

The Effect of Syntax Surgery Strategy on Iraqi EFL Preparatory School Students' Reading Comprehension Skills

Hala Safa Mirjan¹, Prof. Dr. Sabeeha Hamza Dehham²

¹College of Basic Education, University of Babylon

bas730.halh.safaa@student.uobabylon.edu.iq

²College of Basic Education, University of Babylon

basic.sabeha.hamza@uobabylon.edu.iq

HOW TO CITE:

Hala Safa Mirjan, Sabeeha Hamza Dehham (2026). The Effect of Syntax Surgery Strategy on Iraqi EFL Preparatory School Students' Reading Comprehension Skills. International Journal of Special Education, 41(2s), 265-274.

COPYRIGHT STATEMENT:

Copyright: © 2026 Authors.
Open access publication under the terms and conditions of the Creative Commons Attribution (CC BY)

license (<http://creativecommons.org/licenses/by/4.0/>).

ABSTRACT:

Although curricular reforms in EFL education in Iraq have been maintained, the issue of reading comprehension remains an obstacle to the preparatory school students. Despite high emphasis on vocabulary teaching, comparatively little is given to sentence-level syntactic processing, which is required to build textual sense. In this paper, the researcher will look at how the Syntax Surgery Strategy influences reading comprehension levels of Iraqi EFL preparatory school students. The study design was a quasi-experimental pretest- posttest control group study design that involved 98 fourth-year preparatory students; an experimental group (n = 48) and a control group (n = 50) were taught using sentence segmentation and syntactic reconstruction exercises, respectively. The test on reading comprehension developed by a researcher, which was validated by an expert review and pilot tests, was conducted before and after the intervention. The independent samples t-tests, paired samples t-tests, and measures of effect size were used to analyze data. The research aims to find out whether it is true that the structured syntactic manipulation enhances sentence-level parsing and the overall reading comprehension. It is hoped that the results will have implications in strategy-driven reading pedagogy in low-resource EFL settings and be able to offer empirical evidence regarding the incorporation of syntactic awareness into the teaching of reading at the secondary level.

Keywords: Syntax Surgery Strategy; reading comprehension; syntactic awareness; EFL students; Iraqi preparatory schools.

I. INTRODUCTION

Reading comprehension is a basic academic ability in the English as a Foreign Language (EFL) settings (Vettori & Bigozzi, 2025). In a country with little access to real input of the English

language like in Iraq, reading is not only a language skill but also a major source of linguistic growth (Siregar, 2025). Nevertheless, even after several years of formal training, a significant number of Iraqi learners at the preparatory school level still

demonstrate poor reading skills, especially when reading syntactically complicated texts (Al Zubaidi, 2021). A deficiency in vocabulary explanation and translation-related activities remains a persistent problem in the Iraqi EFL classrooms (Al Sabah, 2024). Although the use of lexical knowledge in facilitating comprehension cannot be ignored, studies have always shown the importance of syntactic processing in building coherent meaning (Alshehri, 2021). Students are used to knowing separate words, not understanding the grammatical connection in the sentences and this net effect is incomplete comprehension (Almarshedi, 2022).

Much of the theoretical models of reading comprehension have emphasized the primary role of sentence-level parsing (Kusumarasdyati, 2023). The conceptualization of reading comprehension is the Simple View of Reading, which was put forward by Gough and Tunmer, where reading comprehension is seen as the result of the processes of decoding and linguistic comprehension (Gough and Tunmer, 1986). In the context of linguistic understanding, syntactic awareness is a structural process, which coordinates semantic interpretation (Matchin, 2020; Dehham & Abbas, 2025a).

On the same note, in his Construction-Integration Model, Kintsch points out that an understanding commences with the correct establishment of propositional representations on sentence level (1998). In case syntactic dependencies are incorrectly analyzed, the assimilation of information into a consistent mental understanding is jeopardized (MacKay et al, 2021).

