The Grammar Puzzle: Does Grammar Help Reading Comprehension?

Mehrdad Yousefpoori-Naeim

The role of grammar in reading comprehension remains unresolved despite the relatively large number of studies in this line of research. Drawing on the (dis)advantages of applying grammatical knowledge to the reading process, the present study discusses some of the reasons for differing results reported by previous studies. It is argued that grammatical knowledge can affect comprehension differently under different conditions. Specifically, grammar can be helpful in understanding complex sentences, while being even counterproductive when applied to texts with simpler structures. It is, therefore, important to take into consideration the interaction between grammatical knowledge and the text when examining the role of grammar in reading comprehension. An operational framework of grammatical knowledge with regard to reading comprehension is put forward to illuminate its role in reading comprehension and provide guidelines for teaching practice. The operational framework makes a primary distinction between grammatical knowledge and grammar instruction and further places them on the implicit/explicit continuum. It is concluded that knowing how and when to resort to grammar is as important for students as being competent in grammar. This conclusion highlights the significance of adopting a strategy-based approach to grammar instruction. Teachers should teach both cognitive and metacognitive strategies when teaching grammar for reading.

Le rôle de la grammaire dans la compréhension de la lecture reste non résolu malgré le nombre relativement important d'études dans ce domaine de recherche. En s'appuyant sur les (dés)avantages de l'application des connaissances grammaticales au processus de lecture, la présente étude explore certains éléments qui expliquent les résultats divergents rapportés par les études précédentes. Elle soutient que les connaissances grammaticales peuvent affecter la compréhension différemment selon les conditions. Plus précisément, la grammaire peut être utile pour comprendre des phrases complexes, tout en étant contre-productive lorsqu'elle est appliquée à des textes ayant des structures plus simples. Il est donc important de prendre en considération l'interaction entre les connaissances grammaticales et le texte lorsque l'on examine le rôle de la grammaire dans la compréhension de la lecture. Un cadre opérationnel de la connaissance grammaticale en matière de compréhension de la lecture est proposé pour éclairer son rôle dans la compréhension de la lecture et fournir des lignes directrices pour l'enseignement. Le cadre opérationnel établit une distinction primaire entre la connaissance grammaticale et l'enseignement de la grammaire et les place sur le continuum implicite/explicite. L'article conclut en avançant que savoir comment et quand recourir à la grammaire est aussi important pour les apprenants que d'être compétent en grammaire. Cette conclusion souligne l'importance d'adopter une approche

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basée sur les stratégies pour l'enseignement de la grammaire. Les enseignants devraient enseigner des stratégies cognitives et métacognitives lorsqu'ils enseignent la grammaire pour la lecture.

Keywords: grammar instruction, grammatical knowledge, reading comprehension, strategy-based instruction

Despite the wealth of research, the significance of grammar in reading comprehension remains a subject of ongoing inquiry (Choi & Zhang, 2021; Raeisi-Vanani & Baleghizadeh, 2022). Most studies in this line of research have used correlation-based techniques to investigate the relationship between grammar and reading (Akbari, 2014), often resulting in contradictory results (Zheng et al., 2023). Although methodological differences and contextual factors (such as different cultural, social, and linguistic backgrounds, socio-economic status, school policies, and classroom size) are partially responsible for discrepancies in findings, this article aims to show how the sophisticated nature of the relationship between grammar and reading could play a role as well. This work is also partly motivated by one of my projects on predicting reading comprehension performance using natural language processing (NLP) techniques and neural networks (Yousefpoori-Naeim et al., 2025). In this project, grammatical knowledge showed relatively different behaviour in predicting students' answer correctness across grades and passages with varying levels of grammatical complexity. Awareness of the delicacies of the interplay between grammar and reading comprehension can also have implications for practice, as it can inform teachers' approach to grammar instruction for reading as well as autonomous students' use of strategies to gain more from their grammatical knowledge when reading.

Before proceeding to the discussion of the role of grammar in reading comprehension, I should specify how grammar and reading comprehension are viewed in this article, as these two terms can refer to different concepts in various contexts. While grammar might be commonly seen as a set of either prescriptive rules or descriptive patterns for sentence structure, in this article I adopt Larsen-Freeman's more comprehensive view of grammar, encompassing form, meaning, and use (Larsen-Freeman & DeCarrico, 2019). Grammar not only is about knowing the rules governing the linguistic form but also includes knowing when and how to use different linguistic forms to achieve specific communication goals (Dong, 2024). As for reading comprehension, I take a broad approach here too, with reading comprehension being seen as a dynamic interplay of various reader characteristics and text features taking place within a context for specific purposes (Yousefpoori-Naeim et al., 2023). While many of the examples provided in the study are concerned with reading comprehension tests, the intended concept of reading comprehension goes beyond that and includes any reading activity for extraction of meaning from text.

