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An Investigation on Grammar Learning Strategies: A Systematic Review

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Abstract

Various studies indicate that the use of language learning strategies in learning English as a foreign/second language supports English language learning and increases success. The literature mostly focuses on the four basic skills and vocabulary learning while Grammar Learning Strategies (GLS) has been studied more limitedly. This study is a systematic review conducted in accordance with the PRISMA flowchart. The systematic review examined 21 articles that met the criteria from 610 studies between 1978 and 2004. The study shows that English articles on GLS for university students began to be studied in 2008 and have increased significantly in recent years. In these studies, various GLS scales were used, some scales were culturally adapted and new measurement tools were developed, and different statistical analysis techniques were utilised in these processes. In addition to all this, it was determined that qualitative research methods were also frequently applied. A significant number of the studies were conducted in Iran and Poland, and the use of quantitative, qualitative, and mixed methods demonstrated the methodological maturity of the field. This study provides critical information on developing effective methods for grammar learning strategies and solving the problems students encounter in this process, and serves as a comprehensive guide for researchers, teachers, and program developers for applications and future studies in the field.

Key words: Grammar learning strategies, Foreign language learning, Language learning strategies, Systematic review

INTRODUCTION

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In recent literature, there has been a resurgence of discussion about grammar having a crucial part in learning a second language both within and outside of the classroom. Purpura (2004) emphasized the importance of grammar in language by referring to it as to be the "heart". In addition, Ellis (2006) attempted to raise the importance of grammar by claiming that grammatical competence is amongst the most important aspects of communicative competence in achieving proficiency and fluency in a language. It enables learners in improving their language skills and production, resulting in increased accuracy and fluency during interaction. Wang (2010) defends this claim by stating that one of the most effective approaches to develop communicative skills in language acquisition is to master grammar. Learning grammar provides numerous advantages for language acquisition (Saaristo, 2015). It is critical for students in the process of correcting their own errors and enhancing their written tasks, by depending just on unconscious absorption is insufficient for learning a foreign language efficiently (Debata 2013). Instruction of grammar will assist learners in acquiring new grammatical forms that they did not previously learn (Zhang 2009).

Today, as the language teaching setting has evolved toward a learner-centered approach, new research has given weight to learners' decisions, individual differences, and learning strategies (Zhou, 2017). One of the most prominent goals are to explore into students' language learning strategies and investigate ways they to use these strategies to benefit students and teachers. As a result, in learner-centered classrooms, the priority is on the strategies and needs of the students. Learners adopt ways to improve the quality, effectiveness, and ease of their learning. The techniques they employ throughout their grammar learning process are called grammar learning strategies (GLS) which help enable learners to become more efficient and organized (Abri, 2017).

While language learning strategies are not visible, they do provide language instructors with significant information on how their students analyse the situation, prepare, and choose relevant skills to comprehend, acquire, or recall new information taught in the classroom. Considering the fact that learners and learning have received more attention compared to teachers and teaching, it is critical to understand how learners absorb new information and the strategies they employ within the process of understanding, learning, and retaining information (Tilfarlioglu & Yalcin 2005). Even within the same setting, it is recognized that some learners acquire a second language faster or more effectively than others. There is no 'one method fits all' that is applicable for successful instruction. As a result, it is beneficial for teachers to understand the unique characteristics of their learners and be aware of effective language learning strategies.

Language learning strategies have been defined by many scholars. Oxford (1990) describes language learning strategies as actions, behaviors, or methods used by students to improve their foreign language abilities by internalizing, identifying, and employing what they have recently learned in a planned manner. Oxford (1990) further adds that such strategies are particular actions made by the learner to make learning simpler, faster, more pleasurable, more self-directed, more successful, and more transferable to different and newer contexts. According to Wenden and Rubin (1987) LLS are methods, actions, or plans employed by learners with the intention to acquire, store, retrieve, and apply information. Cohen (2014, p.7) defines language learning strategies as "thoughts and actions, consciously chosen and operationalized by language learners to assist them in carrying out a multiplicity of tasks from the very onset of learning to the most advanced levels of target-language performance." Hişmanoglu (2000) states that a language learner who is attempting to get new information or complete a task

requires certain learning strategies. Decisions regarding which strategies to employ may be determined by the student in a conscious or unconscious manner in the classroom. The learner's major purpose is to identify acceptable learning strategies that will simplify their tasks during the learning process. It is essential to use strategies when learning a language since they allow students to be much more engaged, autonomous, active, and proficient in the process (Pineda, 2010).

From our focus on the importance of grammar in language learning and the effects of language learning strategies throughout such a process, it is important to define the concept of GLS. Cohen and Pinilla- Herrera (2010) have described GLS to be “deliberate thoughts and actions that students consciously [employ] for learning and getting better control over the use of grammar structures” (p. 64). Learning strategies for learning a grammatical structure or rule are defined by Oxford (2017, p. 244, as cited in Pawlak, 2018) as “teachable, dynamic thoughts and behaviors that learners consciously select and employ in specific contexts to improve their self-regulated, autonomous L2 grammar development for effective task performance and long-term efficiency.” The distinguishing properties of GLS have been outlined by Griffiths (2008, as cited in Pawlak, 2009) as follows: GLS are what learners do, indicating an active stance; their practice is partly conscious; they are optional, implying that the learners themselves choose which strategies to use; their use involves intentional activity; learners use them to monitor and control the learning process, as well as to facilitate the learning process. In conclusion, appropriate use of GLS, either for the intention to learn rules, automate these rules, or to gain from corrective feedback plays an important part in mastering the grammar of target language and in addition requires some degree of autonomy (Pawlak 2016; Pawlak 2020).

Within this scope, the primary aim of the present study is to comprehensively and systematically analyse existing research on grammar learning strategies, thereby mapping the current literature in this field and identifying the conceptual and theoretical framework and methodological trends. The study can provide important insights on the importance of this field by compiling the findings in the literature and presenting a comparative table, thereby providing a guiding framework for future researchers studying in this area.

Research Questions

1. What are the current trends in grammar learning strategy of university students in the literature?
2. What is the global popularity of studies published in the field of grammar learning strategies among university students?
3. What types of data have been collected in studies on university students' grammar learning strategies?
4. How have data been analysed in studies on grammar learning strategies of university students?

The purpose of this study is to determine how much influence English songs have on improving listening skills for English students and to stress that students who learn target vocabulary words

through popular songs perform better in the vocabulary recognition category when compared to students who learn the same target vocabulary words through reading passages.

Aim and Significance of the Study

This study was conducted to systematically review GLS studies conducted by university students and examine current trends, global popularity, data collection methods, and data analysis methods in the literature. This study will provide a deeper understanding of GLS research and inform future researchers by providing insights into the state of the literature.

