 to 46 ($M = 25.75$, $SD = 8.84$), again pointing to meaningful individual differences in the ability to comprehend written English texts.

Skewness and kurtosis values for all variables fell within widely accepted limits for assuming approximate normality ($|\text{skew}| < 2$, $|\text{kurtosis}| < 7$; (Curran et al., 1996). VST (skewness = 0.90; kurtosis = 0.51) and SKT (skewness = 0.89; kurtosis = 0.12) showed a slight positive skew, meaning that a small number of students scored well above the mean. WAT, in contrast, showed a moderate negative skew (-0.62) and a slightly higher kurtosis value (0.83), indicating that a few students scored noticeably below the mean and that the distribution was somewhat more peaked. RCT had a very small positive skew (0.21) and a negative kurtosis value (-0.71), implying that the reading scores were fairly symmetric but slightly flatter than a perfect normal curve. Importantly, none of the distributions showed floor or ceiling effects: that is, scores were not clustered at the very bottom or very top of the scale. This indicates that the instruments were sufficiently sensitive to differentiate among learners with different proficiency levels.

Because the instruments operated on different raw scales, all four variables were standardized and used in z-form (zVST, zWAT, zSKT, zRCT) in the correlational and regression analyses. Standardizing the scores did not change the relationships among variables; it simply rescaled them onto a common metric, which made it easier to compare effect sizes and to interpret regression coefficients, especially when multiple predictors were entered into the same model.

Table 3. Descriptive statistics for non-standardized variables (N = 493)

	Min	Max	Mean	SD	Skewness	Kurtosis
VST	28	96	54.65	14.30	0.90 (0.11)	0.51 (0.22)
WAT	28	139	94.04	18.45	-0.62 (0.11)	0.83 (0.22)
SKT	5	39	17.23	7.37	0.89 (0.11)	0.12 (0.22)
RCT	7	46	25.75	8.84	0.21 (0.11)	-0.71 (0.22)

Values are based on raw (non-standardized) scores. Minimum and maximum scores are the observed values in the present sample. Skewness and kurtosis values are reported with standard errors in parentheses. Positive skewness values (e.g., VST, SKT) indicate a longer right tail (i.e., a few high-scoring students), whereas a negative skewness value (e.g., WAT) indicates a longer left tail (i.e., a few very low-scoring students). Kurtosis values near zero (e.g., SKT, VST) indicate a shape close to the normal distribution; higher values (e.g., WAT) indicate a slightly more peaked distribution, and negative values (e.g., RCT) indicate a flatter-than-normal distribution.

The standardized versions of these variables (not shown here in a separate table in this version) had, by definition, a mean of 0 and a standard deviation of 1 in the sample. The observed standardized scores extended approximately from -1.86 to +2.89 for vocabulary size, from -3.58 to +2.44 for vocabulary depth, from -1.66 to +2.96 for syntactic knowledge, and from -2.12 to +2.29 for reading comprehension. This confirmed once again that learners in the sample displayed a wide range of proficiency levels across all four constructs and that the distributions were appropriate for the planned parametric analyses.

Assumption Testing for Multiple Regression

The hierarchical multiple regression was examined to ensure it met all key assumptions of linear regression before interpreting the model results (See Appendix F). These assumptions include linearity, normality of residuals, homoscedasticity, lack of multicollinearity, independence of errors, and absence of significant outliers or influential data points. The following diagnostics indicated that each assumption was satisfied.

Linearity was evaluated by inspecting scatterplots and partial regression plots for each predictor (zVST, zWAT, zSKT) against the outcome (zRCT). The partial regression plots revealed approximately straight-line relationships between each predictor and reading comprehension, with no obvious curvature and this suggests that the assumption

of linearity was met. In addition, a scatterplot of standardized residuals versus standardized predicted values showed that residuals were randomly dispersed around zero with no discernible funnel shape or pattern (See Figure 2).

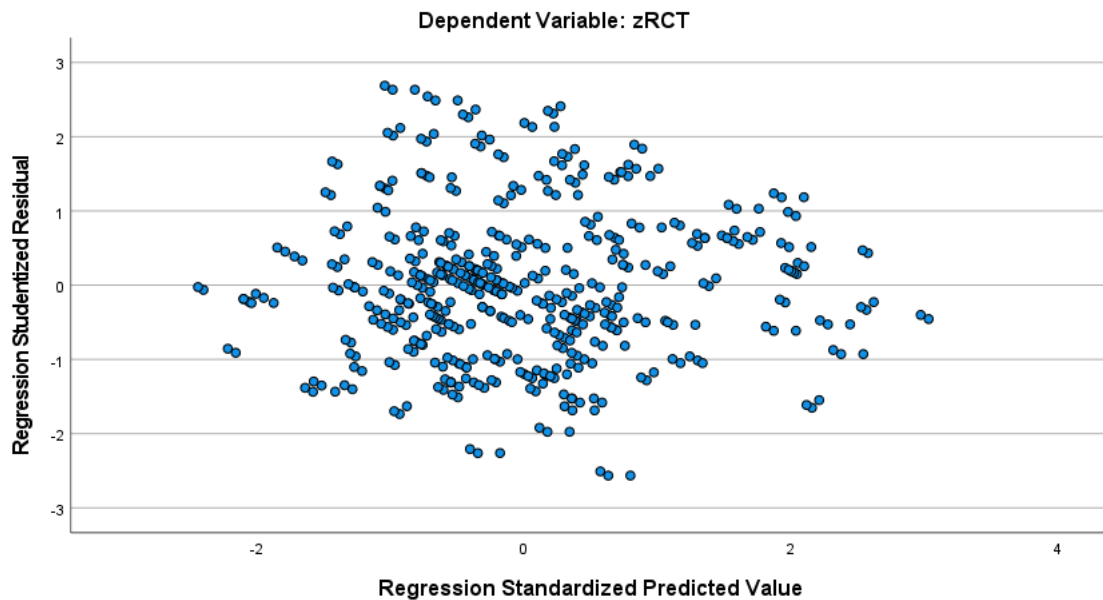


Figure 2. Scatterplot of standardized residuals versus standardized predicted values.

In other words, the residuals maintained constant variance across all levels of predicted scores (no narrowing or widening in the spread), indicating that the assumption of homoscedasticity was satisfied. Together, these plots showed that the data conformed to the linear relationship and equal variance assumptions of the regression model.

The normality assumption was tested by examining the distribution of the regression residuals. A Normal Probability-Probability (P-P) plot of standardized residuals showed that the residual points closely followed the diagonal line, deviating only slightly at the extremes (See Figure 3).

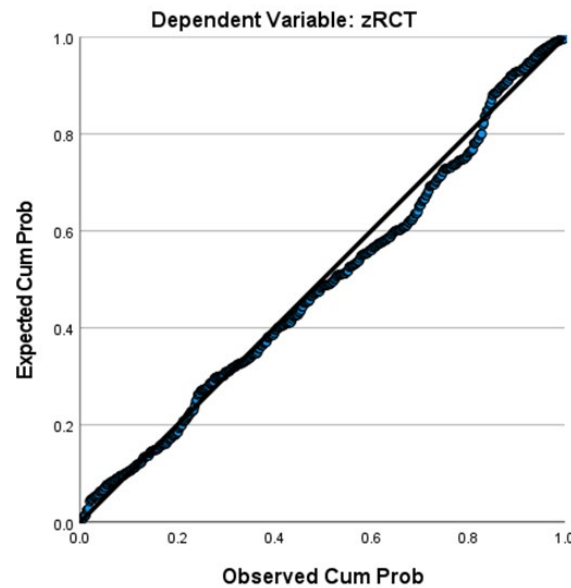


Figure 3. Normal P-P plot of regression standardized residuals.

This close alignment with the diagonal suggests that the residuals were approximately normally distributed. No substantial skew or kurtosis was evident in the residual distribution, so the assumption of normally distributed errors was deemed to hold. Therefore, the regression's error terms did not significantly violate normality.

The presence of multicollinearity among the predictors was assessed using variance inflation factor (VIF) and tolerance statistics. All three predictors exhibited tolerance values greater than .79 and VIF values between 1.19 and 1.26. These values fall well within acceptable limits (tolerance far above .10 and VIF far below 5.0), which indicates that the predictors were not highly intercorrelated. In other terms, multicollinearity was not an issue in this model. Independence of residuals was evaluated with the Durbin-Watson test. The Durbin-Watson statistic was $d = 2.178$, which is close to a value of 2 and fall within the range of 1.5 to 2.5 that indicates no significant autocorrelation of residuals. This means that the errors were independent, because the residuals showed no correlation with each other.

Outliers and influential points were checked, but the standardized residuals showed no extreme cases. The standardized residuals ranged from -2.54 to +2.68, well within the ± 3 threshold commonly used to flag potential outliers. The studentized deleted residuals were between -2.58 and +2.71, all below the cutoff of 3, so no problematic cases

were found. These results indicate that no individual data point had unusually large prediction errors. To identify any multivariate outliers, Mahalanobis distances were calculated for each case; the maximum Mahalanobis distance was 15.29, which did not exceed the critical χ^2 value (≈ 16.27 , $df = 3$, $p < .001$) for three predictors. This suggests that no cases had an unusual combination of predictor values that would make them multivariate outliers. Furthermore, no highly influential points were detected: the largest Cook's distance value was only 0.031, far below the benchmark of 1.0 for concerning influence. In sum, none of the observations unduly influenced the regression results, and no notable univariate or multivariate outliers were present. Therefore, no influential outliers or anomalous data points were identified in the dataset.

Overall, all diagnostic measures supported the conclusion that the assumptions of linear regression were met for this analysis. The linearity, normality, and homoscedasticity assumptions held true, the predictors showed no problematic multicollinearity, the residuals were independent, and there were no influential outliers.

Bivariate Correlations

Prior to conducting the primary regression analysis, bivariate Pearson correlations were calculated to examine the zero-order relationships among the predictor variables and the dependent variable. This initial analysis addresses Research Questions 1, 2, and 3 by establishing the individual association of each linguistic skill with reading comprehension. All measures were standardized (z-scores) for comparability: vocabulary size (zVST), vocabulary depth (zWAT), syntactic knowledge (zSKT), and reading comprehension (zRCT). The analyzes included the full sample of $N = 493$.

All three predictor variables had significant positive relationships with reading comprehension (zRCT) as shown in Table 4. Vocabulary size correlated with reading comprehension ($r = .461$, $p < .001$), as did vocabulary depth ($r = .441$) and syntactic knowledge ($r = .588$). All correlations were statistically significant at $p < .001$. Thus, each of these linguistic skills was significantly and meaningfully associated with reading comprehension performance (higher vocabulary and syntactic knowledge were linked to higher reading scores).

In addition, moderate, positive intercorrelations were observed among the predictor variables. Vocabulary size and vocabulary depth were moderately positively

correlated ($r = .361, p < .001$), as were vocabulary size and syntactic knowledge ($r = .374, p < .001$). Vocabulary depth and syntactic knowledge also showed a positive, though weaker, correlation ($r = .297, p < .001$). All bivariate correlations among the predictors were statistically significant (two-tailed $p < .001$), which implies that the three language measures are related to each other to a moderate extent.

Table 4. Pearson Correlation Matrix For Vocabulary Size (Zvst), Vocabulary Depth (Zwat), Syntactic Knowledge (Zskt), And Reading Comprehension (Zrct) (N = 493).

	zVST	zWAT	zSKT	zRCT
zVST	-	.361	.374	.461
zWAT	.361	-	.297	.441
zSKT	.374	.297	-	.588
zRCT	.461	.441	.588	-

* $p < .05$, ** $p < .01$. All correlations are two-tailed.

Note. Values are Pearson r correlation coefficients. Diagonal entries (-) are not applicable (each variable correlated with itself).

Hierarchical Multiple Regression

A hierarchical multiple regression analysis was run with standardized variables to see how vocabulary size, vocabulary depth, and syntactic knowledge each contributed to predicting L2 reading comprehension in the sample (N = 493). Predictors were entered in three blocks. Step 1 included vocabulary size (zVST) alone. Step 2 added vocabulary depth (zWAT). Lastly, step 3 added syntactic knowledge (zSKT). The regression results at each step were examined in terms of variance explained (R^2) and model fit improvement.

