

CHUNKING NAHWU AS A COGNITIVE-SYNTACTIC APPROACH: A Qualitative Case Study of Arabic Text Processing among Indonesian Students

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Abstract: Reading unvowelled Arabic texts remains challenging for many Arabic Language Education students due to difficulties in recognizing syntactic relationships and managing cognitive demands during sentence interpretation. This study examines Chunking Nahwu as a cognitive-syntactic approach for supporting students' syntactic processing and Arabic text comprehension. Employing a qualitative case study design, the study involved 22 undergraduate students enrolled in a *nahwu* course at the State Islamic Institute of Kerinci, Indonesia. Data were collected through classroom observations, semi-structured interviews, and analysis of students' syntactic annotations and learning artifacts. Data were analyzed using thematic analysis with iterative coding and source triangulation. The findings reveal three main patterns. First, Chunking Nahwu supported students in organizing syntactic information by recognizing grammatical relationships as interconnected units rather than isolated lexical elements. Second, syntactic chunking facilitated more integrated reading practices through phrase and clause segmentation and the connection between syntactic structures and meaning. Third, it encouraged metacognitive self-monitoring through grammatical evaluation and revision of syntactic interpretations. This study contributes to Arabic language pedagogy by extending chunking theory from information organization toward syntactic meaning construction, positioning Chunking Nahwu as a cognitive-syntactic approach that connects Arabic grammatical analysis with contemporary perspectives on language processing.

Keywords: Arabic language pedagogy, Chunking Nahwu, syntactic chunking, syntactic awareness, cognitive processing, Arabic text comprehension.

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Introduction

Naḥwu (Arabic syntax) constitutes not only a linguistic system but also an epistemological foundation for understanding Arabic,¹ and Islamic texts,² including the Qur'ân, *ḥadîths*,³ jurisprudence, theology, sufism⁴ and classical Islamic scholarship.⁵ Mastery of syntactic structures⁶—such as *mubtada'-khabar*, *fi'l-fâ'il-maf'ûl*, and the principles of *i'râb*—is essential for accurate interpretation,⁷ particularly when readers encounter unvowelled Arabic texts.⁸ Without sufficient syntactic awareness, readers risk misinterpreting textual meaning.⁹ In higher Islamic education, especially within Arabic Language Education, syntactic competence is closely associated with students' ability to access, interpret, and teach Arabic textual tradition.¹⁰ Consequently, developing students' syntactic awareness becomes a central objective of *naḥwu* instruction in Islamic higher education contexts.¹¹

However, syntactic competence in Arabic should not be understood merely as the ability to recall grammatical rules. Rather, it involves learners' capacity to recognize, organize, and process syntactic relationships during real-time reading activities. This distinction is particularly important because Arabic texts are frequently presented without vowel markings (*ḥarakât*), requiring readers to simultaneously coordinate morphological information, grammatical functions, and contextual meaning. Therefore, effective *naḥwu* learning requires not only knowledge acquisition but also cognitive mechanisms that enable learners to efficiently process syntactic structures during reading.

Despite its recognized importance, many students of Arabic continue to experience difficulties in identifying syntactic relationships within Arabic sentences,¹² particularly when reading texts without *ḥarakât* or vowel marks.¹³ Students frequently rely on word-by-word decoding strategies,¹⁴ processing lexical items separately without fully recognizing their structural and semantic relationship.¹⁵ This tendency often results in fragmented comprehension, low reading fluency, and limited interpretative accuracy.¹⁶

Previous studies further indicate that *naḥwu* instruction commonly emphasizes rule memorization and isolated grammatical analysis.¹⁷ As a result, students may understand grammatical concepts theoretically but experience difficulties when applying such knowledge during authentic reading situations.¹⁸

This phenomenon reveals a critical distinction between grammatical knowledge and syntactic processing ability. While previous approaches have successfully addressed how students acquire *naḥwu* rules, less attention has been given to how learners cognitively organize syntactic information when constructing meaning from Arabic sentences. In other words, the unresolved pedagogical challenge is not only how students learn grammatical structures, but how they transform grammatical knowledge into efficient processing strategies during Arabic text comprehension.