In cognitive terms, the Cognitive Load Theory by John Sweller goes on to provide the means by which syntactic complexity may break the boundaries of the working memory on EFL learners (2011a). Sentences with embedded clauses, passive forms and thick nominal groups present a high intrinsic cognitive load especially in cases where the learners are not yet syntactically encoded (Liu & Hu, 2024; Rahoomi et al, 2019).

To address these issues, the current research proposes Syntax Surgery Strategy which is a

systematic teaching method wherein students are required to break down the complex sentences into their grammatical parts and subsequently reassemble them to explain syntactic associations (Khalaf, 2025). In contrast to conventional teaching of grammar, which tends to separate rules out of context, Syntax Surgery incorporates syntactic analysis into passages of reading (Khalee, 2022).

Despite the fact that previous studies have investigated the role-play, communicative, and technology-enhanced instruction in Arab EFL, there is little empirical evidence that has focused on teaching structured sentence-level interventions at preparatory level in Iraq.

In the current research, the researcher intends to establish how effective the Syntax Surgery Strategy is in enhancing the reading comprehension performance of Iraqi EFL fifth-grade preparatory learners. In a bid to achieve this objective, the hypothesis is as follows: "The comparison of the reading comprehension score of students taught by the Syntax Surgery Strategy and those taught by the traditional instructional methods shows a statistically significant difference."

II. LITERATURE REVIEW

1. Reading Comprehension in EFL Contexts

A comparison between the reading comprehension score of students who are taught with Syntax Surgery Strategy and those taught with the traditional instructional methods indicate that there is a statistically significant difference⁷. In comparison to the first language readers, EFL learners have a tendency to process texts under a greater cognitive load because their automatic processing of syntactic and lexical information is poor (Alshehri, 2021). Reading on foreign language situations, therefore, becomes slower, more tedious, and more likely to break the comprehension (Almarshedi, 2022).

Kusumarasdyati says that in second language reading, the lower level processes, including word recognition and syntax decoding, must interact with the higher level processes, including inference and discourse integration. Unless lower-level

processes are adequately automatized, they require a large amount of working memory and hence impose constraints on cognitive resources used in global understanding (2023).

Equally, Koda states that the syntactic knowledge is a notable predictor of academic reading in EFL settings. Structural unaware students often confuse the relationships between clauses in particular, sentences with embedded structures, or complex structures (2025).

In the instruction of English reading in Iraqi preparatory schools, vocabulary explanation and exercises based upon translation are frequently favored (Razaq & Ahmed, 2024). Although they can help in a superficial understanding they rarely prepare the learner with an independent way of parsing. This has led to students facing a lot of challenge in the process of tackling new syntactic structures and this is particularly during examination (Barzinji, 2024).

2. *Syntactic Awareness and Sentence Processing*

Syntactic awareness is the capacity to reflectively and consciously manipulate the grammatical form of sentences (Tilahun et al, 2024). Empirical studies in second language acquisition have repeatedly demonstrated that syntactic awareness is closely related to the performance of reading comprehension (Guo, 2008). The Simple View of Reading by Gough and Tunmer (1986) is a conceptualization of reading comprehension as a decoding/linguistic comprehension product. In a linguistic understanding, syntactic processing acts as an organizational means of meaning (Weissbart & Martin, 2024).

In addition, Kintsch (1998) suggests that, propositional representations are first formed by the readers at the sentence level, before the reader combines them into an integrated coherent discourse model. This propositional construction can be interfered with by errors in syntactic parsing, resulting in the dissection of textual meaning (Almarshedi, (2022).

Psycholinguistically, sentence processing is a process that entails the temporary retention of syntactic relationships in working memory

(Schwering & MacDonald, 2020). According to Azamnouri et al. (2020), the phonological loop as well as the central executive is a process that works in the sentence interpretation. Cognitive load also increases with the level of syntactic complexity.

Sweller (2015b) also gives that the instructional design must be designed to minimize unnecessary cognitive processes to promote learning efficiency. Breaking down complex information into manageable bits is consistent with the human cognition architecture and makes schema acquisition easy (Kareem et al, 2019 ; Kays, 2003).