Step 1: With zVST as the sole predictor, the model was significant, $R = .461$, $R^2 = .212$, Adjusted $R^2 = .211$, $F(1, 491) = 132.42$, $p < .001$. This indicates that vocabulary size accounted for about 21.2% of the variance on its own, in standardized reading comprehension scores.

Step 2: Adding zWAT in the second block significantly improved the model. The two-predictor model had $R = .547$, $R^2 = .299$, Adjusted $R^2 = .296$. The increase in explained variance ($\Delta R^2 = .087$) was significant, $F\text{-change}(1, 490) = 60.52$, $p < .001$, indicating that vocabulary depth contributed an additional ~8.7% of variance in reading

comprehension beyond vocabulary size. (Notably, both zVST and zWAT remained significant predictors in this two-variable model.)

Step 3: In the final step, adding syntactic knowledge in this step substantially increased the explained variance ($\Delta R^2 = .160$, $F\text{-change}(1, 489) = 144.91$, $p < .001$). The full model (all three predictors) yielded $R = .678$, $R^2 = .459$ ($\text{Adj. } R^2 = .456$), indicating that about 45.6% of the variance in reading scores was explained. The final Model 3 was significant overall, $F(3, 489) = 138.43$, $p < .001$, and accounted for approximately 45.9% of the variance in zRCT. In this full model, all three predictors were statistically significant unique contributors. These statistics are summarized in Table 5. Syntactic knowledge was the strongest unique predictor ($\beta = .439$, $p < .001$, semi partial $r = .40$, indicating it uniquely explained ~16% of variance in reading after controlling for other factors). Vocabulary depth also made a significant contribution ($\beta = .234$, $p < .001$, semi partial $r = .214$, ~4.5% unique variance), as did vocabulary size ($\beta = .212$, $p < .001$, semi partial $r = .189$, ~3.6% unique variance). These semi partial correlations (part r) indicate that in the final model zSKT uniquely explained about 16.0% of the variance in reading comprehension, compared to roughly 4-5% for zWAT and zVST, after controlling for the other variables.

Table 5. Hierarchical Regression Model Summary for Reading Comprehension (zRCT).

Model	R	R^2	Adjusted R^2	ΔR^2	$F\text{-change} (df1, df2)$	$p(\Delta F)$
1	.461	.212	.211	.212	132.42 (1, 491)	< .001
2	.547	.299	.296	.087	60.52 (1, 490)	< .001
3	.678	.459	.456	.160	144.91 (1, 489)	< .001

* $p < .05$, ** $p < .01$, *** $p < .001$.

Note. Model 1 includes zVST; Model 2 adds zWAT; Model 3 adds zSKT. Dependent variable: zRCT. All tests are two-tailed.

As a robustness check, the predictors were entered in reverse order (zSKT → zVST → zWAT). The results were the same, showing that the final model fit ($R^2 = .459$; Adjusted $R^2 = .456$) and the significant coefficients ($\beta = .439$, .212, .234; all $ps < .001$) did not depend on the order of entry.

Overall, the findings show that while vocabulary knowledge remains essential, syntactic knowledge plays a more decisive role in reading comprehension among Turkish

EFL learners. These results emphasize the importance of balancing lexical and grammatical instruction in L2 reading pedagogy.



CHAPTER V

DISCUSSION and CONCLUSION

Summary of Major Findings

This study aimed to find out whether Turkish EFL university students' reading comprehension in English is better predicted by their syntactic knowledge or by their vocabulary knowledge (considering both vocabulary size and depth). The results showed that all three linguistic factors (syntactic knowledge, vocabulary breadth, and vocabulary depth) were significantly and positively correlated with L2 reading comprehension. Syntactic knowledge emerged as the strongest single contributor of the three. Syntactic knowledge had the strongest link with reading comprehension ($r \approx .59$), higher than vocabulary size ($r \approx .46$) or vocabulary depth ($r \approx .44$). The hierarchical regression showed that syntactic knowledge was the strongest independent predictor of reading comprehension performance. When all predictors were included, syntactic knowledge had the largest standardized beta weight ($\beta = 0.439$, $p < .001$), whereas vocabulary depth ($\beta = 0.234$) and vocabulary breadth ($\beta = 0.212$) had smaller but still significant effects. The final model accounted for about 46% of the differences in reading comprehension scores. Syntactic knowledge explained about 16% of the variance by itself which is more than the combined contribution of vocabulary depth (4.6%) and vocabulary size (3.6%), which together explained 8.2%. In practice, students with stronger syntactic knowledge scored much higher in reading, even when vocabulary size and depth were taken into account.

Overall, the results revealed a consistent hierarchy among the predictors of L2 reading comprehension. Syntactic knowledge was the strongest predictor of L2 reading comprehension. It was followed by vocabulary depth, and then vocabulary breadth. All three factors are significant and interconnected. Also, they overlap moderately, which means they share some common features, but they are not identical. However, a clear hierarchy emerged. Syntactic knowledge contributed the greatest explanatory power to reading success, which outperforms vocabulary knowledge in this diverse cohort of Turkish EFL learners. On the other hand, vocabulary depth had a slightly bigger effect on comprehension than vocabulary breadth. This implies that knowing words well (their meanings and connections) is more crucial than just knowing many words once a basic

foundation is built. In summary, as the answer for the primary research question, for Turkish EFL university students, syntactic knowledge is the strongest linguistic predictor of English reading comprehension, with vocabulary depth also playing a substantial (and relatively greater) role than vocabulary breadth.

Interpretations in Light of Key Theoretical Frameworks

These findings can be better understood by examining how they align with recognized theories and models of reading. Some of these theories and models were highlighted in the literature review chapter. These include the Simple View of Reading (Gough & Tunmer, 1986), Kintsch's Construction-Integration model (Kintsch, 1988; Kintsch, 1998), Stanovich's Interactive-Compensatory model (Stanovich, 1980), Bernhardt's Compensatory model of L2 reading (Bernhardt, 2005), and the Threshold (Short-Circuit) hypothesis (Alderson, 1984; Clarke, 1980). Each offers a different view for interpreting the role of linguistic knowledge (vocabulary and grammar) in reading comprehension. Overall, the results of this study strongly support theoretical perspectives that emphasize the foundational importance of language knowledge in reading, especially in a second language, while providing nuance regarding the importance of syntax.

The Simple View of Reading (SVR) (Gough & Tunmer, 1986) suggests that reading comprehension is essentially the product of decoding (word recognition) and linguistic comprehension. If either component is deficient, reading comprehension will suffer. In Türkiye, students usually learn to recognize English words in print early, so decoding was not a big problem for these university learners. Instead, their differences in reading success came mainly from linguistic comprehension, that is, knowing vocabulary and syntax to make sense of text. The findings support the Simple View of Reading (SVR). Once students can read words, what separates stronger and weaker readers is how much language they actually understand. Since syntax had the greatest effect, this shows that language proficiency, especially syntactic knowledge, was the key limiting factor. In short, weaker readers struggled not with decoding words but with understanding their meanings and structures. This interpretation repeats Alderson's (1984) famous question, "Is second language reading a reading problem or a language problem?" results of this study indicate it is largely a language problem when students' knowledge of vocabulary and syntax is inadequate.

Kintsch's Construction-Integration (C-I) model (Kintsch, 1988; Kintsch, 1998) describes reading comprehension as a two-stage process: first, a construction phase in which the reader parses words and sentences to build a textbase (a network of ideas or propositions directly from the text), and second, an integration phase in which this textbase is integrated with the reader's prior knowledge to form a coherent mental model of the situation described. Crucially, success in the construction phase is a prerequisite for effective integration. The reader must first be able to comprehend the linguistic content of the text itself. Findings of this study align strongly with this model. Vocabulary and syntax form the necessary infrastructure for the construction phase, and the fact that syntactic knowledge emerged as the top predictor of comprehension indicates that the ability to accurately parse sentences and extract propositional meaning is what enabled readers to construct a solid textbase. Readers with stronger syntactic knowledge could more effectively decipher "who did what to whom" in complex sentences, combined words into meaningful clauses, and thus built a more accurate representation of the text's meaning. By contrast, readers weaker in syntax likely struggled to properly assemble these meanings, which led to gaps or misinterpretations in their textbase. Kintsch's model (1988; 1998) also emphasizes that syntax helps signal which information is central or subordinate in a sentence. A reader adept with complex grammatical structures (e.g., subordinate clauses, referents, passive constructions) can identify key ideas and how they relate, whereas a reader who is confused by the sentence structure will fail to grasp important connections. Thus, this study's outcome that syntactic knowledge is paramount provides empirical support for the C-I model's assertion that successful comprehension depends on constructing a correct textbase, which in turn relies on solid lexical and syntactic processing. In essence, the integration of meaning with prior knowledge cannot proceed effectively without successful construction made possible by vocabulary and especially syntax.

The interactive-compensatory model of reading (Stanovich, 1980) proposes that reading is an interactive process where various sources of knowledge (from low-level decoding skills to higher-level contextual and world knowledge) work together, and importantly, that weaknesses in one area can be compensated by strengths in another. For example, a reader with poor word decoding might rely more on contextual clues or background knowledge to fill in gaps. However, the model also states that this compensation has limits in that if basic linguistic knowledge (like vocabulary and

grammar) is too weak, the reader will not be able to construct meaning no matter how much they rely on other strategies. The results of this study reflect this dynamic. On one hand, the participants of this study likely used a variety of strategies to aid their comprehension; for instance, using context to infer the meaning of unknown words or leveraging general reading skills which indicates the interactive nature of reading. On the other hand, the predominant role of grammar in this study's findings suggests that there was a fundamental linguistic threshold that could not be bypassed. Students who lacked sufficient syntactic knowledge could not fully compensate for this deficiency by relying on other knowledge sources. Their comprehension breakdowns can often be traced directly to misinterpreting complex structures, even when they might have known the individual words or tried to use contextual hints. This aligns with Stanovich's notion (1980) that while readers do compensate for weaknesses, no amount of higher-order guessing or background knowledge can fully make up for serious deficits in vocabulary or syntactic knowledge. This study supports the interactive-compensatory model's idea that different skills work together, but it also shows a limit: basic L2 skills, especially grammar, are essential and cannot be replaced. If that foundation is too weak, other reading strategies are essentially "short-circuited," a concept which was directly echoed by Clarke's (1980) work on L2 reading (discussed below).

Bernhardt's compensatory model (2005) explains second-language reading by showing how different knowledge sources contribute. It proposes that about half of the differences in L2 reading comprehension come from L2 language knowledge (vocabulary and grammar) and L1 reading ability, while the other half comes from factors like background knowledge, motivation, and strategies. A key idea is that learners need enough L2 language knowledge before their L1 reading skills and other supports can help. This study aligns with that view: vocabulary and syntactic knowledge together explained about 46% of the variation in reading, close to Bernhardt's "half" prediction. More importantly, the results highlight the makeup of the language component. For Turkish EFL students, grammar (syntax) was the most important piece, with vocabulary depth also adding value. In Bernhardt's terms, grammar is the main bottleneck. Hence, without enough syntactic knowledge, learners struggle no matter their L1 reading ability or strategies. But once a basic level of grammar and vocabulary is secured, other factors, like deeper word knowledge, L1 literacy, or world knowledge, can play a bigger role. In conclusion, this study strengthens Bernhardt's model by establishing the importance of

L2 linguistic knowledge in reading and refines it by emphasizing the particularly important function of syntactic knowledge within that linguistic dimension.