B. METHODOLOGY OF THE RESEARCH

This research was conducted to examine studies investigating university students' grammar learning strategies by bringing them together using a systematic review method. Systematic reviews are a comprehensive research method that analyses and synthesises existing literature to seek answers to research questions and obtain reliable and unbiased results (Lasserson et al., 2019; Çınar, 2021). A systematic review is based on the principles of systematically searching all studies to find answers to pre-formulated research questions and applying specific inclusion and exclusion criteria to analyse the data obtained. Various definitions of systematic review can be found in the literature. Kitchenham (2004) defines it as the process of examining, evaluating, and interpreting the current studies in a subject area. Khan et al. (2003) stated that a systematic review differs from traditional research in that it is clearly formulated, identifies relevant studies in the literature, and evaluates these studies using a clearly defined methodology. Similarly, Higgins et al (2023) explained it as the examination of existing research for the purpose of selecting and evaluating pre-defined research questions using a specific method. In this study, the PRISMA Flow Diagram was preferred to document the information flow through systematic review. This study utilised Khan et al.'s (2003) five-step systematic review preparation system: “Step 1: Framing questions for the review”, “Step 2: Identifying relevant work”, “Step 3: Assessing the quality of studies”, “Step 4: Summarizing the evidence”, “Step 5: Interpreting Findings”

Eligibility Criteria

In this research, academic articles on grammar learning strategies of students at higher education have been structured conducting within various eligibility criteria in order to comprehensively and systematically examine both the theoretical framework and methodological trends in this field. The eligibility criteria of this study are provided in Table 1 below.

Table 1. The eligibility criteria conducted in the study

Criterion	Inclusion Criterion	Exclusion Criterion
Focus of study	The studies on the grammar learning strategies of university students.	Studies that do not directly examine grammar learning

		strategies or are not empirical.
Study Group	University students.	Participant profiles that are not clearly specified or non-university student groups.
Databases	WOS, Scopus Eric.	Additional databases beyond those specified.
Years of publication	Studies published up to May 2024.	Articles published after May 2024 or currently in press status.
Country	Studies from all over the world	No exclusion criteria have been specified.
Publication type of studies	Empirical research articles.	Books, book chapters, conference proceedings, theses, reports, editorial articles, review articles and discussion articles.
Language	Articles written in English.	Articles written in other languages or with an English abstract but not the full text in English.
Keywords	GLS, English Foreign Language, University Students, Graduate Students, Undergraduate Students, Grammar learning, strategies, learning grammar.	Studies that do not include the keywords.

Firstly, to conduct an in-depth search of the literature in the field, the Web of Science (WoS), Education Resources Information Center (ERIC), and Scopus database were selected. These are known to be among the comprehensive databases for scientific research and are frequently preferred for providing broad access to peer-reviewed journals published in the field. These

three databases were chosen for their breadth of coverage and academic credibility, providing access to peer-reviewed publications in education, linguistics, language teaching, applied linguistics, and specialized language fields.

Secondly, the keywords “GLS + English Foreign Language,” “GLS + English Second Language,” “GLS + English Language,” and “Grammar learning strategies” or “learning grammar strategies” were selected to include both English as a Foreign Language (EFL) and English as a Second Language (ESL) students. Additionally, various combinations of the keywords “university students,” “undergraduate students,” and “graduate students” were searched to narrow the focus of the search results to university levels. Each phrase group was searched separately.

Thirdly, in order to focus solely on peer-reviewed research articles, a document type limitation has been applied. All types of publications other than articles and research articles, such as books, literature reviews, review articles, editorial materials, and discussions, have been excluded from the study. Language restrictions were also applied to the obtained articles and only publications in English were included in the study.

Finally, in order to enable a detailed analysis of the articles obtained, ensure the consistency of the study, and maintain linguistic accuracy in the content analysis, only articles written in English, the language in which the researchers are experts, were included in the review. Furthermore, the articles obtained focused on examining university students' grammar learning strategies. Following the application of the established criteria, the remaining publications subjected to a two-stage review process based on the article title and abstract. Studies that did not meet the research content were excluded. The remaining articles were examined in full text for conceptual and methodological relevance to the research objectives. At the end of this process, only 21 articles that met all the established criteria were included in the detailed review.

Search Strategy

The study was conducted in accordance with the PRISMA Flow Diagram (Moher et al., 2009) to ensure it was carried out in line with systematic review principles. To ensure a comprehensive literature search, the Web of Science (WOS), Education Resources Information Center (ERIC), and Elsevier's Scopus database, which offer broad coverage of high-impact academic journals, were used as databases. Newman and Gough (2020) state that ERIC is cited in bibliographic and full-text database searches in education research. On the other hand, WOS goes back to the 1900s with access to the oldest publications in scientific literature (Falagas, Pitsouni, Malietzis and Pappas, 2007). Furthermore, it is the only database that can be searched for bibliometric studies up to 2004. After 2004, another database, Scopus, became prominent in searching for scientific publications in the social sciences and humanities (Karasözen, Gökkurt, and Zan, 2011). According to Burnham (2006), Scopus developers claim that this database, with 4000 publishers, is the "largest single abstract and indexing database ever built.". Publications published up to May 2024, were included in the study. To ensure maximum comprehensiveness and to ensure that all publications required for content were included in the search, all keyword combinations were used along with the Boolean operators "AND" and "OR". The number of publications according to search results are presented in Table 2.

Table 2. Number of publications according to search results

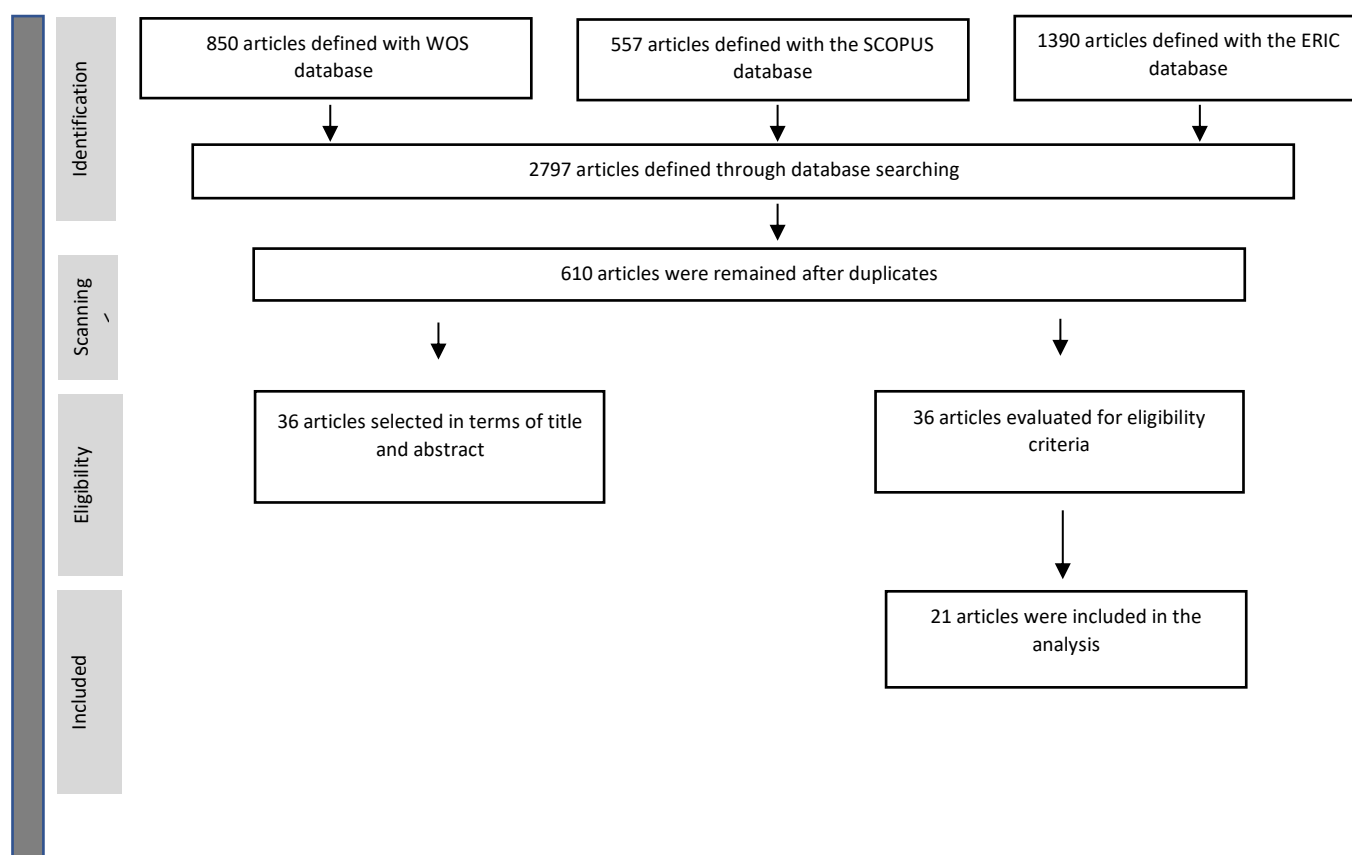
Database	Total number of publications ⁽¹⁾	Number of articles	Number of articles in English	Number of duplicate articles	Number of remaining articles in English
WOS	1.160	900	850	497	353
Scopus	691	558	557	411	146
Eric	2053	1406	1390	1177	213
Total	3.904	2.864	2.797	2.187	610