To address reading difficulties associated with cognitive processing,¹⁹ scholars in second and foreign language education have increasingly explored the use of Chunking *Naḥwu*.²⁰ Originating from cognitive psychology, chunking refers to the process of organizing information into meaningful units in order to reduce working memory load and improve information processing efficiency.²¹

Research in language learning contexts has shown that chunking can support reading fluency, comprehension, recall, and the holistic processing of linguistic structures.²² Empirical studies in EFL contexts have likewise reported that chunk-based instruction enhance reading speed, student confidence, and comprehension performance.²³

Nevertheless, most existing studies conceptualize chunking primarily as the organization of lexical items or formulaic expressions. Such approaches explain how learners access vocabulary and improve general reading fluency, but they provide limited insight into how chunking may operate in languages where meaning is strongly determined by hierarchical syntactic relationships. Therefore, extending chunking from lexical organization toward syntactic organization represents an important theoretical direction, particularly for Arabic learning where sentence interpretation depends on complex grammatical relations.

This theoretical extension suggests that chunking should not be viewed solely as a mechanism for reducing cognitive load through the organizing of linguistic information, but also as a process through which learners construct and organize syntactic meaning. In this perspective, syntactic chunking provides a cognitive framework for explaining how learners transform grammatical knowledge into functional representations during Arabic text processing.

Taken together, these studies establish that chunking can influence how learners organize linguistic information and can be associated with more developed reading performance. However, this body of research has largely addressed chunking in terms of general reading outcomes or the processing of meaningful linguistic sequences, particularly in EFL and other second-language contexts. It has provided considerably less explanation of how syntactically motivated chunking affects learners' processing of grammatical relationships within sentence.

Despite extensive research on chunking in EFL reading context, its application within Arabic syntax learning—particularly in *naḥwu* pedagogy—remains limited.²⁴ Existing studies predominantly examine chunking as a strategy for improving general reading fluency,²⁵ while relatively little attention has been given to how chunking may support syntactic awareness in morphologically rich and syntactically hierarchical language such as Arabic.²⁶

This limitation is important because Arabic sentence processing requires learners to recognize complex functional relationships among syntactic components, including

mubtada', *khavar*, *fi'l*, *fâ'il*, and *maf'ûl bih*, often within unvowelled textual environment.²⁷ Consequently, there remains insufficient understanding of how chunking may function as a cognitive mechanism to facilitate students' ability to process Arabic syntax as integrated meaning units rather than isolated grammatical forms.

Thus, the unresolved issue is not simply whether chunking can improve Arabic reading performance, but how chunking functions as a cognitive mechanism that facilitates the processing of syntactic relationships during the reading of unvowelled Arabic texts. More specifically, it remains unclear how organization of words and phrases into meaningful syntactic units enables learners to move beyond fragmented, word-by-word decoding toward integrated processing of Arabic sentence structures.

Addressing this issue is theoretically significant because it extends the understanding of chunking from general information-processing strategy into a mechanism for constructing syntactic meaning. This issue is particularly important in Arabic learning, where comprehension of unvowelled texts requires learners to simultaneously coordinate grammatical functions, morphological information, lexical knowledge, and contextual meaning.

This gap is pedagogically significant because syntactic competence in *naḥwu* extends beyond memorizing grammatical rules;²⁸ it involves the ability to recognize syntactic relationships during real-time processing.²⁹ Without instructional strategies that support integrated syntactic processing, students may continue relying on atomistic decoding practices³⁰ that limit comprehension efficiency and interpretative accuracy.³¹

In this context, chunking offers a promising pedagogical and cognitive approach because it encourages students to process Arabic sentences as meaningful syntactic units, thereby connecting grammatical structures with semantic interpretation.³² Such an approach may help students develop stronger syntactic awareness while simultaneously improving reading fluency and comprehension efficiency in Arabic texts.

In this context, the present study positions Chunking *Naḥwu* at the intersection of Arabic syntactic pedagogy and cognitive approaches to reading. Rather than treating chunking merely as a general reading technique, this study examines chunking as a strategy for organizing syntactic information into meaningful processing units during the reading of unvowelled Arabic texts.