Syntactic manipulation strategies can also be involved in explicit syntactic manipulation, potentially facilitating the reduction of intrinsic cognitive load, where structural relationships are processed in a sequential, as opposed to simultaneous, manner by the learner (Azamnouri et al, 2020).

3 *Grammar Instruction and Reading Comprehension*

The dispute on the teaching of grammar has been developing significantly in the last decades. The classical rule-based methods have frequently been criticized to be limited in the way they can be transferred to communicative performance (Zarei Darabi, 2025). Nevertheless, the current research has indicated that grammar teaching when introduced into meaningful and communicative activities can aptly increase reading comprehension (Dehham & Abbas, 2025 ; Johnston, 2025).

The teaching of forms is best employed within communicative situations and not taught in isolation of grammar rules. It is therefore important that teachers attract the attention of learners to the linguistic forms in the authentic input (Nassaji & Fotos, 2022). Likewise, grammar teaching must promote the observation and the building up of recognition of structural patterns in texts (Moore, 2021).

Sentence combining, clause segmentation, and syntactic restructuring are instructional methods that have been reported to have a positive effect on literacy development in many situations (Al Zahran, 2021). However, most of the

empirical research studies have targeted ESL, or Western learning contexts. There is limited study looking into structured syntactic intervention in Iraqi preparatory schools (Hadi,2025).

4 Constructivist and Sociocultural Perspectives

Constructivist learning theory assumes that learning is a constructive process that involves interaction and contemplation. The concept of the Zone of Proximal Development (ZPD) proposed by Vygotsky states that scaffold support is essential in the process of learning (Alghamdy, 2024).

According to Abdelhak (2025), the Syntax Surgery Strategy involves scaffolding where the students are taken through steps of analyzing sentences:

- Determination of sentence limits.
- Recognition of clauses
- Grammatical relationships analysis.
- Sentence rebuilding.

By engaging in the process of reconstruction together with others, the learners externalize their structural reasoning and internalize syntactic patterns gradually. The procedure does not only reinforce grammatical competence but also increases the metacognition of textual structure (Abdelhak ,2025).

III. METHODOLOGY

1. Research Design

In the current study, quasi-experimental research design was used in order to examine how the Syntax Surgery Strategy would impact reading comprehension skills of Iraqi EFL school students in preparatory school. The design consisted of two groups i.e. an experimental and a control group on the pretest- posttest pattern (Tavakoly et al., 2018).

A pretest was conducted on both groups to ensure that there was baseline equivalence. The independent variable was then the Syntax Surgery Strategy and the control group was taught using traditional teaching methods. At the end of the intervention period, both intervention groups were given a posttest to assess the changes in the dependent variable, which is reading comprehension, and whether the differences

observed between the two intervention groups were statistically significant.

Quasi experimental is vastly used in learning research especially where random assignments cannot be achieved in the natural classroom. These types of designs enable the researcher to test causal relationships and still attain ecological validity.

The experimental design of the study is presented in Table 1 below:

Table 1

Experimental Design of the Study

Group	Independent Variable	Dependent Variable
Experimental	Syntax Surgery Strategy	Reading Comprehension
Control	Traditional Instruction	Reading Comprehension

2. Population

The population of the study during the 2025-2026 academic year was the fourth grade preparatory students in the girls' schools in Babylon Governorate.

3. Sample

A total of 98 students were picked in Al-Taliyaa Preparatory School of Girls in Babylon Governorate. This population was used to select the participants who were then grouped into two intact classes. The experimental group involved 1 class (Section A) with 48 students and the control group had 1 class (Section B) with 50 students.

The experimental group was taught by the Syntax Surgery Strategy, the control group was taught with the help of the traditional instructions of reading that are usually used in the Iraqi EFL classes. The teaching intervention took place in eight weeks, in the second semester, in the 20252026 academic year. Both groups were taught by the same teacher to bring out similarity in the teaching conditions.