(1) Book, book chapter, article, research, project

In the first stage, keyword searches across three different databases yielded 3904 records. When the publications obtained were filtered according to the PRISMA eligibility criteria guidelines and the search terms, the number was reduced to 2,864, including studies of the ‘article’ and ‘research article’ types. In the second stage, when the criterion of ‘only publications written in English’ was applied, 2,797 English articles remained.

It was determined that a high proportion of the same articles emerged from the databases. After duplicates were reduced to a single English article, 610 articles in English, searched using the relevant keywords, remained for analysis. Following the review of titles and abstracts, 36 articles remained after excluding studies that did not fit the scope of the topic. After full-text review of these 36 articles, a final 21 articles that met all eligibility criteria were included in the analysis for this study. Consequently this 21 articles systematic review analysis comprehensively reveals overview of the trends, methodological diversity, methodological approaches, and findings of studies in the field of grammar learning strategies.

Table 3. PRISMA Flow Diagram



Data Collection and Analysis

This study comprehensively evaluated existing research on Grammar Learning Strategies (GLS) among students learning English as a foreign language at the higher education level by conducting a structured data collection and analysis process in accordance with PRISMA and inclusion/exclusion criteria. This systematic review employed a content analysis approach, adapted from Gönen and Aşık (2019), to examine each selected article in detail. This review included the following components: Reference Information (title of the article, author, year), general aim, research questions or hypotheses, method or research design, main findings, and further suggestions (Ceylan, 2025, p. 75).

Table 4. Summary of the articles included in the systematic review

Articles	Researchers and Years	Countries	Research Methods	Analysis Methods	Instruments	Results
Strategic Processing in Grammar Learning: Do Multilinguals Use More Strategies?	Kemp, (2007)	C. Scotland	Quantitative	Mann Whitney U, Correlation	Questionnaire	Research shows that as the number of languages spoken increases, multilinguals use more and more grammar learning strategies than bilinguals, and they also progress more effectively and quickly in language acquisition.

Spanish learning strategies of some good language learners	Morales, M., & Smith, D. J. (2008a).	America	Observation	Qualitative	—	The study demonstrates that mental and visual imagery strategies supported by motivation facilitate the learning of Spanish grammar.
Grammar learning strategies and language attainment: seeking a relationship	Pawlak, M. (2009).	Poland	Quantitative	Mann Whitney U, Correlation	Questionnaire	No significant correlation was found between GLS usage and language learning success; however, it was demonstrated that it influences how students approach their own learning and how they evaluate their learning.
What adult ESL learners say about improving grammar and vocabulary in their writing for academic purposes	Zhou, A. A. (2009).	Canada	Interview	Qualitative	Interview	It has revealed that students encounter difficulties in grammar and vocabulary usage in written language.
Identifying Language Learning Strategies: An Exploratory Study	Pineda, J. E. (2010).	Spain	Semi-structured interview	Qualitative	Personal information question, Interview	Students use strategies based on their mother tongue, and it has been understood that students need to be trained on appropriate strategy use to prevent this from causing incorrect learning.
Communicating Grammatically: Evaluating a Learner Strategy Website for Spanish Grammar	Cohen, A., Pinilla-Herrera, A., Thompson, J. & Witzig, L. (2011).	America	Qualitative, interview	Qualitative	Interview	It has been concluded that students can improve their performance by supporting their grammar learning with strategy-based websites.
On FL Learners' Individual Differences in Grammar Learning and Their Grammatical Competence Training	He, H. (2013)	China	Qualitative, interview	Qualitative	Interview, Personal information question, questionnaire	Individual differences are effective in grammatical skills, therefore an educational model is suggested to improve grammatical abilities.
L1-based strategies in learning the grammar of L2 English and L3 Russian by Polish learners	Wach, A. (2016).	Poland	Mixed methods research	Qualitative, Wilcoxon signed-rank test	Questionnaire, Semi-structured interview	It has been found that native language-based strategies are used as a supplementary resource in both L2 and L3 grammar learning. Moreover that, it has been noted that these strategies are adapted and used effectively by multilingual individuals when learning other languages.
Language Learning Strategies used by Adult Learners of Teaching English as a Second Language (TESL)	Hashim, U., Hashim, H. (2018).	Malaysia	Mixed methods research	Qualitative	Questionnaire, Semistructured interview	It is emphasized that for effective language learning, individuals should determine their own learning strategies and teachers should support them in this process.
Grammar Learning Strategy Inventory (GLSI): Another look	Pawlak, M. (2018).	Poland	Quantitative	Reliability, Validity (EFA), Correlation, PCA	Questionnaire	It has been demonstrated that the GLSI scale is largely valid and reliable, indicating that some improvements are required in its sub-dimensions.