This positioning enables the study to examine how chunking may support syntactic awareness and reading efficiency by facilitating a shift from fragmented lexical processing toward integrated syntactic processing.

Accordingly, this study investigates how Chunking *Naḥwu* instruction support the development of syntactic awareness and reading efficiency among Indonesian students of Arabic at State Islamic Institute of Kerinci. Using a qualitative case study design, the study explores students' experiences in processing Arabic text through Chunking *Naḥwu*

and examines the pedagogical implications of chunking for *nahwu* instruction in Islamic higher education.

Specially, the study addresses the following questions: (1) How do students experience chunking during *nahwu* instruction? (2) How does chunking support syntactic awareness and reading efficiency in reading Arabic texts? (3) What pedagogical implications emerge from the implementation of chunking in *nahwu* instruction?

This study contributes to the literature in three significant ways

First, this study contributes to discussions on the application of chunking theory by exploring syntactic chunking as a cognitive strategy for organizing grammatical relationships into meaningful processing units during Arabic text comprehension. Rather than viewing chunking merely as a strategy for organizing lexical information,³³ this study provides empirical insights into its potential role in supporting syntactic processing within a morphologically rich and structurally complex language such as Arabic.

Second, this study expands the understanding of syntactic awareness in *nahwu* learning beyond the acquisition of grammatical rules by highlighting it as a learning process through which students recognize, organize, and interpret syntactic relationships during reading activities. This perspective provides further insights into how grammatical knowledge may be transformed into functional processing practices when students engage with unvowelled Arabic texts.

Third, this study provides a pedagogical contribution by offering a cognitively informed perspective for enriching *nahwu* instruction. By integrating cognitive processing perspectives into Arabic grammar pedagogy, the study suggests the potential value of complementing rule memorization-oriented practices with meaning-oriented syntactic processing, thereby supporting more meaningful engagement with Arabic textual traditions in Islamic higher education contexts.

Method

This study employed an embedded single-case qualitative design³⁴ to explore students' experiences during the implementation of Chunking *Nahwu* instruction in a natural classroom setting.³⁵ The embedded case study design was selected because the study examined multiple dimensions of students' learning experiences within a bounded educational context, including syntactic processing behaviors, classroom interactions, and students' perceptions of Chunking *Nahwu* implementation.

This design enabled the researcher to explore not only students' learning experiences but also the cognitive processes through which learners organized and interpreted Arabic syntactic structures during text reading activities. The study focused on a single *nahwu* class at the State Islamic Institute of Kerinci (IAIN Kerinci) and utilized multiple sources

of qualitative evidence³⁶ to obtain an in-depth understanding of how students processed Arabic syntactic information through Chunking Naḥwu.³⁷

The participants consisted of 22 undergraduate students (12 males and 10 female; aged 19-21 years) enrolled in the fifth-semester of the *naḥwu* 3 course at IAIN Kerinci, Indonesia. Participants were selected through purposive sampling because they possessed relevant academic backgrounds and previous experiences in Arabic grammar learning and text interpretation.³⁸

The selection criteria included students who had completed foundational Arabic grammar courses and were engaged in activities requiring Arabic sentence analysis and text interpretation. These characteristics were relevant because the study examined students' transition from grammatical knowledge toward syntactic processing during Arabic reading activities.

The research was conducted in a regular classroom environment to maintain authentic learning interactions and observe students' responses during the implementation of the Chunking Naḥwu instruction.³⁹ The natural classroom setting allowed the researcher to examine how students applied syntactic processing strategies during actual Arabic reading activities.

Consistent with qualitative research traditions, the researcher acted as the primary research instrument.⁴⁰ As the course lecturer, the researcher facilitated the implementation of Chunking Naḥwu instruction, conducted classroom observations, recorded field notes, and carried out semi-structured interviews with participants.