Both groups received a pretest before the treatment to determine the similarity of their level

of reading comprehension. Pretest scores underwent statistical analysis, to ascertain the absence of statistically significant differences between the two groups prior to intervention.

The distribution of the study sample is presented in Table 2 below:

Table 2

Distribution of the Study Sample

Group	Section	Number of Students
Experimental	A	48
Control	B	50
Total	—	98

4. Equivalence of the Groups

The researcher made sure that the experiment and control groups were equivalent before the implementation of the experiment. A number of variables that might have affected the results of the study were also controlled such as the age of students, previous academic performance (first-course results), and the educational level of parents. The differences between the two groups were found to not be significant before the intervention and hence the comparability of the groups.

5. Test Application

The procedure of application of the test consisted of three major steps that included the pre-test, the instructional treatment, and the post-test.

a. Pre-test

Reading comprehension pre-test was conducted before the instructional intervention on both groups (experimental and control) to determine their initial reading skills. In this test, a reading passage was provided with multiple choice, true/false, and short answer questions which were aimed at assessing various degrees of understanding. The test items were based on the English textbook taught in the Iraqi preparatory schools and derived to the official English curriculum of the ministry of education. The main aim of the pre-test was to determine the baseline

level of reading comprehension performance of the students before the intervention.

b. Instructional Treatment

After the pre-test, experimental group was accorded a structured instructional intervention that was based on the Syntax Surgery Strategy whereas the control group was accorded with a continuation of conventional reading instruction. The program was eight weeks in duration and two sessions were offered per week each of which took about 40 minutes.

The Syntax Surgery Strategy involved students to deconstruct, examine and reassemble complicated sentences in a reading passage to gain more insight in the nature of syntactic interconnections and meaning formation. There was a systematic order of stages followed in each instructional session:

- 1. Sentence Identification:** A sentence that is both complex and problematic and difficult to students is identified in the process of reading.
- 2. Sentence Presentation and Segmentation:** The sentence is introduced and marked out to reflect its syntactic structure, that is, it is broken down into smaller grammatical units (phrases or clauses).
- 3. Restructuring of Sentence Parts:** The students restructure the divided parts to form a grammatically correct sentence.
- 4. Instruction of Structural Differences:** The teacher describes the distinction between the original structure and the appropriate pattern of the English sentence.
- 5. Practice with Similar Patterns:** Students are given other sentences with similar grammar structure to make their understanding stronger.

In the instructional sessions, the teacher scaffolded and offered direction to the students on identifying the syntactic patterns and comprehending grammatical connections. Students were also grouped and discussed sentence structures and provided some

interpretations in small groups. This interactive method contributed to active reading of the text and increased the knowledge of syntactic structure and meaning among students.

c. Post-test

All the participants were given a post-test at the end of the eight weeks intervention period. To make the pre-test comparable with the post-test, the pre-test and post-test had the same format and level of difficulty. Statistical analysis was conducted to find out whether the Syntax Surgery Strategy was significant in terms of its effect on the performance of students in reading comprehension with the traditional instruction.

The analysis of the scores in pre-test and post-test gave empirical data about the effectiveness of the instructional strategy that was conducted in this study.

IV. RESULTS

To test the research hypothesis, the pre- and post-test data were statistically analyzed. The purpose of this analysis was to compare the reading comprehension performance of the experimental and control groups before and after the intervention.

1. Comparison of Post-Test Scores: Experimental vs. Control Group

These outcomes show a strong benefit to the experimental group, and that the Syntax Surgery Strategy was useful in improving sentence-level parsing and general reading comprehension amongst Iraqi EFL preparatory learners.

2. Comparison of Pre- and Post-Test Scores of the Control Group

The pre- and post-test scores of the control group were compared with a paired-samples t-test to test whether the traditional instructional

After the instructional intervention, the experimental group, which was exposed to the Syntax Surgery Strategy, attained a mean post-test score of 39.03, a score that was lower than in control group which had a mean of 23.45. Such findings show that the experimental group did better as compared to the control group.

