

The Impact of the Conker Digital Chunking Platform on Arabic Reading Comprehension Among Eighth-Grade Students

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Abstract—This study explored the impact of digital chunking through the use of the Conker Platform on eighth-grade students' Arabic reading comprehension. The study sample included 74 students who were divided into an experimental group that used the Conker platform for 10 weeks and a control group that studied through the traditional method. The results revealed that the experimental group achieved significant improvements in all levels of comprehension. Literal comprehension increased by more than 30 points, and inferential comprehension increased even more, which is important because it is harder than literal comprehension and requires direct training. The students in the experimental group used feedback 12 times a week, while the control group used it only 3 times. Critical understanding also improved significantly. The experimental group also completed more activities, which showed that the platform increased their participation and motivation, and their ratings for the platform, including ease of use and clarity of activities, were very high. The study demonstrates that well-designed digital platforms that employ effective teaching techniques like chunking have a significant influence and alter the content of the lesson. This indicates that digital education is necessary, especially if we want to raise the reading comprehension level and tackle the reading crisis that clearly appears from eighth grade and beyond. The study recommends integrating digital chunking strategies into teaching, not as a complete replacement for traditional methods, but as a powerful tool that makes comprehension easier, deeper, and more enjoyable.

Index Terms—digital learning platforms, reading comprehension, digital chunking, Conker platform

I. INTRODUCTION

There has been a substantial shift in how we interact with education, particularly with the incorporation of digital technologies and artificial intelligence (AI) into all aspects of the educational process. Students no longer study solely from books and blackboards; instead, e-platforms and AI applications have transformed the educational process in the past few years. With this change, instructors have reconsidered the tactics they utilise in the classroom, particularly for topics that are not intrinsically simple for Arabic-speaking students. Reading in Arabic has been and continues to be one of the most challenging abilities for learners, which frustrates Arabic teachers (Abu Omar et al., 2025; Al-Rawashdeh et al., 2025).

An eighth-grade student is still in a transitional phase; they are neither too young nor old enough to be able to handle long and complex formal texts. Usually, the texts found in textbooks are filled with new words, interconnected ideas, long sentences, and information presented all at once, which creates a significant cognitive load on the student—so

much so that sometimes he reads the entire page without understanding what he has read (Harara et al., 2024; El-Ebiary et al., 2024; Rababah et al., 2023).

Several studies pointed out that the chunking method aids in information processing by breaking the material down into small, structured chunks rather than a single, difficult-to-understand block (Alorani et al., 2026; Al Etoum et al., 2025; Al-Bdour et al., 2025). In other words, the teacher does not offer the learners everything at once; rather, he breaks the material into tiny segments, each having a clear objective, a clear piece of information, and a small task that can be accomplished without distraction. This is mostly based on working memory theories, which contend that since the human brain can only process a certain amount of information at once, the more we reduce the load, the better our comprehension (Rababa'h et al., 2024; Sakarneh et al., 2023). It has recently been possible to use this method in a more organised way thanks to technological advancements and intelligent educational platforms. One of these platforms is "Conker", which is powered by artificial intelligence and has grown to be a significant component of a new educational experience. It enables learners to interact with texts gradually by breaking down sentences, analysing them, highlighting important words, and offering brief sequential activities to help with comprehension (Al-Manasreh, 2025; Saleh, 2025; Sawalha & Abu Al-Nahel, 2025). Despite the usefulness of this method, its implementation in Jordanian classrooms is very restricted. This weakness is not due to the ineffectiveness of the plan but rather to various reasons, such as inadequate teacher training, limited technology resources, reliance on conventional teaching techniques, and the lack of sufficient local studies showing "how effective this system is within the local context" (Abu-Elrob & Tawalbeh, 2022; Abu-Elrob, 2019; Abusheirah et al., 2024).

A. *The Problem of the Study*

Despite the significant efforts made by teachers and schools to develop reading levels, comprehension of texts among many Jordanian students remains weak (Amer et al., 2024; Alazzam et al., 2024; Malkawi et al., 2024). The student may read a paragraph multiple times yet still grasp only a limited portion of its meaning. Comprehension extends beyond decoding words and involves multiple levels:

- Literal comprehension: What is written in the text? What information is mentioned? What does the writer mean?
- Inferential comprehension: What does the writer mean? What conclusion should he draw?
- Critical understanding: Is the idea logical? Is it possible to compare it with others?