The Threshold Hypothesis (also known as the short-circuit hypothesis) (Clarke, 1980; Alderson, 1984) proposes that second language readers must reach a certain minimum threshold of L2 linguistic ability (in vocabulary, grammar, etc.) in order to read effectively in the L2. Below that threshold, even a learner who is an excellent reader in their first language will be “short-circuited” in L2 reading that is unable to transfer higher-order comprehension skills because low-level linguistic deficiencies (unknown words, unfamiliar structures) constantly impede understanding. Once the threshold is crossed, however, L1 reading skills and general cognitive strategies can be utilized more fully for L2 reading. The evidence from this study provides a clear affirmation of this threshold concept. Many of the participants likely had achieved a basic vocabulary size and syntactic knowledge from years of English instruction, but those who had not crossed the threshold in either vocabulary or syntactic knowledge exhibited significantly poorer comprehension. For example, virtually all students in the study who failed to reach a basic vocabulary coverage (knowing roughly 95% of the words in a text) struggled with understanding the readings which shows that a certain breadth of vocabulary is necessary for comprehension. The strong effect of syntactic knowledge indicates that there is an L2 grammatical threshold. Students with weak syntactic knowledge, even if they knew many words, often failed to understand sentences clearly. Because of this, they could not use higher-level strategies or make inferences effectively. Their weak language base cut off the reading process. By contrast, students who had enough syntactic, and vocabulary knowledge could use their general reading skills and background knowledge much more successfully. This mirrors Clarke’s (1980) and Alderson’s (1984) claim that poor linguistic knowledge is the main cause of L2 reading problems. Therefore, the results support the threshold hypothesis. Below a certain level of language skill, students are stuck relying on ineffective guessing, while above that level, real comprehension becomes possible. Practically, this means helping learners build enough vocabulary and syntactic knowledge are crucial, since higher-level reading skills cannot function well without this foundation.

In summary, this study’s findings align with major theories of L2 reading, all of which show that language competence supports comprehension. Among these skills,

syntactic knowledge stands out as a crucial but sometimes overlooked factor. The results do not challenge existing theories. Instead, they support them with evidence from Turkish EFL learners and add clarity about the relative importance of different linguistic components. In particular, the findings strongly support the view that successful L2 reading requires reaching a linguistic threshold (sufficient vocabulary and syntactic knowledge) and that, once basic decoding is in place, grammatical parsing skills become the key mechanism for deeper comprehension. This finding broadens existing theories of reading by emphasizing that the “language problem” in L2 reading is largely a syntactic knowledge problem when vocabulary knowledge is adequate (Alderson, 1984). Essentially, the present study’s empirical results link L2 reading theories to real-world learner performance, which shows that classic models remain highly relevant and mutually informative when considered together.

Comparison with Previous Research

The question of whether vocabulary knowledge or syntactic knowledge plays a greater role in L2 reading comprehension has been explored by many studies, and findings were not always the same. The findings of this study both align with and contradict prior research, aligning with a substantial body of evidence while contesting some common assumptions. In this section, findings are placed within the framework of existing research and studies which were undertaken globally and specifically in Türkiye on similar learner populations.

Several previous studies similarly found that syntactic knowledge is a key predictor, often the strongest predictor, of L2 reading success. For instance, Shiotsu and Weir (2007) reported that for Japanese EFL university students, syntactic knowledge made a larger contribution to reading comprehension than vocabulary size, accounting for a greater portion of variance in reading test performance. In their structural equation modeling, syntactic knowledge had a strong direct effect on reading even when vocabulary was included, a result very much mirrored by this study’s findings. Similarly, in Iran, Atai and Nikuinezhad (2012) found that while vocabulary and syntactic knowledge both related to reading, adding grammar improved the explained variance in reading scores by about 15% beyond vocabulary alone. The present findings highlight the central role of syntactic knowledge in L2 reading comprehension. In Türkiye, this extends the work of Taşçı and Turan (2021), who found that syntax was the strongest predictor

among high-proficiency learners, while vocabulary breadth and depth also made significant contributions. By drawing on a larger and more diverse sample, the current study demonstrates that the influence of syntactic knowledge is not confined to advanced readers, rather, it remains a strong predictor across different proficiency levels. Briefly, research increasingly points to syntactic knowledge as a crucial factor in L2 reading, and it is often more influential than vocabulary breadth once a basic word base is in place.

It is important to highlight that these findings do not diminish the contribution of vocabulary to reading. Both vocabulary breadth and depth were positively associated with reading, which supports the well-known idea that having a larger and deeper vocabulary helps readers understand texts. This aligns with a substantial body of earlier work. For example, studies like Stæhr (2008) and Zhang (2012) emphasized vocabulary knowledge, particularly breadth, as a dominant factor in reading, which shows that vocabulary knowledge can explain a large proportion of variance in L2 reading performance in certain learner groups. This study concurs that without sufficient vocabulary knowledge, reading is simply not possible. Participants who fell below a lexical coverage threshold (around 95% of the words in a text) struggled significantly with comprehension difficulties. This finding is consistent with the results of Hu and Nation (2000). What this study adds is a refinement of that picture. Once the basic threshold is reached, the quality of vocabulary depth may outweigh mere quantity. Moreover, syntactic knowledge emerges as an even stronger predictor of reading ability. This suggests that L2 reading performance cannot be reduced to word knowledge alone. Two learners with similar vocabulary sizes may be at very different levels of comprehension depending on how effectively they command syntax and how richly they understand word meanings. This means that after learners have a basic vocabulary base, what matters more is their ability to understand sentence structure (grammar) and the deeper meanings of words, not just how many words they know. In this way, these results support Alderson's (1984) perspective that many L2 reading difficulties are essentially language problems, with the language component here being both vocabulary and grammar and especially grammar in present context.

Not all research found grammar to be dominant. Some studies, including a few in Türkiye, reported vocabulary knowledge to be equally important, or even more important than grammar under certain conditions. A notable example is the study by Susoy and

Tanyer (2019) , who also examined Turkish EFL university students (in their case, an advanced-level cohort). They found that vocabulary depth was the single best predictor of reading comprehension when controlling for vocabulary breadth and syntax, slightly outperforming grammar's effect. In Susoy and Tanyer's research, deep word knowledge (knowledge of synonyms, associations, precise meanings, etc.) edged out syntactic knowledge in predictive power, which superficially contrasts with this study's outcome. How can this discrepancy be explained? One likely explanation lies in differences in the samples and their proficiency profiles. Susoy and Tanyer's (2019) participants were an advanced-level cohort. In Susoy and Tanyer's (2019) advanced group, most students had very strong grammar skills, essentially hitting a "ceiling" in syntactic knowledge. Because their syntax scores hardly varied, grammar could not explain differences in reading ability and this made vocabulary depth look like the stronger predictor. In this study's more mixed-proficiency sample, however, grammar varied much more, so it showed a strong impact on comprehension. This fits with the threshold idea. Once advanced learners pass the grammar threshold, other skills like vocabulary depth matter more, but in broader groups where many students are still building grammar, syntax becomes the key factor. Differences in how studies measure vocabulary depth and syntax may also matter. For example, a hard grammar test could limit variation, while a detailed vocabulary test might highlight vocabulary's predictive power (Choi & Zhang, 2021). Such methodological nuances may contribute to why some research in Türkiye (and elsewhere) finds vocabulary knowledge more noticeable. It is noteworthy, however, that even in studies where vocabulary knowledge seems to dominate, syntactic knowledge is rarely unimportant; rather, the findings often indicate that both are substantial contributors, and their relative ranking changes depending on context.

When considered together, the literature suggests that the relative importance of vocabulary breadth, vocabulary depth, and syntactic knowledge in L2 reading is not absolute, but mediated by learner profiles and context. Some studies with lower-proficiency learners or narrower ranges highlighted vocabulary breadth (basic word knowledge) as the main driver, since if learners do not know enough words, syntactic knowledge cannot even come into play. Other studies with more proficient learners or where most have sufficient vocabulary breadth highlighted syntactic knowledge or vocabulary depth as the key differentiator. This study contributes to this body of knowledge by providing evidence from a large, diverse sample of Turkish EFL students

that syntactic knowledge can assume the role of the “tight bottleneck” for comprehension, without negating the necessity of vocabulary knowledge. In a context like Türkiye where English instruction has traditionally emphasized syntactic knowledge (through formal teaching) yet learners still often struggle with reading, this study’s findings highlight that this emphasis may indeed be warranted. Students who truly master and apply grammar tend to achieve better comprehension, while others may remain limited even if they know many words. Still, vocabulary size and depth are essential. Readers need a core vocabulary and should keep expanding and deepening it to improve reading. This balanced view fits with Bernhardt’s (2005) compensatory model and other interactive perspectives, which show that skills can support each other, but only to a point. The results here suggest that without a strong grammar base, vocabulary or other skills cannot fully make up for the gap. In contrast, students can use advanced strategies and background knowledge more effectively when their syntactic knowledge, vocabulary breadth, and depth are all strong. These findings are in line with both international and Turkish research, and they also highlight the need to consider proficiency thresholds and test design. Overall, the study underscores that effective L2 reading requires both vocabulary and syntactic knowledge, with the latter playing a more decisive role.

Implications for Theory and Practice

Theoretical Implications

This study has important implications for second language reading theories. First, the findings highlight the need for L2 reading models to give a stronger place to syntactic knowledge as a core dimension of linguistic ability. Classic frameworks like the Simple View of Reading (Gough & Tunmer, 1986) and the Linguistic Threshold Hypothesis (Alderson, 1984; Clarke, 1980) are supported by present study’s data. They showed that decoding skills alone did not explain the differences; instead, it was linguistic comprehension (particularly syntax) that set stronger readers apart. Models that do not explicitly distinguish between vocabulary and grammar may benefit from doing so. The present study suggests that within the broader domain of linguistic knowledge, these sub-components exert distinct effects, such as syntactic knowledge plays a larger role than often assumed once basic lexical needs are satisfied. In this respect, this study adds to Bernhardt’s (2005) compensatory model by clarifying what the linguistic knowledge component in L2 reading includes. Bernhardt (2005) argued that about half of L2 reading

performance comes from language proficiency, but this study shows that for Turkish EFL university students, syntactic knowledge is the most important part of that proficiency. This may lead to updates in L2 reading theories, making grammar (syntax) an explicitly emphasized part of linguistic knowledge. Kintsch's Construction-Integration model (1988; 1998) is also supported, because it shows that theories of reading must account for the construction of meaning at the sentence level. Since syntactic parsing turned out to be a major limiting factor, any complete theory of L2 reading should acknowledge that understanding sentences through grammar can either prevent or support higher-level comprehension. The data shows that when readers cannot build basic sentence meaning due to parsing problems, higher-level skills like inferencing or using background knowledge cannot fully compensate which is a point that reading theories need to address. Additionally, the findings gave empirical support to Clarke's short-circuit hypothesis (1980) in L2 reading theory. They illustrate that without crossing a linguistic threshold, the "circuit" to higher-level skills remains cut off. Theoretically, this reinforces models that integrate a threshold mechanism (where L1 reading skills and general comprehension strategies are only enabled after a language threshold is achieved). In summary, this study's results not only align with existing theories but also help to contribute to them. They suggest that syntactic knowledge deserves a more central focus in theoretical discussions of L2 reading proficiency, and that vocabulary breadth and depth, while both important, should perhaps be treated as distinct constructs in models (given their differing roles). These insights contribute to a more nuanced theory of L2 reading that recognizes the complex nature of "linguistic knowledge" and the vital importance of syntactic processing in assembling meaning from text.

Pedagogical Implications

Beyond theory, the findings may have practical implications for language teaching and curriculum design, particularly in Turkish EFL contexts (and similar foreign language settings). In essence, the results call for a balanced yet integrated approach to developing learners' linguistic foundations for reading. Both grammar instruction and vocabulary development (especially deepening vocabulary knowledge) should be treated as integral parts of reading instruction rather than as isolated components. Several specific pedagogical recommendations can be drawn:

Because syntactic knowledge is so important for comprehension, English reading classes should give regular attention to sentence structure. Instead of teaching grammar rules separately, teachers can build them into reading tasks. For instance, they can point out complex sentences in a text (like ones with relative clauses or passives) and explain how they work. Going over key grammar patterns before a reading also helps students handle them when they appear. This way, learners are less likely to feel stuck or discouraged by difficult sentences. Findings of this study suggest that explicitly addressing grammar hurdles can yield improvements in comprehension, particularly for less-proficient readers who are often stuck not due to lack of ideas or strategies, but due to confusion over syntax. It is worth noting that core grammatical constructions in English are finite and learnable in a reasonable time; thus, targeted grammar support can effectively “boost” reading ability even in the short term. Investing class time in activities like sentence combining, syntactic simplification, or parsing practice (all in the context of real texts) can strengthen learners’ parsing skills, which enables them to read more confidently. In sum, teachers and materials developers should treat grammar as a reading skill, building students’ ability to untangle complex sentences as an explicit part of reading comprehension training.