The researcher's dual role as instructor and researcher was acknowledged through continuous reflexivity. Analytical decisions were based on systematically collected qualitative evidence rather than personal impressions. Reflective notes were maintained throughout the research process to monitor potential researcher biases and maintain interpretative transparency.⁴¹

The research procedure consisted of four sequential stages: (1) preliminary observation, (2) implementation of Chunking Naḥwu instruction, (3) qualitative data collection, and (4) reflective evaluation.

During the preliminary stage, classroom activities were examined to identify students' difficulties in reading Arabic texts, particularly unvowelled texts (*ḥarakah*). The researcher observed students' tendency to process Arabic sentences through isolated word recognition rather than syntactic relationships.

During the implementation stage, classroom activities were observed to identify students' difficulties in reading Arabic texts, particularly unvowelled Arabic texts (texts without *ḥarakah*). The researcher examined students' reading behaviours and identified their tendency to process Arabic sentence through isolated word recognition rather than through syntactic relationships.

This stage provided an initial understanding of students' existing reading strategies and informed the implementation of Chunking Nahwu instruction.

During the implementation stage, students were introduced to Chunking Nahwu as a cognitive-syntactic approach for organizing Arabic sentences into meaningful syntactic units. Rather than analyzing sentences solely through individual words and grammatical rules, students were guided to identify relationships among syntactic components and interpret sentences as interconnected structures.

For example, the sentence:

كَتَبَ الطَّالِبُ الدَّرْسَ

was analyzed not only as separate lexical but as meaningful syntactic chunks:

[كَتَبَ] [الطَّالِبُ] [الدَّرْسَ]

representing:

[*Fi'il*] [*Fâ'il*] [*Ma'ûl bih*]

Through this process, students were encouraged to connect grammatical functions with sentence meaning and develop more integrated approaches to Arabic text comprehension. The implementation emphasized the organization of syntactic relationships rather than merely identifying individual grammatical categories.

Following the implementation stage, qualitative data were collected through interviews, classroom observations, and documentation analysis. Reflective follow-up activities were conducted through participant interviews and examination of students' learning artifacts to understand how students perceived the role of Chunking Nahwu in supporting syntactic awareness and Arabic text processing.

Data were collected from three complementary sources: semi-structured interviews, classroom observations, and documentation analysis. Semi-structured interviews were conducted with all 22 participants to explore their experiences, perceived challenges, reading processes, and learning perceptions related to Chunking Nahwu implementation.⁴² The interview protocol focused on four main aspects: (1) students' difficulties in reading Arabic texts, (2) students' experiences during Chunking Nahwu implementation, (3) perceived changes in syntactic awareness, and (4) perceived changes in Arabic text processing practice. The interviews provided insights into students' cognitive experiences and perceptions during the learning process.

Classroom observations were conducted during Arabic reading activities to document students' behaviors in identifying,⁴³ segmenting, and interpreting syntactic chunks.⁴⁴ The observation framework focused on students' abilities to (1) identify syntactic units, (2) recognize grammatical relationships, (3) organize words into meaningful syntactic chunks, and (4) interpret sentence meaning through syntactic structures. Field

notes were used to record students' interactions, responses, and learning behaviours throughout the implementation process.

Documentation analysis was conducted on students' learning artifacts, including written notes, chunk markings, separators, and syntactic annotations produced during the learning process.⁴⁵ These documents were analyzed to identify evidence of students' development in organizing Arabic syntactic structures and connecting grammatical functions with textual meaning.

Data analysis followed Braun & Clarke's thematic analysis framework,⁴⁶ consisting of six analytical process: (1) familiarization with the data, (2) generation of initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, (6) reporting findings.

Interview transcripts, observation notes, and student documents were repeatedly reviewed to identify meaningful patterns⁴⁷ related to students' syntactic awareness, reading strategies, cognitive processing, and learning experience.⁴⁸

Initial coding was conducted by identifying recurring patterns across the three data sources. The coding process was iterative, with codes continuously compared across interview transcripts, observation notes, and students documents to identify consistent patterns and relationships.

The initial codes were then organized into broader themes representing recurring patterns across participants and data sources. The themes were reviewed and refined to ensure consistency with the research questions and qualitative evidence. Finally, the identified themes interpreted to explain how Chunking Naḥwu supported students' syntactic processing and Arabic text comprehension.