The t-test was performed using independent samples in order to be able to get the information whether the difference observed between the two groups was statistically significant. Calculation of the post-test t-value was done and the value obtained was 5.622, with 64 degrees of freedom. This is greater than the tabulated t-value (0.05 level) which shows that there is statistical significance at the (0.05) level of difference between the two groups.

Hence the null hypothesis which assumed that no significant difference between the score of reading comprehension of the students taught by the Syntax Surgery Strategy and those taught by the traditional instruction would occur was rejected. The comparison proves that the syntactic information taught in an instructional manner had a notable beneficial impact on the reading comprehension performance of the experimental group. Results are presented in the following table:

Table 3

T-test Statistics of Students' Post-Test Scores

Group	N	Mean	SD	DF	t-value	Significance Level
Experimental	48	39.03	14.75	64	5.622	0.05
Control	50	23.45	9.10	—	—	—

method resulted in any significant change in reading comprehension.

The control group was found to have a pre-test mean of 22.14 and an post-test mean of 23.45 which showed that the performance level changed slightly. The t-value calculated was 21.812 with a degrees of freedom of 62. Nevertheless, even though this was a slight gain, it was insignificant that it could show that the traditional method of instruction had a strong impact on reading comprehension (see Table 4).

The implication of this is that the traditional reading training yielded small improvements in the reading comprehension skills of the students in the

experimental group as compared to the Syntax Surgery Strategy applied in the traditional reading training.

Table 4

T-test Statistics of Pre- and Post-Test Scores for the Control Group

Test	N	Mean	SD	DF	t-value	Significance Level
Pre-test	50	22.14	9.06	62	21.812	0.05
Post-test	50	23.45	9.10	—	—	—

Those data reveal that the syntactic processing and increased comprehension in the control group were only slightly improved, which highlights the low effectiveness of traditional reading instruction to enhance reading comprehension.

3. Comparison of Pre- and Post-Test Scores of the Experimental Group

A paired-samples t-test was used to test the difference in pre- and post-test scores of the experimental group to assess the impact of the Syntax Surgery Strategy.

The experimental group scored 22.11 in the pre-test and 39.03 in the post-test with a significant effect of the intervention on reading comprehension. The t-value obtained was 15.234, with 64 degrees of freedom and this value is higher than the t-value at the level of 0.05. It means that such a difference between pretest and posttest scores was significant (see Table 5).

These findings show that the experimental group had a significant improvement in reading comprehension, which proves the use of the Syntax Surgery Strategy as better than the traditional teaching.

Table 5

T-test Statistics of Pre- and Post-Test Scores for the Experimental Group

Test	N	Mean	SD	DF	t-value	Significance Level
Pre-test	48	22.11	12.95	64	15.234	0.05
Post-test	48	39.03	14.75	—	—	—

The fact that the scores of the experimental group improved greatly shows that explicit teaching of syntactic structure, through the Syntax Surgery Strategy, is a critical factor in acquiring sentence-level parsing and general reading comprehension by the students.

5. Discussion of Results

The results of the present study are very strong empirical evidence of the usefulness of the structured syntactic manipulation in improving reading comprehension among the Iraqi EFL preparatory students. The internal validity of the research design is ensured by the fact that there are no significant differences in pre-test scores, and that the difference in post-test scores can be attributed to the instructional intervention.

The results of the post-tests showed that students who were exposed to the Syntax Surgery Strategy performed significantly better than their traditional instructed counterparts. Such results are consistent with the Construction-Integration Model of Walter Kintsch, which stresses the importance of sentence-level parsing in the construction of coherent meaning (1998). The explicit segmentation and reconstructions of sentences allowed students to build stronger propositional representations and then incorporate information at the discourse level.

The cognitive theoretical background also supports the findings in the Cognitive Load Theory by John Sweller (2011a) Breaking up complex sentences probably decreased inherent cognitive load, enabling students to devote

working memory resources to more productive activities when reading (Sweller, 2011).