In what follows, I first discuss some of the main pros and cons of using grammatical knowledge in reading comprehension to provide a rationale for an operational framework of grammatical knowledge in reading comprehension. Next, I provide an example of the compensatory role of grammar in reading comprehension to illustrate the use of the proposed framework. The example also serves as a bridge between the framework and the discussion of strategy-based instruction, which I argue should be used when teaching grammar for reading comprehension.

Pros and Cons of Using Grammatical Knowledge in Reading Comprehension

Complex Structures

Complex sentence structures can often be perplexing, but a solid grasp of grammar can greatly aid in making sense of them once the reader successfully parses the sentence. Grammar can serve as a key tool in this process because one of the most effective strategies for understanding complexity—whether in language or other domains—is breaking down complex material into its individual components. Similarly, grammatical knowledge assists readers in deconstructing intricate linguistic forms, allowing them to recognize patterns, relationships, and the underlying meaning(s) within the text. In essence, just as breaking a problem into smaller parts makes it more manageable, knowledge of grammar equips readers with the means to decode challenging sentence structures with greater ease (Christiansen & Chater, 2016).

On the other hand, parsing sentences—especially those with complex structures—can take significant time and cognitive effort. In the context of timed reading assessments (i.e., in most reading tests nowadays), this can become a considerable challenge. When a sentence is grammatically intricate or the reader lacks sufficient grammatical knowledge, the cognitive load required to process and understand the text intensifies. This heightened cognitive demand can hamper comprehension and lead to diminished performance, as the reader may spend more time decoding the structure rather than focusing on meaning. Consequently, both the complexity of the language and the time constraints in such tests may negatively impact the accuracy and efficiency of a reader's understanding (van Gompel, 2013).

Nuances in Meaning for More Accurate Understanding

Grammar goes beyond form and structure, encompassing meaning and use too (Liamkina & Ryshina-Pankova, 2012), as also reflected in Larsen-Freeman's (2003) *grammaring*. Not only can grammar be utilized to analyze complex structures but it can also provide insights into meaning. Grammar can especially help with recognizing nuances in meaning and add depth to our understanding of it. Semantic nuances are often used to write challenging reading comprehension test items, and students who possess an explicit knowledge of grammar can be more sensitive to such nuances in meaning. For example, a knowledge of restrictive versus non-restrictive clauses can help the reader make immediate inferences about the implied meaning in the following sentences, which would likely remain hidden from the reader without this knowledge:

(1) The chairs, which were purchased last month, cost the department around $1,800.
[All the chairs were purchased last month and cost $1,800. There are no other chairs.]

(2) The chairs that were purchased last month cost the department around $1,800.
[Only those chairs that were purchased last month cost $1,800. There are other chairs too.]

On the other hand, these nuances in meaning are not always noteworthy or relevant, in which case they will serve as extra information that can either hinder comprehension or even mislead the reader. Sometimes even the text writer or test developer might not have noted such nuances when writing the text or the item (e.g., by overlooking the appropriate use of punctuation marks). Such situations often lead to students reading too much into the text and overinterpreting the meaning, which is as much a danger as underinterpretation is (O'Halloran & Coffin, 2014).

Connections between Constituents

Cohesion can facilitate reading comprehension (Schmitz et al., 2017), and this is where grammatical knowledge can be useful. The analytical capabilities of grammatically competent readers can be an asset in parsing sentences, as well as larger units of language, into their constituents and discovering the connections among them. In doing so, readers need to recognize and handle cohesive devices, such as transition or linking words and phrases (Yousefpoori-Naeim et al., 2018) and anaphoric pronouns (Crossley et al., 2017), which are tools to build cohesion.