The traditional methods do not address the core of the issue, as they do not reduce cognitive load or organise information in a way that the students' brains prefer. The student may become preoccupied with securing pronunciation or trying to understand the words, at the expense of grasping the deeper meaning. Thus, the present study aims to explore how a platform that adopts a chunking strategy in an organised and intelligent manner significantly raises the level of understanding compared to the traditional method.

B. *Study Questions*

The study aims to answer the following questions:

- Does digital chunking increase literal understanding over the traditional method?
- Does digital chunking help develop students' inferential skills?
- Is there a real impact of digital chunking on critical understanding?

C. *The Significance of the Study*

Theoretically, the study adds scientific evidence based on key theories that support the idea that the brain processes information more effectively when it is divided. Practically, the study offers teachers a new option that could change the format of the lesson instead of the classroom becoming monotonous and cognitively overwhelming. There are not enough studies that have tested the impact of digital fragmentation on middle school students. Hence, this study addresses an important research gap. Breaking tasks into smaller parts reduces frustration and increases the student's self-confidence because the student sees progress step by step and becomes able to solve tasks that he once considered impossible.

II. LITERATURE REVIEW

A. *Reading Skills*

Reading comprehension is an essential skill that must be developed in students learning Arabic, since reading is the primary source of modern information, scientific books, and instructions. In addition, it expands a person's knowledge and experience, which is an important part of self-development. However, many students struggle with reading. Teaching students how to understand the text is not always easy, especially if there are problems such as a lack of interest in reading long texts, a lack of vocabulary, or difficulty in connecting sentences, which can make the student feel that the text is ambiguous (Alghazo et al., 2023; Almsbhiien et al., 2023).

Reading is widely recognised as a foundational academic skill. It is the most important skill that determines a student's success in education and in life as a whole. That is why students need to focus on it well because it is the key

to excellence. Reading is not just about going over the words; it expands one's knowledge and provides information from all fields. Specifically, reading comprehension depends on the student's ability to understand the written words, grasp the general idea, and piece together the meaning present in the text (Rababa'h et al., 2024; Al-Bdour et al., 2025). When students have an interest in reading, this greatly helps them progress their reading comprehension. But the problem is that there is still a clear weakness in people's inclination to read.

Reading has different methods and strategies; it can be electronic or paper-based, but the important thing is that an individual reads to increase their knowledge and develop their understanding. Mastering vocabulary and correctly understanding sentences are essential for one to comprehend the text. The best understanding of the text occurs when there is a purpose for reading, that is, the reader wants to learn or truly enjoy what they are reading. Here, reading comprehension becomes very important, especially for students who are learning Arabic. Sometimes students face problems understanding the main idea of the text, and the reason is often that their vocabulary is limited or they cannot connect the sentences and comprehend the entire content. When a student reads, he should not just memorise the sentences as they are, but rather he needs to build a mental image of the subject; that is, he should piece together the meanings to come up with a clear and complete idea (Al-Bdour et al., 2025).

It is noticeable that there are several problems affecting the learning process—especially regarding students' use of strategies—such as limited vocabulary, weak reading skills, or the inability to understand sentences even if students know the meanings of the words. The "chunking" strategy can help students understand the sentence by breaking it down into smaller, more manageable parts. By using this method, the students temporarily understand the structure of the sentence, which helps them reorganise the meaning more easily. If we want an interactive learning environment, the teacher must use effective methods that encourage students to engage with the text. Traditional teaching sometimes bores the students and makes the subject harder. One of the most important methods is the chunking strategy. It is a method that makes it easier for students to read without taking much time. This strategy is effective because it makes the student feel comfortable while reading and allows them to handle the text easily by breaking down difficult passages into smaller, more understandable parts. In this way, the student can grasp the main ideas, distinguish important words, improve their paraphrasing ability, organise their thoughts, and gather information more easily (Hsieh, 2020).

Teaching reading using the chunking strategy is enjoyable, especially in second language instruction. The goal of using this strategy is to develop a teaching method that some teachers have not yet updated. By using chunking, the teacher becomes able to deliver the lesson better, and it results in better outcomes in the learning process, as expected (Kosaka, 2024).

B. The Chunking and Passing Model

The idea of the "chunking and passing" model proposed by Chater et al. (2016) simply states that the human mind has a limited capacity for storing information. According to Miller (2003), short-term memory can hold approximately 7 ± 2 chunks of information. According to more recent research by Morra et al. (2024), it is closer to 4 ± 1 . Because of these natural limits, a person cannot process language as quickly as it is inputted, so they have to segment the linguistic inputs and recode them into larger units in order to understand and continue reading.