Secondly, the evidence that vocabulary depth was a significant predictor of comprehension means that teaching should go beyond memorizing long lists of words. It is of course necessary for students to expand their vocabulary breadth since achieving ~95% lexical coverage of texts is a prerequisite for independent reading. In the same sense, equally, educators should promote learning rich and nuanced word knowledge. This involves helping students learn the different meanings of words, their synonyms and antonyms, common collocations, word families (derivatives), and appropriate usage contexts. Practical classroom approaches could include word maps or semantic networks (linking new words with related words and concepts), exercises on polysemy (same word in different contexts), and collocation charts. For instance, if students learn a new verb, they should also learn which prepositions or objects typically collocate with it (lexical-grammatical patterns). If students learn an adjective, they should also learn the nouns it often describes. Building vocabulary this way gives them a more flexible and accurate command of words, which improves reading by helping them infer meaning, catch nuances and idioms, and avoid mistakes caused by shallow word knowledge. Findings of this study repeat prior research in highlighting that knowing a word “well” is as important

as simply knowing it at all (Qian D. D., 2002). Therefore, educators should spend time reinforcing and deepening vocabulary, not only introducing new words. Reviewing previously learned words in richer detail, using them in varied sentences, and encouraging learners to produce sentences with them can consolidate depth. Ultimately, combining vocabulary depth with syntactic knowledge teaching gives a double advantage. Students see how words work together in sentences and how they create meaning, which reflects real language use.

Thirdly, teachers and curriculum designers should make sure students build a solid base of vocabulary and grammar early on, in line with the threshold hypothesis (Clarke, 1980; Alderson, 1984). Without this, it may not be possible to improve higher-level reading skills or learn many strategies. This means that for lower level learners, teaching high-frequency vocabulary and basic grammar structures is especially important. These provide the foundation on which advanced reading skills can be developed. Program designers might want to implement benchmarks (e.g., a target vocabulary size or a grammar mastery level) that students should reach before moving on to more advanced reading tasks. If such thresholds are not met, remedial vocabulary and grammar support should be provided. For example, if a placement test or diagnostic shows that a group of students only understands 80% of the words in course texts, intensive vocabulary workshops could be arranged until they reach a safer zone of lexical coverage. Likewise, if students are consistently confused by certain sentence constructions (say, sentences with multiple clauses), dedicated mini-lessons on those structures will be necessary. By consciously bridging the gap to the threshold, educators can prevent the “short-circuit” effect where students shut down on reading because too many words or structures are unknown. Once students have crossed this threshold, they can more fully engage with reading methods, critical analysis, and transfer of L1 reading abilities, because the language itself is no longer a wall but just an obstacle they have learned to overcome.

Finally, a broader implication is that the conventional division of “reading classes” and “grammar (or vocabulary) classes” is pedagogically counterproductive. The findings encourage a collaborative approach where reading comprehension exercises and language-focused instruction inform and reinforce each other. Teachers should emphasize the relationship between lexis and syntax in communicating meaning. For example, after students read a passage, a follow-up discussion can draw attention to how the author’s

word choice and sentence structure conveyed subtle information or tone. This not only improves comprehension of that text but also leads students to pay attention to language details in future reading. In teacher training, emphasis should be placed on contextual techniques for teaching grammar and vocabulary, using texts to illustrate grammar points rather than relying on isolated example sentences. By integrating instruction, students are more likely to view grammar and vocabulary as tools for making sense of texts (rather than abstract information), and they practice utilizing those skills in real-world comprehension contexts. This integrated approach implies that lexical and syntactic instruction should be provided as a unified toolkit for understanding texts, rather than being treated as separate from reading practice. An integrated curriculum can strengthen reading comprehension by targeting the key skills which are highlighted in this study. The main pedagogical implication is the need to refocus on the linguistic foundations of reading, particularly grammar and vocabulary depth, so that learners are better prepared to engage with the complexity of authentic English texts.

Limitations and Suggestions for Future Research

Although this study offers valuable insights into the predictors of L2 reading comprehension, it also has limitations, which in turn point to directions for future research. Firstly, the study's design was correlational, which means associations can be identified, but causation cannot be conclusively established. (i.e., that improving grammar will cause better reading, or vice versa). Secondly, sample of this study was chosen from a fairly specific population, Turkish university EFL students, which may limit the generalizability of the findings to other contexts, such as learners of different ages, proficiency levels, or cultural/linguistic backgrounds. Thirdly, the focus of the study was on the receptive measures of vocabulary and syntactic knowledge (multiple-choice tests, etc.) and did not account for other potentially important factors like readers' use of strategies, their background knowledge, or their L1 reading ability. Acknowledging these limitations, several directions for future research are proposed:

To begin with, to determine the causal impact of linguistic knowledge on reading, future studies should employ experimental or longitudinal designs. For example, researchers could conduct teaching interventions where one group of learners receives intensive grammar instruction and another receives intensive vocabulary instruction (or each group focusing on depth vs. breadth), then compare which group shows greater

improvements in reading comprehension. If the grammar-focused group shows greater improvement than the others, this would provide strong evidence that grammatical proficiency directly contributes to reading comprehension. Longitudinal studies could also track students over time to see if those with stronger initial syntactic or vocabulary knowledge go on to make faster progress in reading comprehension. Such evidence would boost (or weaken) the pedagogical argument for focusing on syntactic knowledge. Additionally, intervention research might explore interactions: for instance, whether a certain minimal vocabulary size is needed for grammar instruction to translate into reading benefits (or whether grammar teaching can partially compensate for a limited vocabulary)

Furthermore, more research should test whether the dominance of syntactic knowledge observed here holds in other contexts. Studies involving learners from different L1 backgrounds, younger learners, or varied educational settings are recommended. For example, it would be informative to see if secondary-school EFL students, who typically have smaller vocabularies and simpler texts, show a different balance (perhaps vocabulary breadth playing a larger role at early stages). Similarly, investigating different proficiency levels in a more targeted way is needed. Future work could deliberately sample low, intermediate, and advanced proficiency readers to examine how the relative contribution of syntactic knowledge and vocabulary knowledge shifts across proficiency bands. Prior evidence suggests that the relative importance of these skills may shift; for example, syntactic knowledge might be most crucial for high-proficiency students, whereas vocabulary breadth could matter more for lower-proficiency groups. Present study's results might be characteristic of intermediate-to-advanced learners so studies in true beginner contexts, or comparisons between foreign-language (EFL) learners and second language (ESL) learners immersed in an English environment could reveal different dynamics. Broadening the research to diverse groups will test the universality of this study's conclusions and help avoid over-generalizing from a single context.

Additionally, while the current study focused on the general population of undergraduate students, future research could specifically examine the effect of the 'year of study' on the relationship between linguistic knowledge and reading comprehension. Investigating whether advanced students (e.g., 4th-year) rely more heavily on syntactic

knowledge compared to novice students (e.g., 1st-year) would provide valuable insights into how these predictive relationships evolve throughout the university education.

Future research should also include both productive and receptive measures of vocabulary and syntactic knowledge in order to capture a more complete picture of what it means to ‘know’ words and grammar. Similar to most others, this study used recognition tests (e.g., multiple-choice vocabulary tests, grammar gap-fills) to assess knowledge. But a learner might recognize a structure or word without being able to use it actively, and that difference could be relevant. For vocabulary depth, tasks such as asking learners to produce synonyms, explain word meanings in their own words, or use new words in a sentence could reveal deeper proficiency. For syntactic knowledge, having students write sentences using specific complex constructions or transform sentences (to test if they can manipulate syntax) might provide additional insight. Researchers could then see if these productive knowledge measures correlate with reading comprehension as strongly as (or perhaps even more strongly than) the receptive measures. It may turn out that being able to actively use advanced vocabulary or grammar is an even stronger predictor of reading comprehension, which would guide teaching toward more productive practice. Future studies could also look at different aspects of vocabulary depth, such as morphology, collocations, or inferential meaning. Since depth has many dimensions, some parts, like knowledge of academic word families, may matter more for reading than others, like idioms. In short, future research with broader language tests can help clarify the complex relationship between language knowledge and reading comprehension.

Reading comprehension is a complex process shaped not just by language skills but also by other factors. To create a fuller model of L2 reading, future research should consider non-linguistic variables like strategies, memory, background knowledge, motivation, and L1 reading ability. For example, metacognitive reading strategies (e.g., the ability to adjust reading speed, skim for main ideas, reread difficult parts) could be measured alongside syntactic and vocabulary knowledge to see their relative contributions. Previous research in the Turkish context has found that metacognitive strategy use can be a significant predictor of academic reading success, sometimes even rivaling vocabulary depth in effect. Similarly, a reader’s background knowledge on a text’s topic or their general L1 literacy skills might significantly aid comprehension once

a linguistic threshold is met (as Bernhardt's (1995; 2005) model suggests). Adding these factors into multiple regression and structural equation modeling would show whether syntactic knowledge remains the strongest predictor once cognitive and affective variables are considered, or whether its effect is partly explained by them. This wider perspective supports a fuller theory of L2 reading by placing grammar and vocabulary within a broader set of influences. It also has teaching value: if background knowledge proves more important than syntax for certain texts, instruction should place more emphasis on building students' content knowledge alongside language skills.

Alongside these, future research should also consider that "reading comprehension" is not monolithic; that is, the materials and tasks used can affect which knowledge source is most needed. It would be insightful to test whether the dominance of syntactic knowledge holds across different text genres (narrative vs. expository vs. technical texts) and across different comprehension question types (literal detail questions vs. inference questions, etc.). Perhaps syntactic knowledge is especially crucial for understanding dense academic prose or complex syntactical literature, whereas vocabulary depth might play a larger role in interpreting subtle literary language or answering inference questions that rely on understanding nuanced word meanings. Investigating these distinctions can refine pedagogical strategies; for instance, if certain question types (like identifying an author's implication) rely more on vocabulary knowledge and others (like parsing a complicated argument) rely more on syntactic knowledge, teachers can tailor training, and students can become aware of what to focus on when tackling different reading tasks. Thus, expanding research to multiple text types and comprehension demands is a productive opportunity that would complement the findings of this study. Furthermore, future studies should investigate whether similar patterns emerge when learners engage with non-academic texts such as newspapers, online articles, short stories, or general-interest reading materials, as these genres may place different demands on vocabulary depth and syntactic processing.

In addition to the above points, future research could benefit from employing both quantitative and qualitative approaches in combination. Large sample quantitative studies (like this one) are useful for identifying general patterns and predictors, but qualitative methods such as think-aloud protocols or error analysis of reading can provide deeper insight into how learners process text in real time. For example, observing learners as

they read could reveal whether they stumble more on unfamiliar vocabulary or on complex sentences (or both); thus, illustrating the process behind the statistical relationships observed. Process-oriented data could help explain why syntactic knowledge matters so much. For example, learners might translate a difficult sentence word by word or skip it altogether, showing a syntax-related breakdown in comprehension. Using these methods together with experimental designs and diverse samples would build a stronger, more layered understanding of how L2 reading develops.