The general distinction between cohesion and coherence is worth noting here. Cohesion refers to the connectedness of sentences and other grammatical constituents through explicit mechanisms, while coherence is the interconnectedness of ideas and concepts on a more abstract and implied level (Witte & Faigley, 2003). A reader with a high level of grammatical knowledge who relies heavily on explicit connections, such as transition words, may have a hard time discerning coherence in the absence of cohesive devices. Such readers tend to deploy more bottom-up processing when reading, while some level of top-down processing is also required to ascertain the integrity of text beyond explicit clues within the text (Griffin, 2004). Research has shown that cohesive devices may be more of a hindrance to the comprehension of readers with high prior knowledge (i.e., those using more top-down processing), known as *reverse cohesion effect* (Schmitz et al., 2017). Given all these intricacies of the interplay between grammar and cohesion, it should not be very surprising to see grammatical knowledge having differing effects on reading comprehension in different contexts.

Guessing Meaning from Context

Inferencing the meaning of unknown words from context is a valuable skill in reading comprehension (Laufer, 2020), and grammatical knowledge plays a significant role in this skill (Paribakht, 2004). That is also why Sasao and Webb (2018) include a grammar section in their Guessing from Context Test (GCT). One of the main contributions of grammatical knowledge to the sophisticated task of guessing the meaning of unknown words lies in the ability to discern the part of speech. Students can get closer to the meaning of an unknown word by knowing what kind of word, or part of speech, it is and how it fits in its sentence. Knowing the part of speech of the unknown word limits the scope of the search for meaning and thus makes the whole task more manageable. Failure to recognize the correct part of speech is among the main reasons students cannot guess the meaning of an unknown word correctly (Sasao & Webb, 2018).

Utilizing grammatical knowledge in guessing the meaning of unknown words has its risks as well. Overreliance on grammatical knowledge and the search for the part of speech can be time-consuming and deleterious because it is finding the meaning, not the part of speech, that is the ultimate goal. Grammar is a helpful tool in the process of discovering the meaning but is not a requirement for it. Moreover, if a student makes a wrong guess about the part of speech of the unknown word, then they might have a hard time arriving at the correct meaning. In contrast, a student who makes no guesses about the part of speech would not start from a false assumption and thus faces less difficulty reaching the correct meaning.

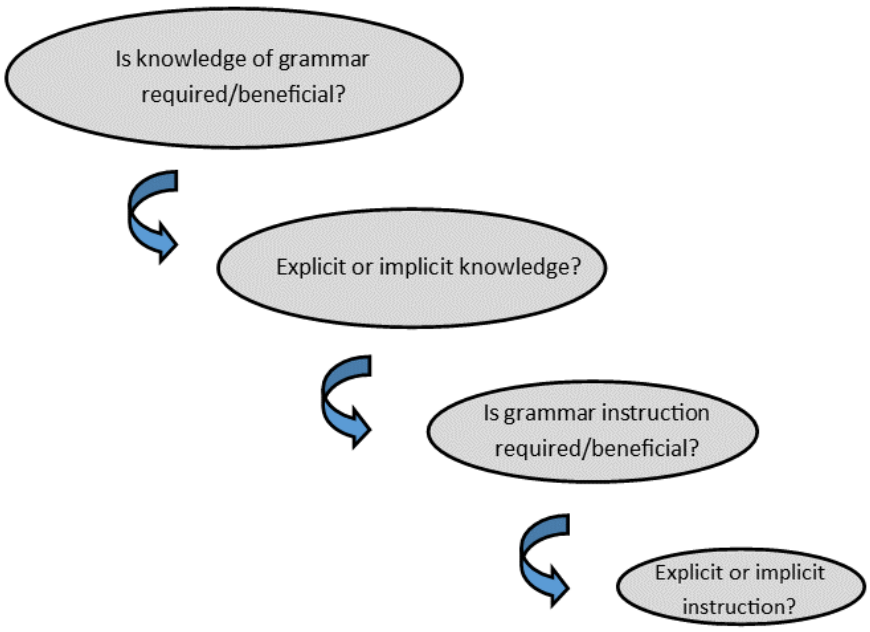
An Operational Framework of Grammatical Knowledge in Reading Comprehension

As can be inferred from the above discussion of pros and cons, grammatical knowledge can serve as a double-edged sword in reading comprehension. This partially explains the contrasting results of some studies and also necessitates a strategy-based approach to the instruction of grammar for reading comprehension, which I will discuss after proposing an operational framework of grammatical knowledge for reading comprehension.