To ensure the trustworthiness, four strategies were implemented: source triangulation, member checking, audit trail documentation, and researcher reflexivity.⁴⁹ Source triangulation was conducted by comparing findings from interviews, classroom observations, and documentation analysis.⁵⁰ Member checking was conducted by allowing participants to review selected interview interpretations to confirm the accuracy of the researcher's understanding.⁵¹ An audit trail was maintained to document research procedures, coding processes, and analytic decisions throughout the study.⁵² Researcher reflexivity was continuously practiced to critically examine potential biases associated with the researcher's role as a *naḥwu* instructor.⁵³

Ethical considerations were maintained throughout the research process. Participants were informed about the purpose, voluntary participation, and confidentiality procedures. All participants provided informed consent, and their identities were protected during data analysis and reporting.

Results and Discussion

Results

This study revealed three interconnected findings regarding how Chunking Nahwu supported students' syntactic processing, reading practices, and reflective learning behaviours during Arabic text comprehension. The findings are organized according to the research questions and reflect students' cognitive, linguistic, and pedagogical experiences during the implementation of Chunking Nahwu.

Chunking Functioned as a Cognitive Aid for Organizing Syntactic Information

The findings revealed that students perceived Chunking Nahwu as a helpful cognitive strategy for organizing syntactic information while reading Arabic texts. Prior to the implementation of Chunking Nahwu, many participants described their reading process as fragmented and heavily dependent on word-by-word decoding. Students frequently reported difficulties in identifying syntactic relationships within long and unvowelled Arabic sentences, particularly in distinguishing grammatical functions (*i'râb*) such as *mubtada'–khabar* and *fi'l– fâ'il–maf'ûl bih* structures.

After the implementation of Chunking Nahwu, students gradually began to process Arabic sentences as interconnected syntactic units rather than isolated lexical items. Classroom observations showed that participants became more attentive to clause boundaries, syntactic dependencies, and sentence patterns during reading activities. One participant explained:

"Before, I used to read word-by-word, but after learning chunking, I can immediately see which part is the verb and which is the subject." (Student-5)

Students' learning notes and annotations further demonstrated the emergence of more organized syntactic processing. Many participants used slashes, arrow, spacing, and color markings to separate clause and identify grammatical relationships within sentences. These annotations indicated that students used Chunking Nahwu to visually structure Arabic sentences into manageable syntactic segments.

Documentation analysis further revealed that students increasingly recognized core *nahwu* structures, including *jumlaḥ ismiyyah*, *jumlaḥ fi'liyyah*, *mubtada'–khabar*, and *fi'l– fâ'il–maf'ûl bih* relationships during reading exercises. Rather than focusing exclusively on individual vocabulary item, students appeared to engage more actively with the relational structures underlying Arabic sentences.

Overall, the findings indicate that students used Chunking Nahwu not merely as a reading strategy but also as a means of organizing and interpreting syntactic information more systematically during *nahwu* learning.

Chunking Facilitated Integrated Syntactic Processing and Reduced Fragmented Reading

The second finding demonstrated that chunking supported students in developing more integrated approaches to Arabic text reading. Many participants reported that chunking helped them process sentence meanings without excessive interruption or repeated word-level decoding. Students frequently described long Arabic sentences as becoming “lighter,” “clearer,” and easier to interpret after applying Chunking Nahwu. One student stated:

“Now I can read a long sentence at once and understand both its structure and meaning without stopping at every word.” (Student-12)

Classroom observations consistently showed that students became more capable of grouping phrases and clauses into meaningful syntactic units during reading activities. Instead of pausing at nearly every lexical item, participants gradually developed smoother reading patterns and more stable sentence segmentation.

Several students applied visual segmentation strategies to support their reading practices. These included the use of slashes, arrows, spacing, and color coding to identify syntactic boundaries and grammatical relationships within Arabic texts.