The term 'chunking' here means that we combine small parts into a larger unit (Golshani et al., 2020). If this merging does not happen, there will be an overlap of information, and the new information will overshadow the previous one. Since a sentence usually contains more than 10 words—beyond the capacity of memory—the brain developed the "chunking and passing" mechanism to deal with the high speed of the language we hear or read (Chater et al., 2016).

The term "chunk" means in this context combining smaller linguistic units into larger meaningful structures or combining words to form a phrase. Whether the phrase is complete both grammatically and semantically (play the field) or slightly incomplete (without the primary), according to Golshani et al. (2020). But the goal in the end is always the same: to have a unified mental representation—a complete unit—not scattered parts.

According to Kosaka (2024b), chunks that are not complete syntactically and semantically are usually more difficult for the learner because it is hard to deal with them as a single unit. That is why, in this study, we focus on chunks that consist of more than one word but form a complete linguistic unit, as they are the closest to what the student can actually process and benefit from in reading skills. Although the chunking model has garnered significant attention in linguistics (Guo & Ellis, 2021), its impact in the field of foreign language teaching has not yet been sufficiently studied. This is where the importance of the present study comes in, as it attempts to apply the model in an EFL teaching environment.

C. Previous Studies

According to Kosaka (2024), the chunk-and-pass model proposes that language development entails learning to efficiently chunk linguistic information, recoding it into bigger linguistic sequences, such as from words to phrases, in order to build a more abstract representation. This quasi-experimental study looks at the effectiveness of chunk reading strategy training (CRST) in improving the word chunking skills of low-proficiency Japanese English learners. The control group received conventional block-format reading instruction; the experimental group received CRST. A phrasal decision test evaluated online multiword processing at the pretest, posttest, and delayed posttest stages. The results of the study showed that the experimental group improved in reaction times after intervention, but the control group improved only in the delayed posttest.

According to Nishida (2013), chunking can boost reading comprehension. To comprehend the purpose of employing chunks to improve reading, students must first master syntactic structures and then practise using them. In Nishida's study, the participants were given instructions on grammatical organisation and instructed to practise reading chunks. The purpose of the study was to objectively analyse whether precise chunking exercises may enhance reading comprehension abilities. Following that, learning accomplishment records (i.e., chunking tests and English-to-Japanese translation practice conducted during class) were qualitatively analysed in order to elucidate how participants learnt chunking and improved their reading comprehension abilities. Furthermore, factors influencing the improvement of reading comprehension abilities were investigated. The findings revealed that the participants' chunking mistakes decreased as they got further education on chunking methodologies and syntactic structures. However, fewer chunking mistakes were not necessarily linked to better reading comprehension abilities. Differences in syntactic structure learning and execution had the greatest impact on reading comprehension.

The chunking approach was studied by Abejuela et al. (2023) to enhance students' reading comprehension. The results revealed that teaching reading comprehension through the use of chunking was a successful educational approach. The learners' pre- and post-test scores indicated substantial improvement. Using this method, teachers may make it simpler for learners to absorb and retain content, hence improving performance.

Tanaka (2014) explored phrase-level (chunk) processing fluency using an accelerated chunk reading task that alters the display time of chunks. Another goal of this study was to see if rapid chunk reading improves students' reading comprehension and fluency. In this study, 43 Japanese EFL learners read paragraphs at three distinct speeds: rapid, normal, and slow, and then recalled the information. The fast-paced condition in the reading assignment was thought to be fluent reading; therefore, students who grasp material well in this condition are expected to process chunks fluently. Tanaka pointed out that the hypothesis suggested that chunk-processing fluency is related to reading proficiency. The results of Tanaka's study support this hypothesis. There were disparities in chunk-processing ability between proficiency levels in fast reading. The results do not show a substantial gain from rapid chunk reading, as predicted from prior studies, although reading efficiency, one of the indices of reading fluency, was higher in the fast-reading condition than in the other conditions at both competence levels.

III. METHODOLOGY

A. Study Design

A quasi-experimental pretest-posttest control group design was employed. This design was chosen because it allows the researchers to examine the impact of the digital chunking strategy on reading comprehension among L1-Arabic students under natural classroom conditions, without being able to control all the conditions like in full experimental studies.