Cognitive grammar learning strategies in the acquisition of tense-aspect morphology in L3 Catalan	Comajoan, L. (2019).	Spain	Qualitative	Qualitative	Audio record	It has been found that L3 learners use grammar-based strategies when selecting past tense structures, and that these strategies play an effective role in grammar accuracy levels.
On the Relationship between EFL Learners' Grammar Learning Strategy Use and Their Grammar Performance: Learners' Gender in Focus	Azizmohammadi, F., & Barjesteh, H. (2020).	Iran	Quantitative	Reliability, Correlation, test	Questionnaire	It was understood that grammar learning strategies had a significant positive effect on students' grammar success and it was concluded that women perform better than men both in strategy use and success.
Three Factors Affecting Language Learning: Grammar Learning Strategies, Self-efficacy, and Learner Autonomy	Çetinkaya, I. G., & Tilfarlioglu, F. Y. (2020).	Turkey	Quantitative	Reliability, Correlation, Regression, t-test, ANOVA	Questionnaire	The research addressed the active role of grammar learning strategies in classroom use by focusing on the relationship between self-efficacy and learner autonomy.
Grammar Learning Strategies across Individual Differences and Their Relationship with Grammar Mastery	Junaidi, M., & Alfian, Z. (2020).	Indonesia	Quantitative	Validity (EFA-PCA), Correlation	Questionnaire,	It shows that six types of grammar learning strategies are positively correlated and that strategy use has a positive relation with attitude and motivation. It has also been noted that the use of strategies increases grammar success.
A Study of the Relationship Between the Use of Grammar Learning Strategies and Student Achievement	Yeh, H. W. (2021).	Hong Kong	Mixed methods research	Reliability, Correlation	Questionnaire, Semi structured interview	A strong relationship has been identified between language proficiency and GLS, and it has been found that students with high levels of success use strategies more effectively.
A mixed methods approach to exploring grammar learning strategies in self-regulation task phases: Evidence from grounded theory and regression analysis	Hassanzadeh, M., & Ranjbar, M. (2022).	Iran	Mixed methods research	Regression and PCA	Questionnaire, Interview	The study indicated that students' goal setting and self-assessment skills significantly affect grammar achievement and revealed that developing students' self-regulation skills in strategy learning can have a positive effect on grammar learning.
Yet another look at strategies for learning grammar: Validating the Grammar Learning Strategy Inventory in the Iranian EFL context	Pawlak, M., Derakhshan, A., Mehdizadeh, M., & Kruk, M. (2023).	Iran	Quantitative	Reliability, Validity (EFA-CFA), Correlation	Questionnaire	In this study conducted in the context of Iran and the seven-factor structure of the GLSI scale has been largely confirmed by eliminating certain items.
Grammar Learning Strategies Used by ESL Undergraduate Students	Mohamad, F., Halim, N. S. A., Kadir, Z. A., & Abdullah, N. (2023).	Malaysia	Quantitative	ANOVA	Questionnaire	It has been determined that learners prefer cognitive, metacognitive, affective and social strategies from GLSI strategies, and it has been stated that teachers' educational plans based on these strategies can ensure grammar learning efficiency.

Investigating the Use of Grammar Learning Strategies in Hungary and Poland: A Comparative Study	Pawlak, M., & Csizér, K. (2023).	Poland, Hungary	Quantitative	Reliability, EFA -PCA, t-test, Correlation, Regression	Questionnaire	The study indicated that Hungarian and Polish students showed a strong preference for the “corrective feedback” strategy and that these two groups of students generally demonstrated similar approaches to GLS.
Developing a Grammar Learning/Use Strategy Questionnaire: A Mixed Model	Rouhiathar, M. (2023).	Iran	Quantitative	Structural Equation Models (SEM),EFA, CFA, PCA	Questionnaire	The research has proposed an original scale regarding grammar learning and usage strategies.
EFL Grammar Learning Strategy Use: Utilizing Grammar Learning Strategy Inventory in an Arabic Context	Alnufaie, M. R., & Alzahrani, I. H. (2024).	Saudi Arabia	Quantitative	Correlation, Regression	Questionnaire	It has demonstrated that the GLSI is a valid and reliable instrument for measuring strategy use by revealing that learners actively employ cognitive, metacognitive, social, and affective language learning strategies. Also, these strategies exhibit a positive and significant relationship among themselves.

FINDINGS AND DISCUSSION

This study has investigated 21 research articles on grammar learning strategies published in main three database which are WOS, Scopus and ERIC and findings have been systematically presented. After reporting each set of findings detailed discussions have been provided.

Table 5. Keyword distribution and publication numbers according to WOS (WEB of Science) search results

Keywords	Total number of publications (1)	Number of articles	Number of articles in English	Number of duplicate articles	Remaining number of articles in English
GLS+English Foreign Language+ University Students	143	103	95		
GLS+English Foreign Language+ Graduate Students	7	6	5		
GLS+English Foreign Language+ Undergraduate Students	9	9	9		
Total	159	118	109	13	96
GLS+English Second Language+ University Students	80	60	58		
GLS+English Second Language+ Graduate Students	1	0	0		

GLS+English	Second	Language+	6	6	6		
Undergraduate Students							
Total			87	66	64	5	59
GLS+ English	language+	University	328	250	237		
Students							
GLS+ English	language+	Graduate Students	16	14	12		
GLS+English	Language+	Undergraduate	18	18	18		
Students							
Total			362	282	267	29	238
GLS+ English+ University	Students		418	319	302		
GLS+ English+ Graduate	Students		21	19	16		
GLS+English+ Undergraduate	Students		20	20	20		
Total			459	358	338	35	303
"Grammar learning"+strategies	OR		93	76	72	0	72
"learning grammar"+strategies							
The total rows			1.160	900	850	82	768
General total			1.160	900	850	497	353

(1) Book, book chapter, article, research, project etc.

* GLS means grammar learning strategy

* “+” means “AND”

Table 5 presents the results of keyword search strategies in the Web of Science (WOS) database, along with a qualitative and quantitative analysis of academic production. When examining the search groups, the number of studies in the "Foreign Language" context (159 publications) is almost twice as high as that in the "Second Language" context (87 publications), suggesting that research on global English language learning (EFL) is more commonly indexed in WOS than on studies in migration- or settlement-based Second Language (ESL) settings.

A striking homogeneity is observed across student levels. In both main contexts, university students (143 and 80 publications) constitute the dominant focus of the research, while the studies targeting graduate and undergraduate students within the total publications remains quite limited. This indicates that the diversity of groups researched in this field is insufficient or that the academic focus is primarily on university students as an umbrella term. The highest number of publications achieved by expanding the search terms from specific (Foreign/Second Language) to "GLS+English" (459 publications) confirms that researchers mostly use general keywords to maximize their search results in WOS. Furthermore, the fact that even a specific topic such as methodology-specific ‘Grammar learning’ strategies (93 publications) has

achieved a high number of publications demonstrates that studies on grammar learning are considered as a popular sub-discipline within the language strategies literature.

An examination of the total rows reveals that 900 of the 1,160 total publications are articles. This indicates that peer-reviewed articles are the main form of scientific contribution in the discipline. However, the main critical finding emerges in the duplicate record analysis. Although there were initially 850 English language articles, the final screening and re-examination resulted in a high level of duplicate articles, more than half of the total, at 497, and consequently, the remaining number of English language articles fell to 353. This suggests that a significant portion of research in this field is duplicated across different search combinations or listed multiple times in different databases. This high duplication rate serves as an important warning to the academic community that researchers should be careful regarding studies based on screening data, and that the number of primary literature may be much lower than first impressions.