One example from students’ annotated learning artifacts is shown below. Students segmented the following Qur’anic passage into syntactic chunks:

وَالْعَصْرِ ○ إِنَّ الْإِنْسَانَ لَفِي خُسْرٍ ○ إِلَّا الَّذِينَ آمَنُوا وَعَمِلُوا الصَّالِحَاتِ وَتَوَّصَوْا بِالْحَقِّ وَتَوَّصَوْا بِالصَّبْرِ

Student Annotation:

وَالْعَصْرِ // إِنَّ الْإِنْسَانَ → لَفِي خُسْرٍ // إِلَّا الَّذِينَ آمَنُوا // وَعَمِلُوا الصَّالِحَاتِ // وَتَوَّصَوْا بِالْحَقِّ وَبِالصَّبْرِ

Another example from students’ annotations is presented below:

يقرأ الجريدة اليومية معلم شاب في الصباح

Student Annotation:

يقرأ الجريدة اليومية // معلم شاب // في الصباح

قال الأستاذ إِنَّ الفهم أهم من الحفظ

Student Annotation:

قل الأستاذ // إِنَّ الفهم أهم من الحفظ

قل الأستاذ // إِنَّ الفهم // أهم // من الحفظ

The visual segmentation enabled students to identify clause relationships more clearly and was associated with reduced confusion when processing complex sentence structures. During classroom reading activities, students also demonstrated more organized reading patterns by aligning pauses with syntactic boundaries.

Another participant commented:

"I read in chunks now, not word-by-word. It's easier to understand and sounds more natural." (Student-11)

Field notes indicated that Chunking Nahwu also encouraged students to connect syntactic analysis with semantic interpretation. Rather than memorizing grammatical rules separately, students began to use syntactic grouping as a strategy for predicting and interpreting sentence meaning during Arabic reading activities.

Overall, the findings indicate that Chunking Nahwu facilitated a shift from fragmented decoding toward more integrated syntactic processing, enabling students to engage with Arabic texts in a more organized, fluently and meaningful manner.

Chunking Promoted Metacognitive Self-Monitoring and Reflective Nahwu Learning

The third finding showed that Chunking Nahwu encouraged students to engage in self-monitoring and reflective practices during nahwu learning. As students became more familiar with syntactic chunking, they increasingly demonstrated awareness of grammatical inconsistencies and began correcting their own reading errors independently.

One participant explained:

"I used to ignore my mistakes, but now I quickly notice when something doesn't match the expected i'râb pattern." (Student – 17)

Classroom observations revealed that students frequently paused to reconsider sentence structures, revise chunk boundaries, and re-evaluate grammatical relationships during reading activities. This behavior indicated the emergence of more active monitoring processes during text comprehension.

Students' written annotations further illustrated the development of self-monitoring practices. Several participants produced reflective grammatical notes, such as:

- هذا مُبْتَدَأٌ، يجب أن يكون مرفوعاً.
- "الفعل مؤنث، يجب تغيير الضمير".
- "هذا الخبر، لا يجوز كسرة".

These reflective comments indicated that students were not only identifying grammatical structures but also evaluating the accuracy of their own syntactic interpretations. In several cases, students independently revised chunk boundaries after recognizing inconsistencies between sentence structures and meanings.

In addition, classroom participation became more active during Chunking Nahwu-based reading sessions. Students appeared more willing to read aloud, discuss sentence structures, and test their grammatical interpretations collaboratively. Several participants

also described Chunking Naḥwu as making Arabic reading less intimidating and more manageable.

The findings further suggest that Chunking Naḥwu encouraged a movement from teacher-dependent grammatical analysis toward more self-regulated reading behaviours. Through repeated practice, students gradually reported developing greater confidence in analyzing Arabic sentence structures independently.

Overall, the implementation of Chunking Naḥwu supported students' syntactic processing while also encouraging reflective reading practices, self-monitoring, and more cognitively engaged participation in Arabic text comprehension.