Concluding Remarks

In sum, the study shows that vocabulary and syntactic knowledge are vital for English reading comprehension in Turkish EFL university students. Syntactic knowledge proved to be the strongest predictor of comprehension, highlighting its crucial but often underappreciated role in L2 reading. Vocabulary depth also proved to be a key factor, which underscores the notion that what matters is not just how many words learners know, but how well they know them. By combining these findings with existing theories and comparing them to earlier empirical research, this study's findings are revealed to be part of a larger pattern in L2 reading research. In particular, this work suggests that models of L2 reading need to weigh syntactic knowledge heavily and treat vocabulary breadth and depth as related but distinct aspects of lexical knowledge. Practically, the study recommends educators to adjust their approach to reading instruction by addressing the linguistic foundations (vocabulary and syntactic knowledge) as a central component of developing reading proficiency. Reading comprehension in a foreign language is undeniably a complex and complicated skill, which involves cognitive strategies and background knowledge. Yet, this study shows that solid grammar and rich vocabulary are the foundation for higher-level comprehension skills. Without this base, learners often get stuck with only partial understanding. With it, they can use inference, critical thinking, and prior knowledge much more effectively, becoming independent readers in the L2. These findings can guide curriculum design and teaching practices in Türkiye and similar EFL contexts. Teachers can help students overcome the linguistic threshold that may be impeding their reading progress by integrating focused grammar instruction and vocabulary-depth enhancement into reading programs. In summary, this study indicates that improving L2 reading comprehension requires more than just increasing vocabulary size; it calls for enhancing the depth of vocabulary knowledge and strengthening syntactic

skills. A balanced focus on both vocabulary and grammar is likely to yield better reading outcomes for Turkish EFL students.



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Appendix A

Approval of the Ethics Committee

Evrak Tarih ve Sayısı: 03.06.2025-582909

	T.C. TOKAT GAZİOSMANPAŞA ÜNİVERSİTESİ SOSYAL VE BEŞERİ BİLİMLER ARAŞTIRMALARI ETİK KURULU KARARLARI	Doküman No	TOGÜ.FRM.185
		İlk Yayın Tarihi	02.08.2024
		Revizyon Tarihi	20.01.2025
		Revizyon No	01
		Sayfa No	1/1

Birim Adı	Genel Sekreterlik
Kurul/ Komisyon Adı	TOGÜ Sosyal ve Beşeri Bilimler Araştırmaları Etik Kurulu

Toplantı Tarihi	Oturum No	Karar No
29.05.2025	08	01-121

Üniversitemiz Sosyal ve Beşeri Bilimler Araştırmaları Etik Kurulu Başkanı Prof. Dr. Tuğba KILIÇER Başkanlığında toplandı.

KARAR 08.38- Lisansüstü Eğitim Enstitüsü Müdürlüğünün 28.04.2025 tarih ve 565623 sayılı yazısı görüldü.

Aşağıda bilgileri yer alan araştırmacıların yapmak istediği uygulamaların ve kullanacağı veri toplama araçlarının etik açıdan uygunluğuna oy birliği ile karar verildi.

ÇALIŞMANIN TÜRÜ	Yüksek Lisans Tezi
BAŞLIK	Yapı Bilgisi mi Yoksa Kelime Bilgisi mi? Hangisi İngilizceyi Yabancı Dil Olarak Öğrenen Türk Öğrencilerin İngilizce Okuduğunu Anlama Becerisini Daha İyi Yorduyor?
TEZ YÜRÜTÜCÜSÜ/ YAZARI	Dr. Öğr. Üyesi Zafer SUSOY Murat HANAĞASIOĞLU (Yabancı Diller Eğitimi Anabilim Dalı)
RAPORTÖR GÖRÜŞÜ	OLUMLU

Prof. Dr. Tuğba KILIÇER
Etik Kurul Başkanı
(İmza)

Prof. Dr. Mehmet Serkan UMUZDAŞ
Başkan Yardımcısı
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Prof. Dr. Emine ÖĞÜK
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Prof. Dr. Mehmet KARGÜN
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Doç. Dr. Elif BOYRAZ
Üye
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Doç. Dr. Ümran ÇEVİK GÜNER
Üye
(İmza)

Doç. Dr. Hüseyin Baha ÖZTUNÇ
Üye
(İmza)

Appendix B

Vocabulary Size Test

AÇIKLAMA

Aşağıda, İngilizce kelime dağarcığınızı ölçmek amacıyla hazırlanmış bir test bulunmaktadır.

1. Testte, her soruda verilen cümlelerin içindeki hedef kelimenin anlamını en iyi ifade eden seçeneği (a, b, c veya d) belirleyeceksiniz.
2. Her soru için yalnızca bir doğru cevabı işaretleyiniz.
3. Cümleyi ve tüm seçenekleri dikkatlice okuyunuz; emin olmadığınız sorularda tahminde de bulunabilirsiniz.
4. Tüm soruları mümkün olduğunca eksiksiz yanıtlamaya özen gösteriniz.

Bu talimatlara uyarak, bilgilerinizi en doğru şekilde ortaya koymanız beklenmektedir. Teşekkürler.

Öğrenci Numaranız: _____

First 1000

- | | |
|---|---|
| <p>1. SEE: They saw it.</p> <p>a. cut</p> <p>b. waited for</p> <p>c. looked at</p> <p>d. started</p> | <p>5. POOR: We are poor.</p> <p>a. have no money</p> <p>b. feel happy</p> <p>c. are very interested</p> <p>d. do not like to work hard</p> |
| <p>2. TIME: They have a lot of time.</p> <p>a. money</p> <p>b. food</p> <p>c. hours</p> <p>d. friends</p> | <p>6. DRIVE: He drives fast.</p> <p>a. swims</p> <p>b. learns</p> <p>c. throws balls</p> <p>d. uses a car</p> |
| <p>3. PERIOD: It was a difficult period.</p> <p>a. question</p> <p>b. time</p> <p>c. thing to do</p> <p>d. book</p> | <p>7. JUMP: She tried to jump.</p> <p>a. lie on top of the water</p> <p>b. get off the ground suddenly</p> <p>c. stop the car at the edge of the road</p> <p>d. move very fast</p> |
| <p>4. FIGURE: Is this the right figure?</p> <p>a. answer</p> <p>b. place</p> <p>c. time</p> <p>d. number</p> | <p>8. SHOE: Where is your shoe?</p> <p>a. the person who looks after you</p> <p>b. the thing you keep your money in</p> <p>c. the thing you use for writing</p> <p>d. the thing you wear on your foot</p> |

9. STANDARD: Her standards are very high.

- a. the bits at the back under her shoes
- b. the marks she gets in school
- c. the money she asks for
- d. the levels she reaches in everything

10. BASIS: This was used as the basis.

- a. answer
- b. place to take a rest
- c. next step
- d. main part

Second 1000

1. MAINTAIN: Can they maintain it?

- a. keep it as it is
- b. make it larger
- c. get a better one than it
- d. get it

2. STONE: They sat on a stone.

- a. hard thing
- b. kind of chair
- c. soft thing on the floor
- d. part of a tree

3. UPSET: I am upset.

- a. tired
- b. famous
- c. rich
- d. unhappy

4. DRAWER: The drawer was empty.

- a. sliding box
- b. place where cars are kept
- c. cupboard to keep things cold
- d. animal house

5. PATIENCE: He has no patience.

- a. will not wait happily
- b. has no free time
- c. has no faith
- d. does not know what is fair

6. NIL: His mark for that question was nil.

- a. very bad
- b. nothing
- c. very good
- d. in the middle

7. PUB: They went to the pub.

- a. place where people drink and talk
- b. place that looks after money
- c. cupboard to keep things cold
- d. animal house

8. CIRCLE: Make a circle.

- a. rough picture
- b. space with nothing in it
- c. round shape
- d. large hole

9. MICROPHONE: Please use the microphone.

- a. machine for making food hot
- b. machine that makes sounds louder
- c. machine that makes things look bigger
- d. small telephone that can be carried around

10. PRO: He's a pro.

- a. someone who is employed to find out important secrets
- b. a stupid person
- c. someone who writes for a newspaper
- d. someone who is paid for playing a sport, etc.

Third 1000

1. SOLDIER: He is a soldier.

- a. person in a business
- b. student
- c. person who uses metal
- d. person in the army

2. RESTORE: It has been restored.

- a. said again
- b. given to a different person
- c. given a lower price
- d. made like new again

3. JUG: He was holding a jug.

- a. a container for pouring liquids
- b. an informal discussion
- c. a soft cap
- d. a weapon that explodes

4. SCRUB: He is scrubbing it.

- a. cutting shallow lines into it
- b. repairing it
- c. rubbing it hard to clean it
- d. drawing simple pictures of it

5. DINOSAUR: The children were pretending to be dinosaurs.

- a. robbers who work at sea
- b. small creatures with human form but

with wings

- c. large creatures with wings that breathe fire
- d. animals that lived a long time ago

6. STRAP: He broke the strap.

- a. promise
- b. top cover
- c. shallow dish for food
- d. strip of material for holding things together

7. PAVE: It was paved.

- a. prevented from going through
- b. divided
- c. given gold edges
- d. covered with a hard surface

8. DASH: They dashed over it.

- a. moved quickly
- b. moved slowly
- c. fought
- d. looked quickly

9. ROVE: He couldn't stop roving.

- a. getting drunk
- b. travelling around
- c. making a musical sound through closed lips
- d. working hard

10. LONESOME: He felt lonesome.

- a. ungrateful
- b. very tired
- c. lonely
- d. full of energy

Fourth 1000

1. COMPOUND: They made a new compound.
 - a. agreement
 - b. thing made of two or more parts
 - c. group of people forming a business
 - d. guess based on past experience
2. LATTER: I agree with the latter.
 - a. man from the church
 - b. reason given
 - c. last one
 - d. answer
3. CANDID: Please be candid.
 - a. be careful
 - b. show sympathy
 - c. show fairness to both sides
 - d. say what you really think
4. TUMMY: Look at my tummy.
 - a. cloth to cover the head
 - b. stomach
 - c. small furry animal
 - d. thumb
5. QUIZ: We made a quiz.
 - a. thing to hold arrows
 - b. serious mistake
 - c. set of questions
 - d. box for birds to make nests in
6. INPUT: We need more input.
 - a. information, power, etc. put into something
 - b. workers
 - c. artificial filling for a whole in wood
 - d. money
7. CRAB: Do you like crabs?
 - a. sea creatures that walk sideways
 - b. very thin small cakes
 - c. tight, hard collars
 - d. large black insects that sing at night
8. VOCABULARY: You will need more vocabulary.
 - a. words
 - b. skill
 - c. money
 - d. guns
9. REMEDY: We found a good remedy.
 - a. way to fix a problem
 - b. place to eat in public
 - c. way to prepare food
 - d. rule about numbers
10. ALLEGE: They alleged it.
 - a. claimed it without proof
 - b. stole the ideas for it from someone else
 - c. provided facts to prove it
 - d. argued against the facts that supported it

Fifth 1000

1. DEFICIT: The company had a large deficit.

- a. spent more money than it earned
- b. went down in value
- c. had a plan for spending that used a lot of money
- d. had a lot of money in the bank

2. WEEP: He wept.

- a. finished his course
- b. cried
- c. died
- d. worried

3. NUN: We saw a nun.

- a. long thin creature that lives in the earth
- b. terrible accident
- c. woman following a strict religious life
- d. unexplained bright light in the sky

4. HAUNT: The house is haunted.

- a. full of ornaments
- b. rented
- c. empty
- d. full of ghosts

5. COMPOST: We need some compost.

- a. strong support
- b. help to feel better
- c. hard stuff made of stones and sand stuck together
- d. rotted plant material

6. CUBE: I need one more cube.

- a. sharp thing used for joining things
- b. solid square block
- c. tall cup with no saucer
- d. piece of stiff paper folded in half

7. MINIATURE: It is a miniature.

- a. a very small thing of its kind
- b. an instrument to look at small objects
- c. a very small living creature
- d. a small line to join letters in handwriting

8. PEEL: Shall I peel it?

- a. let it sit in water for a long time
- b. take the skin off it
- c. make it white
- d. cut it into thin pieces