Table 6. Keyword distribution and publication numbers according to SCOPUS search results

Keywords	Total number of publications ⁽¹⁾	Number of articles	Number of articles in English	Number of duplicate articles	Remaining number of articles in English
GLS+English Foreign Language+ University Students	102	79	79		
GLS+English Foreign Language+ Graduate Students	9	8	8		
GLS+English Foreign Language+ Undergraduate Students	26	22	22		
Total	137	109	109	30	79
GLS+English Second Language+ University Students	104	81	81		
GLS+English Second Language+ Graduate Students	12	12	12		
GLS+English Second Language+ Undergraduate Students	30	26	26		
Total	146	119	119	37	82
GLS+ English language+ University Students	110	86	86		
GLS+ English language+ Graduate Students	12	12	12		
GLS+English Language+ Undergraduate Students	30	26	26		
Total	152	124	124	36	88
GLS+ English+ University Students	110	86	86		
GLS+ English+ Graduate Students	12	12	12		
GLS+English+ Undergraduate Students	30	26	26		
Total	152	124	124	36	88
"Grammar learning"+strategies OR "learning grammar"+strategies	104	82	81	0	81

The total rows	691	558	557	139	418
General total	691	558	557	411	146

⁽¹⁾ Book, book chapter, article, research, project etc.

* GLS means grammar learning strategy

* “+” means “AND”

Table 6 presents the results of searches conducted in the SCOPUS database using the keywords "GLS" (Grammar Learning Strategy) and "English," which show significant differences from WOS results. An examination of the search groups reveals that SCOPUS offers a more balanced distribution compared to WOS: the ‘Second Language’ context (146 publications) slightly surpasses the ‘Foreign Language’ context (137 publications). This suggests that, unlike WOS, SCOPUS more effectively indexes studies in English as a Second Language (ESL) settings.

Regarding the keywords indicating the student profile searched, although university students (102 and 104 publications) are the most studied population in both main contexts, the number of studies focusing on graduate students (9 publications) and undergraduate students (26 publications) in the ‘Foreign Language’ context is higher according to WOS. The relatively high number of graduate (12 publications) and undergraduate (30 publications) studies, particularly in the "Second Language" group, indicates that this database better represents the literature focusing on different student groups. The lack of a significant jump in the total number of publications when the search terms were de-specified to "GLS+English" (152 publications) may indicate that most of the publications in this field are already clustered under the term "Language" in SCOPUS. Furthermore, the high publication count for even a specific topic such as "Grammar learning strategies" (104 publications) and the absence of duplicates (0 duplicates) in this search highlight the originality and clarity of the publications on this specific topic within the database.

An examination of the final total rows reveals that 558 of the 691 total publications are articles, demonstrating that peer-reviewed articles remain the primary form of scientific contribution. However, the most critical finding emerges from the analysis of duplicate records. The final review revealed that only 146 English articles remained after removing duplicates. This highlights the critical importance of search combinations and record cleaning in SCOPUS; the number of publications, which initially appeared high, fell to approximately a quarter after detailed analysis and the removal of duplicate records. The final 146 articles reveal that the original and primary literature in the field is a narrower than initially appeared.

Table 7. Keyword distribution and publication numbers according to ERIC search results

Keywords	Total number of publications ⁽¹⁾	Number of articles	Number of articles in English	Number of duplicate articles	Remaining number of English articles
GLS+English Foreign Language+ University Students	200	147	145		

GLS+English Foreign Language+ Graduate Students	30	12	12		
GLS+English Foreign Language+ Undergraduate Students	200	147	145		
Total	430	306	302	148	154
GLS+English Second Language+ University Students	222	158	156		
GLS+English Second Language+ Graduate Students	38	14	14		
GLS+English Second Language+ Undergraduate Students	221	158	156		
Total	481	330	326	160	166
GLS+ English language+ University Students	241	171	169		
GLS+ English language+ Graduate Students	39	14	14		
GLS+English Language+ Undergraduate Students	240	171	169		
Total	520	356	352	173	179
GLS+ English+ University Students	265	183	181		
GLS+ English+ Graduate Students	42	16	16		
GLS+English+ Undergraduate Students	263	182	180		
Total	570	381	377	185	192
"Grammar learning"+strategies OR "learning grammar"+strategies	52	33	33	1	32
The total rows	2.053	1406	1390	667	723
General total	2.053	1.406	1.390	1177	213

⁽¹⁾ Book, book chapter, article, research, project etc.

* GLS= grammar learning strategy

* ‘+’ means ‘AND’

Table 7 analyses the search results obtained in ERIC, a database specialising in educational sciences, using the keywords ‘GLS’ (Grammar learning strategy) and ‘English’. The total number of publications presented in the table, 2,053, clearly shows that ERIC has the highest publication volume in this field compared to WOS and SCOPUS. The fact that 1,406 of the total publications are articles confirms that, as in other databases, articles are the main form of academic contribution.

When the search groups are examined, the slightly higher number of studies in the context of "Second Language" (481 publications) than in the context of "Foreign Language" (430 publications) suggests that, similar to SCOPUS, ERIC effectively indexes research in which English is used as a second language (ESL). In terms of student groups, this table shows a striking balance compared to previous databases. In both the Foreign Language and Second Language groups, studies focusing on undergraduate and graduate students show that ERIC has indexed them with a strong focus on field applications. The broadest search, ‘GLS+English’

(570 publications), achieved the highest number of publications, maintaining the importance of search breadth.

The total rows emphasise the importance of database cleaning. In the data containing 1,390 English articles, the final review identified 667 duplicate articles, which is nearly half of the total. However, when keyword groups were checked against each other, the number of duplicates was 1,177, resulting in only 213 unique English articles remaining. This finding shows that despite the high publication volume in ERIC, the same keyword combinations are frequently repeated across different student levels or research groups.

Table 8. Distribution of the Articles by Year of Publication

Year	Frequency	Percentage
2007	1	4.76%
2008	1	4.76%
2009	2	9.52%
2010	1	4.76%
2011	1	4.76%
2013	1	4.76%
2016	1	4.76%
2018	2	9.52%
2019	1	4.76%
2020	3	14.29%
2021	1	4.76%
2022	1	4.76%
2023	4	19.04%
2024	1	4.76%
Total	21	100.0%

A review of the studies obtained as a result of the research reveals that the first publication examining the topic of grammar learning strategies in university students was published in 2007, and this shows that this field does not go back very far in the history of ELT. Most of the 21 articles included in the study are seen as the only study conducted in the year they were published. The absence of any articles in certain years between 2007 and 2016 highlights the limited nature of research in this field. Compared to the period between 2007 and 2016, when research exploring the status of university students' grammar learning strategies was in its infancy, research in this area has gained momentum since 2018. Between 2020 and 2023, three

articles (14.29%) and four articles (19.04%) were published, respectively, and these observed peaks correspond to one-third (33.3%) of the total number of studies. This indicator supports the increased interest in GLS studies in recent years and its emergence as a current research topic. Consequently, it is understood that the increase in studies in this field over the years is an important indicator that the field has entered a period of academic production and that studies in the GLS field are likely to increase further in the future.