Discussion

The findings of this study suggest that Chunking Naḥwu functions not merely as a reading strategy but as a cognitive-syntactic mechanism that supports students in organizing syntactic information during Arabic texts processing. The study demonstrates that Chunking Naḥwu can facilitate a transition from fragmented word-by-word decoding toward more integrated syntactic processing, particularly when students encounter unvowelled Arabic texts. This finding is significant because Arabic reading requires learners to simultaneously process lexical meanings, morphological forms, syntactic relationships, and contextual interpretation. Therefore, successful comprehension depends not only on recognizing individual words but also on understanding how grammatical elements interact to construct sentence meaning.⁵⁴

The contribution of this study extends beyond the simple application of chunking theory to *naḥwu* instruction. Previous studies have primarily conceptualized chunking as a mechanism for grouping lexical items, formulaic sequences, or meaningful information units to reduce processing demands in second-language learning contexts.⁵⁵ However, the findings of this study extend this perspective by demonstrating that chunking can also operate at the syntactic level. Through syntactic chunking, learners organize grammatical relationships into meaningful structural units, allowing them to process Arabic sentences as interconnected systems rather than as isolated lexical sequences. Thus, this study contributes a theoretical extension by positioning chunking not only as a mechanism of information grouping but also as a mechanism of syntactic meaning construction in language comprehension.

This cognitive mechanism can be further understood through the perspective of Cognitive Load Theory, which emphasizes that learners' working memory has limited capacity for processing complex information.⁵⁶ In the context of unvowelled Arabic texts, learners must identify lexical meanings, determine grammatical functions, analyze *i'rāb* patterns, and construct sentence-level interpretations simultaneously. These multiple processing demands may create substantial cognitive challenges, particularly for learners who have not yet developed stable syntactic schemas.

The findings suggest that syntactic chunking does not simplify Arabic grammar itself; rather, it provides learners with an organized framework for managing grammatical complexity by grouping related linguistic elements into meaningful units. Through this process, learners may be better able to allocate to syntactic relationships and semantic interpretation while processing Arabic sentence structures.

The findings also contribute to a broader understanding of syntactic awareness in second-language reading. Previous approaches to grammar learning have often emphasized explicit knowledge of grammatical rules and analytical procedures. While such knowledge remains essential, this study suggests that syntactic competence involves more than knowing grammatical formulas; it also requires the ability to apply grammatical knowledge during real-time text processing.⁵⁷

Through Chunking *Nahwu*, students appeared to move from viewing grammar as a collection of separate rules toward using grammatical relationships as resources for constructing meaning. This perspective expands previous discussions of grammar learning by highlighting syntactic awareness as an active cognitive process rather than merely declarative knowledge.

Furthermore, this study provides insight into the role of chunking within Arabic language learning, a context that has received less attention compared with English and other second-language learning environment. Arabic presents distinctive challenges for learners because meaning is strongly influenced by morphological patterns, case marking, and syntactic relationships, particularly when reading texts without vowel markings.⁵⁸

The findings suggest that syntactic chunking may have particular relevance for languages in which grammatical relationships play a central role in meaning interpretation. By examining chunking within Arabic *Nahwu* learning, this study broadens the theoretical application of chunking beyond previously dominant language contexts and demonstrates its potential relevance for syntactically complex languages.

Another important contribution of this study concerns the relationship between chunking and metacognitive learning processes. The findings indicate that syntactic chunking enabled students to engage in self-monitoring of their interpretations, evaluate grammatical relationships, and revise their understanding when inconsistencies appeared. This suggests that chunking may support not only comprehension but also reflective engagement during language learning.

From a metacognitive perspective, learners become more actively involved in monitoring how they process linguistic information rather than relying exclusively on external explanations from instructors.⁵⁹ Therefore, syntactic chunking may function as both a cognitive processing strategy and a pedagogical approach that promotes learner autonomy.

The pedagogical implications of this study are particularly relevant for *naḥwu* instruction in Islamic higher education contexts, where students are expected to engage with classical and religious Arabic texts. Traditional *naḥwu* approaches have provided important foundations through grammatical rules, parsing exercises, and linguistic analysis. However, the findings suggest that learners also require opportunities to apply grammatical knowledge through meaningful reading activities.