9. FRACTURE: They found a fracture.

- a. break
- b. small piece
- c. short coat
- d. rare jewel

10. BACTERIUM: They didn't find a single bacterium in it.

- a. small living thing causing disease
- b. plant with red or orange flowers
- c. animal that carries water on its back
- d. thing that has been stolen and sold to a shop

Sixth 1000

1. DEVIOUS: Your plans are devious.

- a. tricky
- b. well-developed
- c. not well thought out
- d. more expensive than necessary

2. PREMIER: The premier spoke for an hour.

- a. person who works in a law court
- b. university teacher
- c. adventurer
- d. head of the government

3. BUTLER: They have a butler.

- a. man servant
- b. machine for cutting up trees
- c. private teacher
- d. cool dark room under the house

4. ACCESSORY: They gave us some accessories.

- a. papers allowing us to enter a country
- b. official orders
- c. ideas to choose between
- d. extra pieces

5. THRESHOLD: They raised the threshold.

- a. flag
- b. point or line where something changes
- c. roof inside a building
- d. cost of borrowing money

6. THESIS: She has completed her thesis.

- a. long written report of study carried out for a university degree
- b. talk given by a judge at the end of a trial
- c. first year of employment after becoming a teacher
- d. extended course of hospital treatment

7. STRANGLE: He strangled her.

- a. killed her by pressing her throat
- b. gave her all the things she wanted
- c. took her away by force
- d. admired her greatly

8. CAVALIER: He treated her in a cavalier manner.

- a. without care
- b. politely
- c. awkwardly
- d. as a brother would

9. MALIGN: His malign influence is still felt.

- a. evil
- b. good
- c. very important
- d. secret

10. VEER: The car veered.

- a. went suddenly in another direction
- b. moved shakily
- c. make a very loud noise
- d. slid sideways without the wheels turning

Seventh 1000

1. OLIVE: We bought olives.
 - a. oily fruit
 - b. scented pink or white flowers
 - c. men's clothes for swimming
 - d. tools for digging up weeds

2. QUILT: They made a quilt.
 - a. statement about who should get their property when they die
 - b. firm agreement
 - c. thick warm cover for a bed
 - d. feather pen

3. STEALTH: We did it by stealth.
 - a. spending a large amount of money
 - b. hurting someone so much that they agreed to their demands
 - c. moving secretly with extreme care and quietness
 - d. taking no notice of problems they met

4. SHUDDER: The boy shuddered.
 - a. spoke with a low voice
 - b. almost fell
 - c. shook
 - d. called out loudly

5. BRISTLE: The bristles are too hard.
 - a. questions
 - b. short stiff hairs
 - c. folding beds
 - d. bottoms of the shoes

6. BLOC: They have joined this bloc.
 - a. musical group
 - b. band of thieves
 - c. small group of soldiers who are sent ahead of others
 - d. group of countries sharing a purpose

7. DEMOGRAPHY: This book is about demography.
 - a. the study of patterns of land use
 - b. the study of the use of pictures to show facts about numbers
 - c. the study of the movement of water
 - d. the study of population

8. GIMMICK: That's a good gimmick.
 - a. thing for standing on to work high above the ground
 - b. small thing with pockets to hold money
 - c. attention-getting action or thing
 - d. clever plan or trick

9. AZALEA: This azalea is very pretty.
 - a. small tree with many flowers growing in groups
 - b. light material made from natural threads
 - c. long piece of material worn by women in India
 - d. sea shell shaped like a fan

10. YOGHURT: This yoghurt is disgusting.
 - a. grey mud found at the bottom of rivers
 - b. unhealthy, open sore
 - c. thick, soured milk, often with sugar and flavouring
 - d. large purple fruit with soft flesh

Eighth 1000

1. ERRATIC: He was erratic.

- a. without fault
- b. very bad
- c. very polite
- d. unsteady

2. PALETTE: He lost his palette.

- a. basket for carrying fish
- b. wish to eat foot
- c. young female companion
- d. artist's board for mixing paints

3. NULL: His influence was null.

- a. had good results
- b. was unhelpful
- c. had no effect
- d. was long-lasting

4. KINDERGARTEN: This is a good kindergarten.

- a. activity that allows you to forget your worries
- b. place of learning for children too young for school
- c. strong, deep bag carried on the back
- d. place where you may borrow books

5. ECLIPSE: There was an eclipse.

- a. a strong wind
- b. a loud noise of something hitting the water
- c. the killing of a large number of people
- d. the sun hidden by a planet

6. MARROW: This is the marrow.

- a. symbol that brings good luck to a team
- b. soft centre of a bone
- c. control for guiding a plane
- d. increase in salary

7. LOCUST: There were hundreds of locusts.

- a. insects with wings
- b. unpaid helpers
- c. people who do not eat meat
- d. brightly coloured wild flowers

8. AUTHENTIC: It is authentic.

- a. real
- b. very noisy
- c. old
- d. like a desert

9. CABARET: We saw the cabaret.

- a. painting covering a whole wall
- b. song and dance performance
- c. small crawling insect
- d. person who is half fish, half woman

10. MUMBLE: He started to mumble.

- a. think deeply
- b. shake uncontrollably
- c. stay further behind the others
- d. speak in an unclear way

Ninth 1000

1. HALLMARK: Does it have a hallmark?

- a. stamp to show when to use it by
- b. stamp to show the quality
- c. mark to show it is approved by the royal family
- d. mark or stain to prevent copying

2. PURITAN: He is a puritan.

- a. person who likes attention
- b. person with strict morals
- c. person with a moving home
- d. person who hates spending money

3. MONOLOGUE: Now he has a monologue.

- a. single piece of glass to hold over his eye to help him see better
- b. long turn at talking without being interrupted
- c. position with all the power
- d. picture made by joining letters together in interesting ways

4. WEIR: We looked at the weir.

- a. person who behaves strangely
- b. wet, muddy place with water plants
- c. old metal musical instrument played by blowing
- d. thing built across a river to control the water

5. WHIM: He had lots of whims.

- a. old gold coins
- b. female horses
- c. strange ideas with no motive
- d. sore red lumps

6. PERTURB: I was perturbed.

- a. made to agree
- b. worried
- c. very puzzled
- d. very wet

7. REGENT: They chose a regent.

- a. an irresponsible person
- b. a person to run a meeting for a time
- c. a ruler acting in place of the king
- d. a person to represent them

8. OCTOPUS: They saw an octopus.

- a. a large bird that hunts at night
- b. a ship that can go under water
- c. a machine that flies by means of turning blades
- d. a sea creature with eight legs

9. FEN: The story is set in the fens.

- a. low land partly covered by water
- b. a piece of high land with few trees
- c. a block of poor quality houses in a city
- d. a time long ago

10. LINTEL: He painted the lintel.

- a. beam over the top of a door or window
- b. small boat used for getting to land from a big boat
- c. beautiful tree with spreading branches and green fruit
- d. board showing the scene in a theatre

Tenth 1000

1. AWE: They looked at the mountain with awe.

- a. worry
- b. interest
- c. wonder
- d. respect

2. PEASANTRY: He did a lot for the peasantry.

- a. local people
- b. place of worship
- c. businessmen's club
- d. poor farmers

3. EGALITARIAN: This organization is egalitarian.

- a. does not provide much information to the public
- b. dislikes change
- c. frequently asks a court of law for a judgment
- d. treats everyone who works for it as if they are equal

4. MYSTIQUE: He has lost his mystique.

- a. his healthy body
- b. the secret way he makes other people think he has special power or skill
- c. the woman who has been his lover while he is married to someone else
- d. the hair on his top lip

5. UPBEAT: I'm feeling really upbeat about it.

- a. upset
- b. good
- c. hurt

d. confused

6. CRANNY: We found it in the cranny!

- a. sale of unwanted objects
- b. narrow opening
- c. space to store things under the roof
- d. large wooden box

7. PIGTAIL: Does she have a pigtail?

- a. a rope of hair made by twisting bits together
- b. a lot of cloth hanging behind a dress
- c. a plant with pale pink flowers that hang down in bunches
- d. a lover

8. CROWBAR: He used a crowbar.

- a. heavy iron pole with a curved end
- b. false name
- c. sharp tool for making holes in leather
- d. light metal walking stick

9. RUCK: He got hurt in the ruck.

- a. hollow between the stomach and the top of the leg
- b. pushing and shoving
- c. group of players gathered round the ball in some ball games
- d. race across a field of snow

10. LECTERN: He stood at the lectern.

- a. desk to hold a book at a height for reading
- b. table or block used for church sacrifices
- c. place where you buy drinks
- d. very edge

Appendix C

Word Associates Test

AÇIKLAMA

Aşağıda, İngilizce kelime bilginizi ölçmek amacıyla hazırlanmış bir test bulunmaktadır.

1. Testte, her bir kelimenin altında 2 sütunda toplam 8 kelime verilmiş olup, bu 8 kelimeden verilen ilk kelimeyle çağrışım yapan 4 tanesini işaretlemeniz beklenmektedir.
 2. Her soru için sadece 4 seçenek işaretleyiniz.
 3. Tüm seçenekleri dikkatlice okuyunuz; emin olmadığınız sorularda tahminde de bulunabilirsiniz.
 4. Tüm soruları mümkün olduğunca eksiksiz yanıtlamaya özen gösteriniz.
- Bu talimatlara uyarak, bilgilerinizi en doğru şekilde ortaya koymanız beklenmektedir. Teşekkürler.

1. beautiful	
☐ enjoyable ☐ expensive ☐ free ☐ loud	☐ education ☐ face ☐ music ☐ weather
2. bright	
☐ clever ☐ famous ☐ happy ☐ shining	☐ color ☐ hand ☐ poem ☐ taste
3. calm	
☐ open ☐ quite ☐ smooth ☐ tired	☐ cloth ☐ day ☐ light ☐ person
4. natural	
☐ expected ☐ helpful ☐ real ☐ short	☐ foods ☐ neighbors ☐ parents ☐ songs
5. fresh	
☐ another ☐ cool ☐ easy ☐ raw	☐ cotton ☐ heat ☐ language ☐ water
6. general	
☐ closed ☐ different ☐ usual ☐ whole	☐ country ☐ idea ☐ reader ☐ street
7. bare	
☐ empty ☐ heavy ☐ uncovered ☐ useful	☐ cupboard ☐ feet ☐ school ☐ tool
8. acute	
☐ hidden ☐ often ☐ rich ☐ sharp	☐ angle ☐ hearing ☐ illness ☐ stones
9. common	
☐ complete ☐ light ☐ ordinary ☐ shared	☐ boundary ☐ circle ☐ name ☐ party

10. complex	
☐ angry ☐ difficult ☐ necessary ☐ sudden	☐ argument ☐ passengers ☐ patterns ☐ problem
11. broad	
☐ full ☐ moving ☐ quite ☐ wide	☐ night ☐ rivers ☐ shoulders ☐ smile
12. conscious	
☐ awake ☐ healthy ☐ knowing ☐ laughing	☐ face ☐ decision ☐ effort ☐ student
13. convenient	
☐ easy ☐ fresh ☐ near ☐ suitable	☐ experience ☐ sound ☐ time ☐ vegetable
14. dense	
☐ crowded ☐ hot ☐ noisy ☐ thick	☐ forest ☐ handle ☐ smoke ☐ weather
15. curious	
☐ helpful ☐ interested ☐ missing ☐ strange	☐ accident ☐ child ☐ computer ☐ steel
16. distinct	
☐ clear ☐ famous ☐ separate ☐ true	☐ advantage ☐ meanings ☐ news ☐ parents
17. dull	
☐ cloudy ☐ loud ☐ nice ☐ secret	☐ colour ☐ knife ☐ place ☐ rock
18. direct	
☐ honest ☐ main ☐ straight ☐ wide	☐ fence ☐ flight ☐ heat ☐ river
19. favorable	
☐ helpful ☐ legal ☐ possible ☐ positive	☐ habit ☐ response ☐ teacher ☐ weather
20. secure	
☐ confident ☐ enjoyable ☐ fixed ☐ safe	☐ game ☐ job ☐ meal ☐ visitor