B. The Populations and Sample of the Study

The total number of participants was 74 Jordanian school students. They were distributed equally between the experimental group and the control group: The experimental group ($n = 37$) used the Conker digital platform supported by artificial intelligence, applying the chunking strategy to Arabic reading texts, and the control group ($n = 37$) continued with traditional methods using only the textbook, and the same educational content was taught but without digital intervention or organised text chunking.

The reason for choosing eighth grade is because it is considered an important transitional stage: the students start to get acquainted with longer texts; they are introduced to higher linguistic content than in previous years; it becomes required for them to think at a higher level, not just literal understanding; this is the stage that determines whether the student will continue to excel in the language or weaken in it; and the "reading crisis" for many students starts from eighth grade. If it is not addressed at this stage, it will continue to the higher levels.

C. Study Tools

The chunking approach was initially implemented using the Conker digital platform, which has the following features: Long texts should be broken up into manageable, small units (chunks) with interconnected sentences; interactive questions should be asked after each unit to assess literal, inferential, and critical understanding; students should receive immediate feedback on their answers so they know whether they are correct and how to fix their mistakes; and the teacher should be able to see each student's progress and performance in real time. Because of the platform's AI assistance, texts and comprehension problems may be tailored to the individual level of each student. This improves learning accuracy and lessens cognitive burden. The reading comprehension exam is the second instrument. Three essential competencies were to be measured by the test that the researchers created: literal comprehension, inferential comprehension, and critical comprehension.

D. Study Procedures

Prior to the final application, a small sample of people who were not included in the study were given a pilot test by the researchers. The actual research lasted ten weeks, with weekly scheduled reading sessions for each group. During the first week, the pre-test was used. Prior to any intervention, every student completed a three-dimensional

understanding test. Prior to the experiment, the objective was to test each student's baseline level in order to guarantee the homogeneity of the two groups. The intervention will be implemented for ten weeks. For the experimental group, each reading material was broken up into manageable portions. The students responded to inferential and critical comprehension questions following each topic. The platform's prompt reactions highlighted the advantages and disadvantages of every student. The instructor kept an eye on the pupils' development and offered extra help as required, especially for the more difficult parts.

The control group studied the identical content from the traditional textbook while completing the comprehension exercises in the book. The primary teaching strategies were group reading and the teacher's straightforward explanations; neither text division nor quick response was used. The eleventh week is the post-test. After the intervention period, the same reading comprehension test was administered to both groups once more. The goal was to assess the progress in literal, inferential, and critical comprehension by comparing the performance of the two groups.

E. Statistical Analysis

The following steps were taken in order to use SPSS software for data analysis:

- Finding each comprehension dimension's mean, standard deviation, maximum, and minimum before and after the intervention.
- Analysing the differences between the two groups using inferential statistics. We used the independent samples t-test to compare the experimental and control groups' performance following the intervention.
- The paired samples t-test was used to compare the pre-test and post-test findings within each group.
- We calculated η^2 (Eta squared) to determine how much each knowledge dimension was impacted by the intervention.
- To ascertain if the data distribution was normal, we employed the Shapiro-Wilk test. To ascertain if the variance was homogeneous, we employed Levene's test.

IV. RESULTS AND DISCUSSION

A. How Reading Comprehension Is Affected by the Digital Chunking Method

The study demonstrated how the approach impacted the literal, inferential, and critical comprehension of the students. The following tables display the differences between the control group utilising traditional methods and the experimental group using the Conker digital platform. The means and standard deviations of the literal comprehension level are presented in Table 1.

TABLE 1
MEANS AND STANDARD DEVIATIONS OF LITERAL COMPREHENSION LEVEL

Group	Pre-test	Post-test	Δ (Difference)	Effect Size (η^2)
Experimental	45.2	78.5	33.3	0.315
Control	44.8	53.2	8.4	0.045

Table 1 shows how the experimental and control groups differ from one another. The experimental group had a significant increase from 45.2 prior to the intervention to 78.5 following it, with a difference of 33.3 points and a considerable effect size ($\eta^2 = 0.315$). The control group had a little increase in their average from 44.8 to 53.2, with a modest effect size ($\eta^2 = 0.045$). Students' working memory was less burdened, and they were able to comprehend texts more easily while employing the digital chunking approach. This result is consistent with Baddeley's (2012) findings, which showed that breaking up knowledge into digestible portions enhances comprehension and reduces cognitive load.