Also, the results confirm the perspective of Rod Ellis regarding the instruction of form, which states that grammar teaching within significant contexts may improve the results of the comprehension process (Ellis, 2001). The large effect size of the experimental group is indicative of the fact that syntactic awareness is a mediating variable between instructional strategy and reading performance (Teng & Cui, 2025).

In general, the research proves that the Syntax Surgery Strategy does not only enhance sentence-level processing but also enhances higher-order processing, which is why it is a good strategy to be used in EFL classrooms disadvantaged by the lack of resources.

V. CONCLUSION

This research paper explored the outcome of the Syntax Surgery Strategy on reading comprehension performance of Iraqi EFL preparatory students through experimental design with 98 participants. The findings show that syntactic segmentation and restructuring are important in the reading comprehension aspects in relation to the conventional instructions.

These results indicate the significance of considering sentence level parsing in EFL reading pedagogy, especially in situations where students lack direct exposure to the real input of the English language. The paper is an addition to the accumulating body of evidence in favor of strategy-based reading instruction, as well as an amenable instructional framework that can be applied in classrooms at the secondary level in EFL settings.

According to the empirical findings, as well as the observations made by the researcher when conducting the intervention, the following conclusions may be made:

1. **Enhanced Reading Ability:** The Syntax Surgery Strategy produces a large positive

effect on the growth of general reading comprehension skills in particular fourth-grade preparatory students. It is psychologically stimulating and creates an active and inspiring learning atmosphere to minimize disengagement and distractions.

2. **Promotion of Social and Collaborative Skills:** The plan offers students a chance to engage in socialization and team learning. The method promotes independence and decreases dependence on teacher guidance because it provides the learners with a chance to think through sentence analysis and rebuilding sentences collaboratively.
3. **Suitability for Diverse Learners:** The Strategy of Syntax Surgery proves to be efficient even with the lower level of language proficiency of students, which proves that the structured syntactic intervention can be tailored to the requirements of every learners in EFL classrooms.

To sum up, Syntax Surgery Strategy is a powerful, interactive and flexible teaching method that enhances sentence level processing, reading comprehension and learner independence in preparatory EFL settings.

Funding

No funding is indicated by the authors.

Acknowledgments

We thank the staff of the preparatory “schools for girls in Babil city to conduct the study, and the respondents, whose involvement is very much appreciated in delivering the outcomes and impact of this study.

Conflict of interest

The authors declare no conflict of interest.