21. tight	
☐ close ☐ rough ☐ uncomfortable ☐ wet	☐ bend ☐ pants ☐ surface ☐ wood
22. violent	
☐ expected ☐ smelly ☐ strong ☐ unlucky	☐ anger ☐ death ☐ rubbish ☐ storm
23. chronic	
☐ continuing ☐ local ☐ serious ☐ unplanned	☐ accident ☐ examination ☐ illness ☐ shortage
24. compact	
☐ effective ☐ small ☐ solid ☐ useful	☐ group ☐ kitchen ☐ medicine ☐ string
25. crude	
☐ clever ☐ fair ☐ rough ☐ valuable	☐ behavior ☐ drawing ☐ oil ☐ trade
26. domestic	
☐ home ☐ national ☐ regular ☐ smooth	☐ animal ☐ movement ☐ policy ☐ speed
27. profound	
☐ bright ☐ deep ☐ exact ☐ great	☐ effect ☐ machine ☐ taste ☐ thought
28. fertile	
☐ dark ☐ growing ☐ private ☐ special	☐ business ☐ egg ☐ mind ☐ soil
29. formal	
☐ fast ☐ loud ☐ organized ☐ serious	☐ bomb ☐ education ☐ growth ☐ statement
30. independent	
☐ changed ☐ equal ☐ important ☐ separate	☐ child ☐ country ☐ ideas ☐ prices

31. original	
☐ careful ☐ closed ☐ first ☐ proud	☐ condition ☐ mind ☐ plan ☐ sister
32. sensitive	
☐ feeling ☐ interesting ☐ sharp ☐ thick	☐ clothes ☐ instrument ☐ skin ☐ topic
33. professional	
☐ paid ☐ public ☐ regular ☐ religious	☐ advice ☐ manner ☐ musician ☐ transport
34. critical	
☐ clear ☐ dangerous ☐ important ☐ rough	☐ festival ☐ illness ☐ time ☐ water
35. synthetic	
☐ artificial ☐ electronic ☐ expensive ☐ simple	☐ drug ☐ meal ☐ radio ☐ sound
36. liberal	
☐ free ☐ moderate ☐ plenty ☐ valuable	☐ crops ☐ furniture ☐ parents ☐ transport
37. dramatic	
☐ exciting ☐ official ☐ surprising ☐ worried	☐ adventure ☐ change ☐ patient ☐ salary
38. conservative	
☐ cautious ☐ hopeful ☐ traditional ☐ warm	☐ clothes ☐ estimate ☐ meeting ☐ signal
39. coherent	
☐ clear ☐ normal ☐ recent ☐ together	☐ crime ☐ health ☐ speech ☐ theory
40. ample	
☐ heavy ☐ large ☐ plentiful ☐ windy	☐ amount ☐ climate ☐ feelings ☐ time

Appendix D

Syntactic Knowledge Test

AÇIKLAMA

Aşağıda, İngilizce dilbilgisi bilginizi ölçmek amacıyla hazırlanmış bir test bulunmaktadır. Test 2 aşamadan oluşmaktadır:

Birinci aşamada, 1-15 sorularda boşluğu en doğru şekilde tamamlayan ifadeyi işaretleyin. İkinci aşamada, 16-40 sorularda cümle içerisinde altı çizili ifadelerden yanlış olanı/düzeltilmesi gereken ifadenin altındaki harfi daire içine alın. Yanlış seçeneği daire içine almanız yeterlidir.

Tüm soruları mümkün olduğunca eksiksiz yanıtlamaya özen gösteriniz.

Bu talimatlara uyarak, bilgilerinizi en doğru şekilde ortaya koymanız beklenmektedir. Teşekkürler.

1. _____, the outermost layer of skin, is about as thick as a sheet of paper over most of the skin.
(A) It is the epidermis
(B) In the epidermis
(C) The epidermis
(D) The epidermis is
2. Sam Spade in *The Maltese Falcon* and Rick Blaine in *Casablanca* _____ of Humphrey Bogart's more famous roles.
(A) they are two
(B) two of them are
(C) two of them
(D) are two
3. The compound microscope has not one _____ two lenses.
(A) and also
(B) but
(C) and there are
(D) but there are
4. During the Precambrian period, the Earth's crust formed, and life _____ in the seas.
(A) first appeared
(B) first to appear
(C) is first appearing
(D) appearing
5. The hard palate forms a partition _____ and nasal passages.
(A) the mouth
(B) between the mouth
(C) is between the mouth
(D) it is between the mouth
6. Conditions required for seed germination include abundant water, an adequate supply of oxygen, and _____.
(A) the temperatures must be appropriate
(B) having appropriate temperatures
(C) appropriate temperatures
(D) appropriately temperate
7. When fluid accumulates against the eardrum, a second more insidious type of _____.
(A) *otitis media* may develop
(B) developing *otitis media*
(C) the development of *otitis media*
(D) to develop *otitis media*
8. Some general theories of motivation _____ of central motives, from which other motives develop.
(A) identify a limited number
(B) identification of a limited amount
(C) identify a limited amount
(D) identifying a limited number
9. Before the Statue of Liberty arrived in the United States, newspapers invited the public to help determine where _____ placed after its arrival.
(A) should the statue be
(B) the statue being
(C) it should be the statue
(D) the statue should be
10. Hydroelectric power can be produced by _____ and using tidal flow to run turbines.
(A) water basins are dammed
(B) damming water basins
(C) to dam water basins
(D) dams in water basins
11. Abraham Lincoln and Jefferson Davis, _____ of the Union and the Confederacy during the Civil War, were both born in Kentucky.
(A) they were opposing presidents
(B) were opposing presidents
(C) opposing presidents
(D) presidents opposed

12. A stock _____ at an inflated price is called a watered stock.
 (A) issued
 (B) is issued
 (C) it is issued
 (D) which issued
13. The leaves of the white mulberry provide food for silkworms, _____ silk fabrics are woven.
 (A) whose cocoons
 (B) from cocoons
 (C) whose cocoons are from
 (D) from whose cocoons
14. Not only _____ generate energy, but it also produces fuel for other fission reactors.
 (A) a nuclear breeder reactor
 (B) it is a nuclear breeder reactor
 (C) does a nuclear breeder reactor
 (D) is a nuclear breeder reactor
15. D.W. Griffith pioneered many of the stylistic features and filmmaking techniques _____ as the Hollywood standard.
 (A) that established
 (B) that became established
 (C) what established
 (D) what became established
16. Mosquitoes will accepts the malaria parasite at only one stage of the parasite's complex life cycle.
 A B C D
17. The counterpart of a negative electrons is the positive proton.
 A B C D
18. The ankle joint occur where the lower ends of the tibia and fibula slot neatly around the talus.
 A B C D
19. In the United States and Canada, motor vehicle laws affect the operate of motorcycles as well as automobiles.
 A B C D
20. The neocortex is, in evolutionary terms, most recent layer of the brain.
 A B C D
21. There are more than eighty-four million specimens in the National Museum of Natural History's collection of biological, geological, archeological, and anthropology treasures.
 A B C D
22. After George Washington married widow Martha Custis, the couple came to resides at Mount Vernon.
 A B C D
23. At this stage in their development, rubberized asphalt can hardly be classified as cutting edge.
 A B C D

Appendix E

Reading Comprehension Test

AÇIKLAMA

Aşağıda, İngilizce okuma becerilerinizi ölçmek amacıyla hazırlanmış bir test bulunmaktadır.

Testte toplam 50 tane soru bulunmakta olup verilen metinlere göre çözmeniz beklenmektedir.

Tüm soruları mümkün olduğunca eksiksiz yanıtlamaya özen gösteriniz.

Bu talimatlara uyarak, bilgilerinizi en doğru şekilde ortaya koymanız beklenmektedir. Teşekkürler.

Questions 1–10

The hippopotamus is the third largest land animal, smaller only than the elephant and the rhinoceros. Its name comes from two Greek words which mean "river horse." The long name of this animal is often shortened to the easier to handle term "hippo."

Line The hippo has a natural affinity for the water. It does not float on top of the water; instead, it can
(5) easily walk along the bottom of a body of water. The hippo commonly remains underwater for three to five minutes and has been known to stay under for up to half an hour before coming up for air.

In spite of its name, the hippo has relatively little in common with the horse and instead has a number of interesting similarities in common with the whale. When a hippo comes up after a stay at the bottom of a lake or river, it releases air through a blowhole, just like a whale. In addition, the
(10) hippo resembles the whale in that they both have thick layers of blubber for protection and they are almost completely hairless.

1. The topic of this passage is
 - (A) the largest land animals
 - (B) the derivations of animal names
 - (C) the characteristics of the hippo
 - (D) the relation between the hippo and the whale
2. It can be inferred from the passage that the rhinoceros is
 - (A) smaller than the hippo
 - (B) equal in size to the elephant
 - (C) a hybrid of the hippo and the elephant
 - (D) one of the two largest types of land animals
3. The possessive "Its" in line 2 refers to
 - (A) hippopotamus
 - (B) elephant
 - (C) rhinoceros
 - (D) horse
4. It can be inferred from the passage that the hippopotamus is commonly called a hippo because the word "hippo" is
 - (A) simpler to pronounce
 - (B) scientifically more accurate
 - (C) the original name
 - (D) easier for the animal to recognize
5. The word "float" in line 4 is closest in meaning to
 - (A) sink
 - (B) drift
 - (C) eat
 - (D) flap
6. According to the passage, what is the maximum time that hippos have been known to stay underwater?
 - (A) Three minutes
 - (B) Five minutes
 - (C) Thirty minutes
 - (D) Ninety minutes
7. The expression "has relatively little in common" in line 7 could best be replaced by
 - (A) has few interactions
 - (B) is not normally found
 - (C) has minimal experience
 - (D) shares few similarities
8. The passage states that one way in which a hippo is similar to a whale is that
 - (A) they both live on the bottoms of rivers
 - (B) they both have blowholes
 - (C) they are both named after horses
 - (D) they both breathe underwater
9. The word "blubber" in line 10 is closest in meaning to
 - (A) fat
 - (B) metal
 - (C) water
 - (D) skin
10. The passage states that the hippo does not
 - (A) like water
 - (B) resemble the whale
 - (C) have a protective coating
 - (D) have much hair

Questions 11–19

- John James Audubon, nineteenth-century artist and naturalist, is known as one of the foremost authorities on North American birds. Born in Les Cayes, Haiti, in 1785, Audubon was raised in France and studied art under French artist Jacques-Louis David. After settling on his father's Pennsylvania estate at the age of eighteen, he first began to study and paint birds.
- (5) In his young adulthood, Audubon undertook numerous enterprises, generally without a tremendous amount of success; at various times during his life he was involved in a mercantile business, a lumber and grist mill, a taxidermy business, and a school. His general mode of operating a business was to leave it either unattended or in the hands of a partner and take off on excursions through the wilds to paint the natural life that he saw. His business career came to end in 1819 when
- (10) he was jailed for debt and forced to file for bankruptcy.
- It was at that time that Audubon began seriously to pursue the dream of publishing a collection of his paintings of birds. For the next six years he painted birds in their natural habitats while his wife worked as a teacher to support the family. His *Birds of America*, which included engravings of 435 of his colorful and lifelike water colors, was published in parts during the period from 1826 to 1838 in
- (15) England. After the success of the English editions, American editions of his work were published in 1839, and his fame and fortune were ensured.