Table 9. Distribution of Articles Across Countries

Country	Frequency of country	Percentage
Scotland	1	4,76%
America	2	9,52%
Poland	3	14,29%
Canada	1	4,76%
Spain	2	9,52%
China	1	4,76%
Iran	4	19,05%
Turkiye	1	4,76%
Indonesia	1	4,76%
Hong Kong	1	4,76%
Malaysia	2	9,52%
Poland, Hungary	1	4,76%
Saudi Arabia	1	4,76%
Total	21	100,00%

The distribution of studies by country shows that research in the field of GLS is quite widespread across various countries, but concentrated in certain regions. According to the table, Iran has the highest publication rate with 4 studies (19.05%). Furthermore, a detailed examination of the table reveals that, in addition to the three publications (14.29%) from studies conducted by Pawlak and colleagues, when the joint study conducted by Poland and Hungary is included, research conducted in Iran and Poland is ahead of other countries. The United States (9.52%), Spain (9.52%) and Malaysia (9.52%) show that GLS studies are supported around the world with a moderate number of studies. In contrast, Scotland, Canada, China, Turkey, Indonesia, Hong Kong, and Saudi Arabia have conducted only one study each (4.76%) at this level of GLS research. Consequently, in addition to the geographical diversity presented, it

indicates that future researchers can prepare the ground for comparative studies in GLS research and that studies can be conducted in more diverse cultural contexts.

Table 10. Distribution of the Studies by Research Method

Research Method	Frequency	Percentage (%)
Quantitative	10	43,48
Qualitative	4	17,39
Mixed Methods	4	17,39
Semi-Structured Interviews and interview	4	17,39
Observation	1	4,34
Total	23	100,0

The examination of the methods used in this systematic review reveals that researchers aim to understand GLS by utilizing both quantitative and qualitative data. The methodological distribution of the studies appears balanced, though with a slight bias towards quantitative approaches. Quantitative research has the highest proportion, with a total of 10 studies (43.48%). In such studies, researchers aim to present the measurable variables of GLS with generalisable results through means such as scales, surveys, and statistical modelling.

Research employing mixed methods has also been frequently used to achieve a more comprehensive understanding by supporting quantitative data. Rather than examining the multidimensional nature of language learning strategies through statistical analysis, it reveals that both the behavioural and cognitive aspects of these strategies are investigated simultaneously. This study found that the mixed method was used at a rate of 17.39 percent.

The Semi-Structured Interviews and Interview method was used in four studies (17.39%) to deeply examine participants' personal experiences and subjective opinions. However, all studies using the mixed method also used interviews, and it appears to be the most frequently used method in the studies. The frequent use of this method in studies demonstrates the importance of the participant's interpretation of the process and the need for in-depth analysis.

When interviews and observations are included, the number of studies using qualitative methods increases to 9, making the proportion 39.13% of the total studies. The almost balanced distribution of qualitative and quantitative studies indicates that research in this field uses mixed research methods to produce results, both generalizable with numerical data and in-depth analysis of original data.

In conclusion, the frequent use of various methods in the studies examined in this study indicates that mixed methods have a multidimensional methodological tendency in GLS research.

Table 11. Distribution of Data Collection Instruments

Scale	Number of scales	%
Adapted scales	10	40,00
From Pawlak's GLSI	4	
From Oxford's SILL	5	
From Cohenand Chi's LSUI	1	
Development	4	16, 00
GLS	2	
GLSI	1	
GLUSQ	1	
Original survey employment	1	4,00
GLSI	1	
Observation, auido record	2	8,00
Interviews (including semi-structured)	8	32,00
General total	25	100,00

Twenty-five different data collection tools and measurement methods have been used in the 21 articles examined. This diversity, as seen in the table, reveals the interdisciplinary nature and methodological richness of GLS. The proportion of articles that adapted previously developed scales to their own studies is highest at 40.00%. Within this group of study, the SILL scale developed by Oxford (1990), a pioneer in LLS studies, is the most frequently used scale in five studies. It is understood that this scale serves as the fundamental reference point for measuring language learning strategies. Pawlak's (2018) GLS Inventory, a prominent scale in current scale development and adaptation studies, was adapted and used in four studies. Furthermore, the Language Strategy Use Inventory (LSUI) by Cohen, Oxford, and Chi (2000) and Cohen, Oxford, and Chi (2002) was adapted and used in one study. The fact that scale development studies were conducted in four (16.00%) of the reviewed literature indicates that original measurement tools are open to development or that researchers generally tend to adapt existing scales.

Furthermore, it is observed that non-scaled data collection methods such as observation, audio recording and interviews also play a significant role, accounting for approximately 40.00 per cent. The use of the interview method demonstrates that data collection methods are also

conducted using qualitative methods to gain an in-depth understanding of personal experiences and subjective expressions in GLS studies.

Attempting to analyse the same topic using different scales and measurement methods clearly demonstrates the importance of grammar learning strategies in the literature from all perspectives. In terms of finding the findings, both qualitative and quantitative data collection methods in the literature demonstrate their methodological richness. Analyzing these two types of data provides flexibility in terms of data collection in various ways while maintaining a specific focus, thereby adding depth to the field.

Table 12. Distribution of Statistical Methods

Statistical method	Frequency of statistical method	Percentage (%)
Mann Whitney U	2	4,34
t test	3	6,52
ANOVA	2	4,34
Correlation	9	19,56
Simple regression	2	4,34
Multiple regression	3	6,52
Reliability (Cronbach)	6	13,04
EFA	3	6,52
EFA-CFA	2	4,34
PCA	5	10,87
SEM	1	2,17
Qualitative	8	17,40
Total	46	100,0

When the approaches to data analysis in GLS studies are examined, it is seen that a total of 46 statistical and analytical methods were used in 21 studies and they included both basic statistical techniques and advanced modeling methods in their studies. Correlation analysis, used in nine of the studies (19.56), is the primary method used to examine the relationship between GLS and other variables. Researchers primarily used correlation analysis to examine the relationships between GLS and other outcomes, attempting to reveal the direction and strength of their influence. To assess differences between groups, comparative statistical methods such as the t-test (6.52%), ANOVA (4.34%), and Mann-Whitney U test (4.34%) were used to test differences in GLS use across various variables.

Another commonly used method is qualitative analysis. Studies employing research methods such as interviews, observation, and audio recording have presented their findings using qualitative analysis methods to examine the direction and strength of the data they obtained. The use of qualitative analysis (17.40%) at such a close rate to quantitative analysis indicates that researchers aim to examine university students' experiences and perceptions in depth, in addition to the results they present with quantitative data. Considering the high rate of use of qualitative analysis methods, it is understood that researchers placed equal importance on incorporating this statistical method into their studies.

A detailed examination of the articles included in this study reveals that some studies involve scale development and cultural adaptation processes. For this reason, Cronbach's alpha was used for reliability analysis, which was used to statistically test the internal consistency of the scales in six studies (13.04%). Additionally, in scale validity studies, EFA was used in 3 studies (6.52%) for factor analyses, EFA and CFA were used together in 2 studies (4.34%), and SEM was used in only 1 study (2.17%) to test the relationships between factors or variables or to measure the construct validity of measurement tools. Finally, Principal Component Analysis (PCA), used to group scale items encountered during the scale development process to reduce data or reveal the factor structure, was used in a total of 5 studies (10.87%).

Overall, it is understood that the approach to data analysis in GLS studies includes quantitative statistical models as well as studies that use qualitative analysis and interpretative analysis. This indicates that the literature on GLS studies has matured methodologically. Therefore, the findings support the openness of future studies to multidimensional analyses.