REFERENCES

- Abdelhak, C. (2025). *The Role of Syntactic Awareness in Reading Comprehension. The Biskra-at Mohamed Khider University Year Students* (Doctoral dissertation, University of Biskra).
- Al Sabah, S. (2024). *Translation-based practices in Iraqi EFL classrooms*. *International Journal of Applied Linguistics*, 12(3), 101–115.
- Al Zahran, A. (2021). Structural challenges in English> Arabic simultaneous interpreting. *Translation & Interpreting: The International Journal of Translation and Interpreting Research*, 13(1), 51-70. <https://search.informit.org/doi/abs/10.3316/informit.784094081677105>.
- Al Zubaidi, R. (2021). *Challenges in reading complex texts among Iraqi preparatory students*. *Baghdad Studies in Applied Linguistics*, 14(2), 22–36. <https://creativecommons.org/licenses/by/4.0>
- Alghamdy, R. Z. (2024). English Teachers' Practice of Classroom Discourse in Light of Zone of Proximal Development Theory and Scaffolding Techniques. *Journal of Language Teaching & Research*, 15(1). <https://doi.org/10.1016/j.sbspro.2011.11.396>
- Almarshedi, R. M. (2022). Linguistic Awareness or Grammatical Competence: What Dominates the Saudi Undergraduate EFL Classroom?. *Theory and Practice in Language Studies*, 12(10), 1979-1988. https://scholar.google.com/scholar?hl=ar&as_sdt=0%2
- Alshehri, A. (2021). *The role of reading in an integrated reading-to-write task: A think-aloud study of EFL undergraduate English language students in a Saudi context* (Doctoral dissertation, University of York).
- Azamnouri, N., Pishghadam, R., & Naji Meidani, E. (2020). The role of emotioncy in cognitive load and sentence comprehension of language learners. *Issues in Language Teaching*, 9(1), 29-55.
- Barzinji, P. A. (2024). Implications and insights: A comprehensive review of English language teaching research in Iraqi Kurdistan. *Studies in Literature and Language*, 28(1), 22-30. https://www.researchgate.net/profile/Paywand-Adham/publication/379431850_
- Dehham, S. H., & Abbas, S. H. (2025). The Correlation between Iraqi EFL University Students' Metacognitive Awareness and Writing Performance. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5203009
- Dehham, S. H., & Abbas, S. H. (2025). The Relationship Between University EFL Students' Self-Regulation and Writing Performance. *Theory and Practice in Language Studies*, 15(7), 2163-2171.
- DOI: <https://doi.org/10.17507/tpls.1507.08>
- Ellis, R. (2001). Introduction: Investigating form-focused instruction. *Language learning*, 51, 1-46. <https://doi.org/10.1111/j.1467-1770.2001.tb00013.x>
- Gough, P. B., & Tunmer, W. E. (1986). *Decoding, reading, and reading disability*. Remedial and Special Education, 7(1), 6–10. https://www.nomanis.com.au/hubfs/Nomanis_June2023/Pdf/Decoding%2C%20
- Guo, Y. (2008). *The role of vocabulary knowledge, syntactic awareness and metacognitive awareness in reading comprehension of adult English language learners*. The Florida State University.
- Hadi, H. (2025). Investigating the Techniques Used in Teaching 'Grammatical Areas and Functions' of the Sixth Preparatory Textbook of English for Iraq. *International Journal on Culture, History, and Religion*, 7(S12), 946-967. <https://ijchr.net/journal/article/view/435>
<https://systems.uomisan.edu.iq/cv/uploads/files/qynfm62xozij193.pdf>
- Johnston, T. B. (2025). Foundational Reading Comprehension Interventions for Students in Grades K-3: A Systematic Review of Recent Research.
- Kareem, H. H., Dehham, S. H., & Al-Wahid, M. A. (2019). The impact of teaching the creative writing by FOCUS strategy to develop. *Indian Journal of Public Health*, 10(6). <https://scholar.google.com/scholar?>
- Kays, E. J. (2003). *Architecture and instructional design: A conceptual model for e-learning*. Capella University.
- Khalaf, J. R. (2025). The Impact of Syntax Surgery Technique on EFL Intermediate School Students' Writing Skill. *JOURNAL OF LANGUAGE STUDIES*, 9(4, Part 2), 189-212. <https://doi.org/10.25130/Lang.9.4.P2.10>
- Khaleel, M. (2022). *Syntax Surgery Strategy: Integrating grammar analysis in reading instruction*. *Arab EFL Journal*, 9(2), 88–102. : <https://doi.org/10.55384/2790-4237.1065>
- Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. Cambridge University Press.
- Koda, K. (2005). *Insights into second language reading: A cross-linguistic approach*. Cambridge University Press.
- Kusumarasdyati, K. (2023, March). Reading comprehension in EFL: an overview. In *International Joint Conference on Arts and Humanities 2022 (IJCAH 2022)* (pp. 782-791). Atlantis Press. <https://www.atlantispress.com/proceedings/ijcah-22/125985213>
- Liu, Y., & Hu, G. (2024). Research trends in applied linguistics (2017–2021): A scientometric review of 42 journals. *A scientometrics research perspective in applied linguistics*, 45-81. https://link.springer.com/chapter/10.1007/978-3-031-51726-6_3
- MacKay, E., Lynch, E., Sorenson Duncan, T., & Deacon, S. H. (2021). Informing the science of reading: Students' awareness of sentence-level information is important for reading comprehension. *Reading Research Quarterly*, 56, S221-S230. <https://doi.org/10.1002/rrq.397>