Borrowing mainly from the prominent discussion of implicit/explicit knowledge/instruction, the following operational framework is proposed to guide the practice of teaching reading comprehension with regard to grammar and to build the rationale for a strategy-based approach to teaching and learning grammar for reading comprehension. When teaching reading comprehension tasks or individual test items, teachers should consider at least three components of their instruction: the task (including the reading text and the questions), the learner, and the context. Based on an assessment of these components, teachers can then work their way through the four stages, or questions, of the framework (Figure 1). As reflected in the size of the ovals, these questions form a hierarchy in descending order of importance from the first stage to the fourth. Teachers should first determine if some grammatical knowledge is required, or at least beneficial, to understand the text or answer the question. If that is the case, they then need to decide whether students would benefit from any grammar instruction. While some level of grammar instruction seems appropriate when grammatical knowledge is required for the comprehension task, there will probably be cases where it is wiser to abstain from teaching grammar. For instance, students might not be developmentally ready for that specific grammar point, in which case introducing it will only add to the cognitive burden of the task. Once the teacher has resolved to teach grammar, the next step is to decide how explicit or implicit the instruction should be.

Figure 1

An Operational Framework of Grammatical Knowledge in Reading Comprehension



The distinctions between implicit and explicit knowledge and instruction are important because each of these can affect the role of grammar in reading comprehension differently; furthermore, they are not necessarily transformable to one other. Students are said to be using their implicit knowledge when they are not aware of the knowledge itself, while explicit knowledge is accompanied with awareness and can

be usually verbalized. In a similar vein, instruction is considered implicit when students are not aware of what exactly is being taught, while teachers talk openly about what is to be learned in explicit instruction (Baleghizadeh & Yousefpoori-Naeim, 2013; Ellis, 2009). Although implicit instruction is expected to lead to implicit knowledge, and, likewise, explicit instruction is expected to result in explicit knowledge, this is not always the case. For instance, a student who has been taught grammar only implicitly through examples can develop explicit knowledge of grammar by forming explicit rules out of the examples (the inductive approach), as argued in the implicit–explicit interface from the single-system view in cognitive science (Kim & Godfroid, 2023). Similarly, a student who has initially received explicit grammar instruction may gradually internalize the grammar structure and use it without accessing any explicit knowledge (Khezrlou, 2021). The discussion about how much of one type of knowledge can, or cannot, be transformed into another is beyond the scope of this article. (See Pawlak, 2021, for a review of the literature and a classification of various implicit/explicit grammar activities.)

Example: Compensatory Role

An example of explicit instruction aimed at developing explicit knowledge is compensatory techniques/strategies. In many cases, an explicit knowledge of grammar can be helpful when students lack the desired language proficiency to comprehend the text and therefore need to take advantage of some techniques to compensate for their lack of proficiency (see Priven, 2022, for a study examining an intervention focused on the explicit instruction of complex noun phrases to support reading comprehension.). For example, in the case of guessing meaning from context as discussed before, deducing the part of speech of the unknown word can be very helpful. Similarly, when answering fill-in-the-blank questions, students can benefit greatly from knowing the part of speech of the missing word(s). Some hard-and-fast rules of grammar can help greatly with quickly discerning the part of speech. For instance, the teacher might tell students to look for a noun after an article. Therefore, in the test item below, it would be very easy for a student to deduce that the missing word must be a noun because the definite article "the" is placed right before the blank.

> (3) The …… of London increased rapidly between 1800 and 1850. [correct answer: *population*] (IELTS 17 Academic, 2022)

In the above example, as well as other similar cases, knowledge of grammar can help even further. In addition to discovering what part of speech the missing word is, students can guess the part of speech of the unknown words in the text as potential answers. For instance, in example (3) above, a grammatically competent student who does not know the word *population* should still be able to infer it is a noun by noticing its noun-forming suffix *-tion*.

Similar rules or tips that a teacher may want to explicitly teach students to help them develop their explicit knowledge include expecting the missing word(s) to be a gerund if a verb form is to be used after a preposition (4), searching for a plural noun after quantifiers (5), or looking for a noun after an adjective (6):

> (4) A lot of …… while working [correct answer: *bending*] (IELTS 16 Academic, 2021)

> (5) A number of …… agreed with Pearson's idea. [correct answer: *businessmen*] (IELTS 17 Academic, 2022)

> (6) They [i.e., the bats] play an important role in local …… . [correct answer: *culture*] (IELTS 17 Academic, 2022)

Such rules, of course, need to be used with caution because their scope of applicability might be limited. For instance, in example (6) above, there can be cases when an adjective is used predicatively (rather than attributively), in which case there is no need to have a following noun. Compare:

(7) He is a professional athlete. (*professional* used as an attributive adjective)

(8) He is professional. (*professional* used as a predicative adjective)

Once again, it can be concluded that grammar has a complicated role in reading comprehension and that the teacher's job in this case is a delicate one, with constant decision-making on when and how to teach grammar. All these considerations further give rise to the significance of adopting a strategy-based approach to grammar instruction for reading comprehension.