D. CONCLUSION AND SUGGESTION

Conclusion

This systematic review comprehensively examined studies on Grammar Learning Strategies (GLS) conducted on university students learning English as a Foreign Language (EFL) or English as a Second Language (ESL). It has comprehensively examined English-language articles obtained through an extensive literature search conducted on the Web of Science (WOS), Scopus, and ERIC databases, revealing trends in the field in a multidimensional manner. From the 3,904 studies obtained from these databases, only 21 articles were found suitable for detailed analysis during the article review stage, based on the inclusion and exclusion criteria determined.

When the relevant articles are examined in a time context, a limited number of studies were found between 2008 and 2016, while there has been a noticeable increase since 2018 and a distinct concentration between 2020 and 2023. It can be concluded that the use of grammar learning strategies has gained importance within the academic community over the years. This process suggests that the language learning process focuses not only on the accuracy of linguistic skills but also on learners' self-learning strategies, self-regulation, and awareness.

An examination of the geographic distribution of studies reveals that Iran and Poland stand out among the countries conducting research in this area, followed by Malaysia, the United States, and Spain. This situation shows that although GLS research began as a Western-centred field of

study, it has spread to Asia and other geographical regions. This study demonstrates that studies on the use of GLS have academic findings at the higher education level in many countries around the world.

In terms of data collection tools, it was determined that scales developed/adapted from Oxford's Strategy Inventory for Language Learning (SILL) and Pawlak's Grammar Learning Strategy Inventory (GLSI) studies were predominantly used in this study (36%). This indicates that Oxford and Pawlak are considered primary reference points in GLS studies. On the other hand, the fact that only 16% of the scales developed are original indicates that there is still a lack of diversity in this field, or alternatively, it highlights the high success rate of the measurement tools produced by Oxford and Pawlak in demonstrating the use of GLS. Apart from scale development and adaptation studies, researchers who examined personal thoughts and experiences in depth used qualitative data collection techniques such as interviews and observations at a high rate (40%).

These collected data were analysed using a wide variety of methods to produce the results. The most frequently used types of analysis were correlation (19.56%) and reliability (Cronbach's alpha) (13.04%), alongside the frequent use of advanced statistical techniques such as Principal Component Analysis (PCA), Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM), as well as qualitative analyses. This demonstrates the methodological maturity in this field of study.

When all these findings are evaluated, GLS studies show that they have developed year by year in terms of theoretical depth, methodological diversity, statistical and qualitative analysis methods, and geographical scope. However, there are still some limitations in terms of the lack of field scale development studies and diversity in cultural contexts. The study reveals that the number of scales developed in this field and their adaptation to various cultures are limited.

In conclusion, this systematic review has revealed the accumulated knowledge on grammar learning strategies (GLS) by conducting a comprehensive analysis of publications through databases such as Web of Science, Scopus, and ERIC, analysing the historical development of the field, research trends, methodological preferences, and measurement tools. In doing so, it has contributed to the theoretical foundations of GLS and shown researchers the general direction of this topic. It thus provides researchers with a comprehensive roadmap for in-depth research into strategy awareness in grammar teaching processes, and offers teachers and programme developers a comprehensive roadmap for planning or organising grammar in English language teaching.

Suggestions for Further Studies

The study only examined empirical studies investigating university students' use of GLS. Therefore, future studies conducted in a wider range of educational contexts would provide a clearer understanding of the size and trends in the field. Moreover that, future research that considers both quantitative and qualitative studies across various societies and languages would provide valuable contributions to the field. In addition to the databases used, various other databases can be included to cover the entire field. Furthermore, the scope of the study can be expanded to include other publication types in addition to articles. Although three databases with comprehensive and high indexing standards were used to conduct a comprehensive search,

absolute coverage could not be achieved. Furthermore, this field can be analysed in detail by examining the results of qualitative and quantitative studies in depth from different perspectives.

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REFERENCES

- Abri, A. A. (2017). Grammar Learning Strategies in Omani EFL Classes: Type and Relation to Student Proficiency. *Journal of Studies in Education* 7(2) ISSN 2162- 6952 2017
- Alnufaie, M. R., & Alzahrani, I. H. (2024). EFL grammar learning strategy use: Utilizing grammar learning strategy inventory in an Arabic context. *TESL-EJ*, 27(4), 1-15. <https://doi.org/10.55593/ej.27108a6>
- Azizmohammadi, F., & Barjesteh, H. (2020). On the relationship between EFL learners' grammar learning strategy use and their grammar performance: Learners' gender in focus. *Journal of Language Teaching and Research*, 11(4), 583–592.
- Burnham, J.F. (2006) Scopus database: a review. *Biomed Digit Libr* 3(1). <https://doi.org/10.1186/1742-5581-3-1>
- Ceylan, U. (2025). A Systematic Review of Recent Studies on Second Language and Foreign Language Listening Strategies. *Contemporary English Language Studies*, 1(1), 72-88.
- Cohen, A. D., & Pinilla-Herrera, A. (2010) *Communicating grammatically: Constructing a learner strategies website for Spanish*. In T. Kao & Y. Lin (Eds.), *A new look at language teaching and testing: English as subject and vehicle* (pp. 63-83). Taipei, Taiwan: The Language Training and Testing Center.
- Cohen, A., Pinilla-Herrera, A., Thompson, J. & Witzig, L. (2011). Communicating grammatically: Evaluating a learner strategy website for Spanish grammar. *CALICO Journal*, 29(1), 145-172.
- Cohen, A.D. (2014). *Strategies in Learning and Using a Second Language*. New York: Routledge.
- Comajoan, L. (2019). Cognitive grammar learning strategies in the acquisition of tense-aspect mor-phology in L3 Catalan. *Language Acquisition*, 26(3), 262–281. <https://doi.org/10.1080/10489223.2018.1534965>