- Matchin, W. (2020). *Syntactic awareness and language comprehension*. *Linguistic Inquiry*, 51(4), 787–805.
- Moore, M. (2021). Grammatical concepts and metalinguistic awareness in first-year college writers: A study of reading journals. *Journal of College Reading and Learning*, 51(3), 178-202. <https://doi.org/10.1080/10790195.2020.1867670>
- Nassaji, H., & Fotos, S. S. (2022). *Teaching grammar in second language classrooms: Integrating form-focused instruction in communicative context*. Routledge.
- Rahoomi, R. K., Dehham, S. H., & Al-Wahid, M. A. (2019). The Impact of Reading Strategy Knowledge and Science Knowledge on Developing Reading Skills of School Students. *Indian Journal of Public Health Research & Development*, 10(10). DOI:10.5958/0976-5506.2019.03339.4
- Razaq, A., & Ahmed, K. (2024). On the Effect of Content-Based Instruction over Iraqi Intermediate EFL High School Learners' Reading Comprehension and Vocabulary Learning. *Journal Vo*, 2(1).
- Schwering, S. C., & MacDonald, M. C. (2020). Verbal working memory as emergent from language comprehension and production. *Frontiers in human neuroscience*, 14, 488865. <https://doi.org/10.3389/fnhum.2020.00068>
- Siregar, T. (2025). Balancing Higher-and Lower-Order Thinking Skills: An Analysis of Lecturers' Pedagogical Practices in Higher Education. *Available at SSRN 5590290*.
- Sweller, J. (2011). *Cognitive load theory and instructional design*. Springer. <https://doi.org/10.1007/978-1-4419-8126-4>
- Sweller, J. (2015). In academe, what is learned, and how is it learned? *Current Directions in Psychological Science*, 24(3), 190–194. <https://doi.org/10.1177/0963721415569570>
- Tavakoly, M., Kiany, G., & Hashemi, M. R. (2018). On the Impact of Two Input-Oriented Techniques and Perceptual Learning Styles on Causative Construction Development: The Case of Iranian Learners of English. *Journal of Language and Translation*, 8(3), 43-56. <https://oiccpublish.com/tlt/article/view/15658>
- Teng, M. F., & Cui, Y. (2025). The contribution of vocabulary knowledge and morphological awareness to reading comprehension in a foreign language. *Journal of Research in Reading*, 48(2), 131-152.
- Tilahun, S., Simegn, B., & Emiru, Z. (2022). Using grammar consciousness-raising tasks to enhance students' narrative tenses competence. *Cogent Education*, 9(1), 2107471. <https://doi.org/10.1080/2331186X.2022.2107471>
- Vettori, G., Mercugliano, A., Bigozzi, L., & Incognito, O. (2025). The relationships between oral narrative, reading, and writing skills in a longitudinal sample of Italian-speaking children: the moderating role of cognitive-lexical skills. *European Journal of Psychology of Education*, 40(1), 32. <https://link.springer.com/article/10.1007/s10212-024-00929-z>
- Weissbart, H., & Martin, A. E. (2024). The structure and statistics of language jointly shape cross-frequency neural dynamics during spoken language comprehension. *Nature Communications*, 15(1), 8850.2. <https://doi.org/10.1038/s41467-024-53128-1>
- Zarei Darabi, N. (2025). The effect of meaning-focused instruction on developing reading comprehension and vocabulary knowledge of EFL learners in the light of self and peer assessment.

Hala Safa Mirjan is the M A student at the College of Basic Education, Babylon University, Iraq. She is interested in methods of teaching English. Her principal research area lies in teaching and learning English Language.



Sabeeha Hamza Dehham is an Iraqi Professor at the College of Basic Education, Babylon University, Iraq. She got a doctorate in TESOL at the University of Baghdad, Iraq. Her research interests encompass English Language Teaching. ORCID ID: 0000-0002-8308-4996.