11. This passage is mainly about
 - (A) North American birds
 - (B) Audubon's route to success as a painter of birds
 - (C) the works that Audubon published
 - (D) Audubon's preference for travel in natural habitats
12. The word "foremost" in line 1 is closest in meaning to
 - (A) prior
 - (B) leading
 - (C) first
 - (D) largest
13. In the second paragraph, the author mainly discusses
 - (A) how Audubon developed his painting style
 - (B) Audubon's involvement in a mercantile business
 - (C) where Audubon went on his excursions
 - (D) Audubon's unsuccessful business practices
14. The word "mode" in line 7 could best be replaced by
 - (A) method
 - (B) vogue
 - (C) average
 - (D) trend
15. Audubon decided not to continue to pursue business when
 - (A) he was injured in an accident at a grist mill
 - (B) he decided to study art in France
 - (C) he was put in prison because he owed money
 - (D) he made enough money from his paintings
16. The word "pursue" in line 11 is closest in meaning to
 - (A) imagine
 - (B) share
 - (C) follow
 - (D) deny
17. According to the passage, Audubon's paintings
 - (A) were realistic portrayals
 - (B) used only black, white, and gray
 - (C) were done in oils
 - (D) depicted birds in cages
18. The word "support" in line 13 could best be replaced by
 - (A) tolerate
 - (B) provide for
 - (C) side with
 - (D) fight for
19. It can be inferred from the passage that after 1839 Audubon
 - (A) unsuccessfully tried to develop new businesses
 - (B) continued to be supported by his wife
 - (C) traveled to Europe
 - (D) became wealthy

Questions 20–29

Line (5) Schizophrenia is often confused with multiple personality disorder yet is quite distinct from it. Schizophrenia is one of the more common mental disorders, considerably more common than multiple personality disorder. The term “schizophrenia” is composed of roots which mean “a splitting of the mind,” but it does not refer to a division into separate and distinct personalities, as occurs in multiple personality disorder. Instead, schizophrenic behavior is generally characterized by illogical thought patterns and withdrawal from reality. Schizophrenics often live in a fantasy world where they hear voices that others cannot hear, often voices of famous people. Schizophrenics tend to withdraw from families and friends and communicate mainly with the “voices” that they hear in their minds.

(10) It is common for the symptoms of schizophrenia to develop during the late teen years or early twenties, but the causes of schizophrenia are not well understood. It is believed that heredity may play a part in the onset of schizophrenia. In addition, abnormal brain chemistry also seems to have a role; certain brain chemicals, called neurotransmitters, have been found to be at abnormal levels in some schizophrenics.

20. The paragraph preceding the passage most probably discusses
 - (A) the causes of schizophrenia
 - (B) multiple personality disorder
 - (C) the most common mental disorder
 - (D) possible cures for schizophrenia
21. Which of the following is true about schizophrenia and multiple personality disorder?
 - (A) They are relatively similar.
 - (B) One is a psychological disorder, while the other is not.
 - (C) Many people mistake one for the other.
 - (D) Multiple personality disorder occurs more often than schizophrenia.
22. “Disorder” in line 3 is closest in meaning to which of the following?
 - (A) Disruption
 - (B) Untidiness
 - (C) Misalignment
 - (D) Disease
23. It can be inferred from the passage that a “schism” is
 - (A) a division into factions
 - (B) a mental disease
 - (C) a personality trait
 - (D) a part of the brain
24. What is NOT true about schizophrenia, according to the passage?
 - (A) It is characterized by separate and distinct personalities.
 - (B) It often causes withdrawal from reality.
 - (C) Its symptoms include illogical thought patterns.
 - (D) Its victims tend to hear voices in their minds.
25. According to the passage, how do schizophrenics generally relate to their families?
 - (A) They are quite friendly with their families.
 - (B) They become remote from their families.
 - (C) They have an enhanced ability to understand their families.
 - (D) They communicate openly with their families.
26. It can be inferred from the passage that it would be least common for schizophrenia to develop at the age of
 - (A) fifteen
 - (B) twenty
 - (C) twenty-five
 - (D) thirty
27. The word “onset” in line 11 is closest in meaning to
 - (A) start
 - (B) medication
 - (C) effect
 - (D) age
28. The word “abnormal” in line 11 is closest in meaning to
 - (A) unstable
 - (B) unregulated
 - (C) uncharted
 - (D) unusual
29. Where in the passage does the author explain the derivation of the term “schizophrenia”?
 - (A) Lines 3–5
 - (B) Lines 5–6
 - (C) Lines 9–10
 - (D) Lines 11–13

Questions 30–39

People are often surprised to learn just how long some varieties of trees can live. If asked to estimate the age of the oldest living trees on Earth, they often come up with guesses in the neighborhood of two or perhaps three hundred years. The real answer is considerably larger than that, more than five thousand years.

Line
(5)

The tree that wins the prize for its considerable maturity is the bristlecone pine of California. This venerable pine predates wonders of the ancient world such as the pyramids of Egypt, the Hanging Gardens of Babylon, and the Colossus of Rhodes. It is not nearly as tall as the giant redwood that is also found in California, and, in fact, it is actually not very tall compared with many other trees, often little more than five meters in height. This relatively short height may be one of the factors that aid the bristlecone pine in living to a ripe old age—high winds and inclement weather cannot easily reach the shorter trees and cause damage. An additional factor that contributes to the long life of the bristlecone pine is that this type of tree has a high percentage of resin, which prevents rot from developing in the tree trunk and branches.

(10)

30. The best title for this passage would be
 - (A) The Size of the Bristlecone Pine
 - (B) Three-Hundred-Year-Old Forests
 - (C) The Wonders of the Ancient World
 - (D) An Amazingly Enduring Tree
31. The word “estimate” in line 2 is closest in meaning to
 - (A) measure
 - (B) approximate
 - (C) evaluate
 - (D) view
32. The expression “in the neighborhood of” in lines 2–3 could best be replaced by
 - (A) of approximately
 - (B) on the same block as
 - (C) with the friendliness of
 - (D) located close to
33. It can be inferred from the passage that most people
 - (A) are quite accurate in their estimates of the ages of trees
 - (B) have two to three hundred trees in their neighborhoods
 - (C) do not really have any idea how old the oldest trees on Earth are
 - (D) can name some three-hundred-year-old trees
34. According to the passage, approximately how old are the oldest trees on Earth?
 - (A) Two hundred years old
 - (B) Three hundred years old
 - (C) Five hundred years old
 - (D) Five thousand years old
35. The word “venerable” in line 6 is closest in meaning to which of the following?
 - (A) Ancient
 - (B) Incredible
 - (C) Towering
 - (D) Unrecognizable
36. The author mentions the Egyptian pyramids as an example of something that is
 - (A) far away
 - (B) believed to be strong
 - (C) extremely tall
 - (D) known to be old
37. Which of the following is true about the bristlecone pine?
 - (A) It is as tall as the great pyramids.
 - (B) It is never more than five meters in height.
 - (C) It is short in comparison to many other trees.
 - (D) It can be two to three hundred feet tall.
38. The word “inclement” in line 10 could best be replaced by
 - (A) sunny
 - (B) bad
 - (C) unusual
 - (D) strong
39. The passage states that resin
 - (A) assists the tree trunks to develop
 - (B) is found only in the bristlecone pine
 - (C) flows from the branches to the tree trunk
 - (D) helps stop rot from starting

Questions 40–50

The organization that today is known as the Bank of America did start out in America, but under quite a different name. Italian American A.P. Giannini established this bank on October 17, 1904, in a renovated saloon in San Francisco's Italian community of North Beach under the name Bank of Italy, with immigrants and first-time bank customers comprising the majority of his first customers. During its development, Giannini's bank survived major crises in the form of a natural disaster and a major economic upheaval that not all other banks were able to overcome.

One major test for Giannini's bank occurred on April 18, 1906, when a massive earthquake struck San Francisco, followed by a raging fire that destroyed much of the city. Giannini obtained two wagons and teams of horses, filled the wagons with the bank's reserves, mostly in the form of gold, covered the reserves with crates of oranges, and escaped from the chaos of the city with his clients' funds protected. In the aftermath of the disaster, Giannini's bank was the first to resume operations. Unable to install the bank in a proper office setting, Giannini opened up shop on the Washington Street Wharf on a makeshift desk created from boards and barrels.

In the period following the 1906 fire, the Bank of Italy continued to prosper and expand. By 1918 there were twenty-four branches of the Bank of Italy, and by 1928 Giannini had acquired numerous other banks, including a Bank of America located in New York City. In 1930 he consolidated all the branches of the Bank of Italy, the Bank of America in New York City, and another Bank of America that he had formed in California into the Bank of America National Trust and Savings Association.

A second major crisis for the bank occurred during the Great Depression of the 1930s. Although Giannini had already retired prior to the darkest days of the Depression, he became incensed when his successor began selling off banks during the bad economic times. Giannini resumed leadership of the bank at the age of sixty-two. Under Giannini's leadership, the bank weathered the storm of the Depression and subsequently moved into a phase of overseas development.

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| <p>40. According to the passage, Giannini</p> <ul style="list-style-type: none"> (A) opened the Bank of America in 1904 (B) worked in a bank in Italy (C) set up the Bank of America prior to setting up the Bank of Italy (D) later changed the name of the Bank of Italy | <p>43. The word "raging" in line 8 could best be replaced by</p> <ul style="list-style-type: none"> (A) angered (B) localized (C) intense (D) feeble |
| <p>41. Where did Giannini open his first bank?</p> <ul style="list-style-type: none"> (A) In New York City (B) In what used to be a bar (C) On Washington Street Wharf (D) On a makeshift desk | <p>44. It can be inferred from the passage that Giannini used crates of oranges after the earthquake</p> <ul style="list-style-type: none"> (A) to hide the gold (B) to fill up the wagons (C) to provide nourishment for his customers (D) to protect the gold from the fire |
| <p>42. According to the passage, which of the following is NOT true about the San Francisco earthquake?</p> <ul style="list-style-type: none"> (A) It happened in 1906. (B) It occurred in the aftermath of a fire. (C) It caused problems for Giannini's bank. (D) It was a tremendous earthquake. | <p>45. The word "chaos" in line 10 is closest in meaning to</p> <ul style="list-style-type: none"> (A) legal system (B) extreme heat (C) overdevelopment (D) total confusion |

46. The word “consolidated” in line 17 is closest in meaning to
- (A) hardened
 - (B) merged
 - (C) moved
 - (D) sold
47. The passage states that after his retirement, Giannini
- (A) began selling off banks
 - (B) caused economic misfortune to occur
 - (C) supported the bank’s new management
 - (D) returned to work
48. The expression “weathered the storm of” in line 23 could best be replaced by
- (A) found a cure for
 - (B) rained on the parade of
 - (C) survived the ordeal of
 - (D) blew its stack at
49. Where in the passage does the author describe Giannini’s first banking clients?
- (A) Lines 2–5
 - (B) Lines 7–8
 - (C) Lines 12–13
 - (D) Lines 14–16
50. The paragraph following the passage most likely discusses
- (A) bank failures during the Great Depression
 - (B) a third major crisis of the Bank of America
 - (C) the international development of the Bank of America
 - (D) how Giannini spent his retirement
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Appendix F

Assumption Test Diagnostics for the Regression Model

Assumption	Test/Indicator	Observed Value	Criteria / Interpretation
Linearity	Partial regression plots (each IV vs DV)	No curvature observed	Linear relationship evident (assumption met)
Normality	Normal P-P plot of residuals	Points close to diagonal	Residuals approximately normal (assumption met)
Homoscedasticity	Std. residuals vs predicted scatterplot	No funnel shape or pattern	Constant error variance (assumption met)
Multicollinearity	Tolerance (min) / VIF (max)	0.79 / 1.26	Tolerance > .20; VIF < 5 (no multicollinearity)
Independence	Durbin-Watson (<i>d</i>)	2.178	~2 (within 1.5-2.5, no autocorrelation)
Outliers & Influence	Std. resid. range; Stud. del. resid. range; Mahalanobis (max); Cook's D (max)	-2.54 to 2.68; -2.58 to 2.71; 15.29; 0.031	No case beyond ± 3 ; Mahalanobis < $\chi^2(3, .001)=16.27$; Cook's D < 1 (no outliers or influential points)

Note. *Std. resid.* = standardized residual; *Stud. del. resid.* = studentized deleted residual; *VIF* = variance inflation factor; *d* = Durbin-Watson statistic. The critical chi-square value for $df = 3$ at $p < .001$ is 16.27 (used to evaluate Mahalanobis distance). All diagnostic results indicate that regression assumptions were met and none of the model's assumptions were violated