- Çetinkaya, I. G., & Tilfarlioglu, F. Y. (2020). Three factors affecting language learning: Grammar learning strategies, self-efficacy, and learner autonomy. *Universal Journal of Educational Research*, 8(7), 2929–2936. <https://doi.org/10.13189/ujer.2020.080721>
- Çınar, N. (2021). İyi Bir Sistematik Derleme Nasıl Yazılmalı?. *Online Türk Sağlık Bilimleri Dergisi*, 6(2), 310-314
- Debata, P. (2013). The Importance of Grammar in English Language Teaching- A Reassessment. *Language in India* 13(5), 482- 486.
- Ellis, R. (2006). Current Issues in the Teaching of Grammar: An SLA Perspective. *TESOL Quarterly*, 40(1), 83-107.
- Falagas, M. E., Pitsouni, E. I., Malietzis, G. A., & Pappas, G. (2008). Comparison of PubMed, Scopus, Web of Science, and Google Scholar: strengths and weaknesses. *FASEB journal: official publication of the Federation of American Societies for Experimental Biology*, 22(2), 338–342. <https://doi.org/10.1096/fj.07-9492LSF>
- Gönen, S. İ., & Aşık, A. (2019). A review of studies on CALL teacher education: trends and issues. In G. Y. Ekşi, L. Guerra, D. Werbińska, & Y. Bayyurt, *Research Trends in English Language Teacher Educaon and English Language Teaching* (pp. 343-362). University of Évora.
- Hashim, H. U., & Hashim, H. (2018). Language Learning Strategies Used by Adult Learners of Teaching English as a Second Language (TESL). *TESOL International*, 13, 39-48.
- Hassanzadeh, M., & Ranjbar, M. (2022). A mixed methods approach to exploring grammar learning strategies in self-regulation task phases: Evidence from grounded theory and regression analysis. *Language Teaching Research*, 13621688221090824.
- He, H. (2013). On FL Learners Individual Differences in Grammar Learning and Their Grammatical Competence Training. *Theory and Practice in Language Studies Academy Publisher*, 3(8).
- Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (Eds.). (2023). *Cochrane Handbook for Systematic Reviews of Interventions* (Version 6.4). The Cochrane Collaboration (2023). Available from www.cochrane.org/handbook
- Hişmanoglu, M. (2000). Language Learning Strategies in Foreign Language Learning and Teaching. *The Internet TESL Journal*, 6 (8), 1-8. Retrieved from <http://iteslj.org/Articles/Hismanoglu-Strategies.html>.
- Junaidi, M., & Alfian, Z. (2020). Grammar learning strategies across individual differences and their relationship with grammar mastery. *Asian EFL Journal Research Articles*, 27(2), 89-108. <https://www.asian-efl-journal.com/monthly-editions-new/2020-monthly-editions/volume-27-issue-2-1-april-2020/index.htm>
- Karasözen, B., Gökkurt Bayram, Ö., & Umut Zan, B. (2011). WoS ve Scopus Veri Tabanlarının Karşılaştırması. *Türk Kütüphaneciliği*, 25(2), 238-260.
- Kemp, C. (2007) Strategic Processing in Grammar Learning: Do Multilinguals Use More Strategies, *International Journal of Multilingualism*, 4(4), 241-261, <https://doi.org/10.2167/ijm099.0>

- Khan, K. S., Kunz, R., Kleijnen, J., & Antes, G. (2003). Five steps to conducting a systematic review. *Journal of the Royal Society of Medicine*. doi: 10.1258/jrsm.96.3.118
- Kitchenham, B. (2004). *Procedures for performing systematic reviews*, 33. Keele, UK, Keele University, 1-26.
- Lasserson, T. J., Thomas, J. & Higgins, J. P. T. (2019). Starting a review. In J. P. T. Higgins vd. (Eds), *Cochrane handbook for systematic reviews of interventions* (2nd Edition) (pp. 3-12). Hoboken: Wiley-Blackwell.
- Mohamad, F., Halim, N. S. A., Kadir, Z. A., & Abdullah, N. (2023). Grammar learning strategies used by ESL undergraduate students. *Asian Journal of University Education (AJUE)*, 19(3), 462-473. <https://doi.org/10.24191/ajue.v19i3.23325>
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS medicine*, 6(7), e1000097. <https://doi.org/10.1371/journal.pmed.1000097>
- Morales, M., & Smith, D. J. (2008a). Spanish learning strategies of some good language learners. *Porta Linguarum*, 9, 167-177.
- Newman, M., Gough, D. (2020). Systematic reviews in educational research: Methodology, perspectives and application. In O. Zawacki-Richter, M. Kerres, S. Bedenlier, M. Bond & K. Buntins (Eds.), *Systematic reviews in educational research: Methodology, perspectives and application* (pp. 3–22). Springer VS. https://doi.org/10.1007/978-3-658-27602-7_1
- Oxford, R. L. (1990), *Language learning strategies: what every teacher should know*. Boston, Massachusetts: Heinle And Heinle Publishers.
- Oxford, R. L. (2017). *Teaching and researching language learning strategies: Self-regulation in context*. New York and London: Routledge.
- Pawlak, M. (2009). Grammar Learning Strategies and Language Attainment: Seeking a Relationship. *Research in Language* 7: 43-60.
- Pawlak, M. (2016). The role of autonomy in learning and teaching foreign language grammar. In M. Pawlak, A. Mystkowska-Wiertelak, & J. Bielak (Eds.), *Autonomy in second language learning: Managing the resources* (pp. 3–19). Heidelberg – New York: Springer.
- Pawlak, M. (2018). Grammar Learning Strategy Inventory (GLSI): Another look. *Studies in Second Language Learning and Teaching*, 8(2), 351-379. doi: 10.14746/ssllt.2018.8.2.8.
- Pawlak, M. (2020). Grammar learning strategies as a key to mastering second language grammar: A research agenda. *Language Teaching*, 53(3), 358-370.
- Pawlak, M., & Csizér, K. (2023). Investigating the use of grammar learning strategies in Hungary and Poland: A comparative study. *Applied Linguistics*, 44(2), 347-369. <https://doi.org/10.1093/applin/amac038>

- Pawlak, M., Derakhshan, A., Mehdizadeh, M., & Kruk, M. (2023). Yet another look at strategies for learning grammar: Validating the Grammar Learning Strategy Inventory in the Iranian EFL context. *System*, 118, 103139. <https://doi.org/10.1016/j.system.2023.103139>
- Purpura, J. E. (2004). *Assessing Grammar*. Cambridge University Press 978-0-521-80281-9.
- Pineda, J. E. (2010). Identifying Language Learning Strategies: An Exploratory Study. *Gist Education and Learning Research Journal*, 4 (1), 94-106.
- Rouhiathar, M. (2023). Developing a Grammar Learning/Use Strategy Questionnaire: A Mixed Model. *Language Teaching Research Quarterly* 36: 15–34. doi:10.32038/ltrq.2023.36.02.
- Saaristo, P. (2015). Grammar is the heart of language: grammar and its role in language learning among Finnish university students. In J. Jalkanen, E. Jokinen, & P. Taalas (Eds.), *Voices of pedagogical development – Expanding, enhancing and exploring higher education language learning* (pp. 279-318). Dublin: Research doi:10.14705/rpnet.2015.000296
- Tilfarlıoğlu, F., & Yalçın, E. (2005). An analysis of the relationship between the use of grammar learning strategies and student achievement at English preparatory classes. *Journal of Language and Linguistic Studies*, 1(2), 155-169.
- Wach, A. (2016). L1-based strategies in learning the grammar of L2 English and L3 Russian by Polish learners. *System*, 61, 65–74. <https://doi.org/10.1016/j.system.2016.08.001>
- Wang, F. (2010). The Necessity of Grammar Teaching. *English Language Teaching Vol. 3, No. 2*; June 2010. www.ccsenet.org/elt
- Wenden, A., Rubin, J. (1987). *Learner strategies in language learning*. Cambridge: The University Press.
- Yeh, H. W. (2021). A study of the relationship between the use of grammar learning strategies and student achievement. *IJAET* 12, 34–46. doi: 10.4018/IJAET.2021070103
- Zhang, J. (2009). Necessity of Grammar Teaching. *International Education Studies*, 2(2), 184-187
- Zhou, A. A. (2009). What adult ESL learners say about improving grammar and vocabulary in their writing for academic purposes. *Language Awareness*, 18(1), 31-46.
- Zhou, Z. (2017). The Investigation of the English Grammar Learning Strategy of High School Students in China. *Theory and Practice in Language Studies*, Vol. 7, No. 12, pp. 1243-1248, December 2017 doi: <http://dx.doi.org/10.17507/tpls.0712.11>

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