Chunking Naḥwu provides a bridge between grammatical knowledge and practical text interpretation by encouraging students to perceive grammar as a tool for constructing meaning rather than merely a collection of rules. In this way, Chunking Naḥwu offers a complementary approach that integrates grammatical understanding with cognitive processing during Arabic text comprehension.

However, the findings also indicate that syntactic chunking requires appropriate scaffolding. Some students experienced difficulties in determining chunk boundaries when encountering complex sentence structures involving multiple modifiers or embedded clauses. This suggests that chunking should not be introduced as an immediate independent strategy but should be developed gradually through guided modeling, repeated practice, and structured feedback.

Such support is necessary to help learners move from teacher-guided analysis toward independent syntactic processing. Therefore, successful implementation of Chunking Naḥwu requires instructional design that considers learners' developmental levels and provides sufficient opportunities for guided practice.

Overall, this study contributes to cognitive approaches in Arabic grammar pedagogy by reconceptualizing chunking as a syntactic processing mechanism rather than merely a general reading technique. By extending chunking theory toward syntactic organization and meaning construction, the study provides a new perspective on how learners transform grammatical knowledge into functional reading practices. The findings suggest that integrating cognitive processing approaches into *naḥwu* instruction may support more meaningful, reflective, and effective engagement with Arabic texts and broader Islamic textual traditions.

Conclusion and Implications

This study demonstrates that Chunking Naḥwu functions as more than a technical reading strategy in Arabic grammar instruction. Rather than merely assisting grammatical segmentation, syntactic chunking supports the cognitive organization of syntactic information during the reading of unvowelled Arabic texts. The findings indicate that Chunking Naḥwu facilitates a shift from fragmented word-by-word decoding toward more integrated syntactic processing, allowing students to engage with Arabic texts through structural relationships rather than isolated lexical analysis.

In this regard, syntactic awareness should not be understood merely as knowledge of grammatical rules but also as a cognitive ability involved in meaning construction and text interpretation. The finding highlight that learners' ability to recognize and organize syntactic relationships plays an important role in transforming grammatical knowledge into functional reading practices.

The study also contributes to the growing discussion on integrating cognitive approaches into Arabic grammar pedagogy by extending the application of chunking theory beyond lexical and general language processing contexts. While previous studies on chunking have predominantly focused on English and other second-language learning contexts, this study demonstrates how syntactic chunking can support the processing of Arabic sentence structures characterized by complex grammatical relationships.

The contribution of this study lies in conceptualizing Chunking Nahwu as a cognitive-syntactic approach that connects grammatical knowledge with actual text-processing practices. In this sense, Chunking Nahwu provides a potential bridge between classical *nahwu* analysis and contemporary cognitive perspectives on language learning.

From a pedagogical perspective, the findings suggest that *nahwu* instruction may benefit from moving beyond exclusive emphasis on rule memorization and isolated grammatical analysis toward more process-oriented and interpretative learning activities. By encouraging students to organize syntactic relationships into meaningful units, Chunking Nahwu may support learners in applying grammatical knowledge more effectively during Arabic text comprehension.

Therefore, this approach offers potential implications for Arabic language instruction, particularly in higher education contexts where students are expected to engage with unvowelled Arabic texts and classical Islamic literature.

Nevertheless, this study has several limitations. First, the research was conducted within a single classroom context involving a relatively small number of participants, which limits the transferability of the findings to broader educational settings. Second, the study relied on qualitative evidence, including interviews, classroom observations and learning artifacts, rather than longitudinal measurements of reading development or experimental comparisons.

Future research may therefore investigate the long-term development of syntactic chunking ability through broader participant groups, comparative research designs, and quantitative measures of Arabic reading fluency, syntactic accuracy, translation competence, and academic text comprehension.

Overall, this study provides an empirically grounded perspective on how cognitive reading strategies can enrich Arabic grammar instruction. By positioning Chungking Nahwu as a cognitive-syntactic approach rather than merely a classroom technique, this study contributes to the development of more meaningful, process-oriented, and interpretatively grounded approaches to Nahwu learning in contemporary Arabic language education.

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Endnotes:

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