Strategy-Based Instruction of Grammar for Reading

Instruction of reading comprehension strategies has been reported to have numerous benefits (McKeown et al., 2009; Serrano-Mendizábal et al., 2023). Strategies refer to deliberate actions taken by students and are often contrasted with skills, which are automatic (L. Zhang, 2010). They can be broadly defined as "deliberate, goal[-]directed attempts to control and modify the reader's efforts to decode text, understand words and construct meaning out of text" (Afflerbach et al., 2008, p. 15), and strategy-based instruction "focuses on the training of strategic learning by incorporating the training of strategies into the regular language curriculum" (Nguyen & Gu, 2013, p. 12). The instruction of strategies is recommended to be explicit and guided (Serrano-Mendizábal et al., 2023; Yapp et al., 2023). That is because students are expected to form a declarative (i.e., knowing what strategies are) and conditional (i.e., knowing under what conditions other types of knowledge should be used) knowledge of strategies in addition to having a procedural knowledge (i.e., knowing how to use strategies) of them (Afflerbach et al., 2020).

When teaching grammar for reading comprehension, a strategy-based instruction approach should be adopted as well. Students should be taught not only cognitive strategies but also metacognitive ones to become autonomous learners/readers (see D. Zhang & Zhang, 2019, for a discussion of how metacognition leads to self-regulated learning and learner autonomy). That is, students need to know both cognitive strategies about using grammar to aid their reading comprehension and metacognitive strategies about when to use grammar. They should learn how to control and regulate their resorting to grammar, how to monitor its process, and how to evaluate its success. It is only then that students can use their grammatical knowledge to their advantage without falling victim to its potential threats to comprehension. This depicts the end goal of grammar instruction for reading comprehension, but it does not necessarily mean that this is what should be expected of students all the time. The responsibility of autonomously employing strategies should be gradually transferred to students (Afflerbach et al., 2020). Students at lower levels of proficiency and autonomy may still gain great benefits from external guidance from a teacher or textbook. Appropriate guidance in such a situation will be possible only if the teacher or the textbook writer is already familiar with the intricacies of the role of grammar in reading and can make informed decisions when giving instructions. This is where the operational framework proposed in this study can be of assistance, providing a systematic way of approaching and thinking about grammar in reading comprehension.

Conclusion

The interplay between grammatical knowledge and reading comprehension is intricate. Although potentially beneficial, grammar can pose a hindrance to reading comprehension as well. The present study

has illustrated some of the advantages and disadvantages of utilizing grammar when reading, partially explaining the differing results of the relevant studies in this line of research. In particular, it was discussed that a knowledge of grammar can be helpful in encoding increasingly difficult texts, while applying it to simpler texts may result in overthinking, overinterpreting, and overloading cognitive resources. As a guide to teachers, as well as more autonomous learners, an operational framework of grammatical knowledge in relation to reading comprehension was proposed. The main purpose of the framework is to raise awareness about the sophisticated role of grammar in reading comprehension by having the user question when and how grammar should be utilized to aid comprehension. The distinguishing factors in the framework are the knowledge/instruction dichotomy and the implicit/explicit continuum. As an example of explicit instruction aimed at developing explicit knowledge, the compensatory role of explicit knowledge of grammar in the absence of required resources to comprehend a text was illustrated. Finally, it was argued that the intricacies of the functions of grammar in reading comprehension could be aptly handled by adopting a strategy-based instructional approach. The end goal of such an instructional approach is to have autonomous students who are able to use their grammatical knowledge strategically to their advantage when reading.

The Author

Mehrdad Yousefpoori-Naeim, with a PhD in applied linguistics from Shahid Beheshti University and a second Master's in measurement, evaluation, and data science from the University of Alberta, conducts research exploring theoretical implications and practical applications of machine learning and natural language processing (NLP) in language education and assessment, especially the role of grammar in reading and writing.

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