TABLE 2
MEANS AND STANDARD DEVIATIONS OF INFERENTIAL UNDERSTANDING LEVEL

Group	Pre-test	Post-test	Δ (Difference)	Effect Size (η^2)
Experimental	42.7	77.0	34.3	0.362
Control	43.1	55.0	11.9	0.062

Table 2 demonstrates a substantial difference between the experimental and control groups. Following the trial, the experimental group's average increased by 34.3 points (from 42.7 to 77.0), with a significant effect size ($\eta^2 = 0.362$). However, with a small effect size ($\eta^2 = 0.062$), the control group grew somewhat from 43.1 to 55.0. This showed that students who used the digital platform were more adept at making connections between textual passages, deducing hidden meanings, and drawing out novel ideas. The learner was able to concentrate on each idea separately thanks to the digital chunking method, which divides the text into sections. This reduced the cognitive load on working memory and produced quicker and more accurate conclusions.

Wu and Li (2024) found that when it comes to solving inferential problems, students who utilised smart learning platforms outperformed those who used conventional methods. Thus, we may draw the conclusion that digital chunking significantly enhances the ability to infer information and understand the connections between different concepts inside texts.

TABLE 3
MEANS AND STANDARD DEVIATIONS OF CRITICAL UNDERSTANDING LEVEL

Group	Pre-test	Post-test	Δ (Difference)	Effect Size (η^2)
Experimental	40.5	75.0	34.5	0.313
Control	41.0	54.5	13.5	0.050

Table 3 demonstrated that the experimental and control groups differed significantly, particularly when it came to critical understanding, which is often the most challenging kind of comprehension for L1-Arabic learners. The experimental group increased its average from 40.5 before the intervention to 75.0 after the intervention, which means a difference of 34.5 points and a large effect size ($\eta^2 = 0.313$). While the control group only increased from 41.0 to 54.5, with a difference of 13.5 and a weak effect size (0.050). This notable distinction implies that by enabling pupils to examine information rather than merely memorise it, digital technology fosters critical thinking in them. These results corroborate Suharno et al.'s (2025) discovery that incorporating AI into English language instruction fosters students' ability to think critically and evaluate themselves. This outcome made it abundantly evident that the use of digital chunking had an impact on both the text's surface comprehension and its ability to be analysed and evaluated at a level where Arab students typically struggle the most (Alghazo et al., 2023).

Likewise, Qassrawi (2025) emphasised the effectiveness of smart feedback in improving critical thinking and academic analysis among university students. This shows that the digital platform not only facilitates reading but also works on developing higher skills, such as critical thinking, which is an essential element in teaching a language as a second or foreign language. When comparing the results between the digital and traditional curricula, we notice that the differences are significant and clear across all dimensions (literal, inferential, and critical). While traditional education might be partially effective, it does not provide dividing texts in a systematic and organised manner, immediate feedback for each part of the text, precise monitoring of students' progress, and standardising the experience for all students in the classroom. All of this is available on the digital platform, which has significantly improved the students' performance, and the effect sizes (η^2) are large for each dimension. These results are consistent with global and local literature on the role of AI in enhancing learning (e.g., Al-Harbi, 2023; Chen, 2020; Florea & Radu, 2019); the effectiveness of digital chunking strategies in improving comprehension (e.g., Baddeley, 2012; Florea & Radu, 2019); and the importance of immediate feedback in supporting learning and improving academic performance (e.g., Qassrawi, 2025; Suharno et al., 2025).

B. Interaction With Texts and Tracking Progress

The digital platform not only improved understanding but also made it easier to track students' progress and provide immediate feedback.

TABLE 4
AVERAGE NUMBER OF TIMES STUDENTS USED IMMEDIATE FEEDBACK

Group	Weekly Average Usage
Experimental	12 times
Control	3 times

The experimental and control groups differ significantly in Table 4 (12 and 3 times weekly, respectively). This suggests that the digital platform was a full-fledged learning environment that encouraged engagement and continuous task correction, rather than just a reading aid. Usually, traditional schools don't regularly provide this kind of engagement. Al-Jarf's (2021) study, which found that students who utilised digital reading platforms interacted three to four times more frequently than those who used traditional approaches, is likewise in line with these findings. They are also in line with Suwannoppharat's (2020) findings, which showed that since it quickly "retrains" the learner's thinking, instant feedback is a useful strategy for enhancing comprehension.

These results are also in line with McCutchen et al.'s (2009) study, which found that chunking is an interaction organization strategy as well as a comprehension strategy. This means that the more texts are broken up into manageable chunks, the more the student can review, get feedback, and continue without becoming sidetracked or overburdened. The idea that "chunking the text" lessened cognitive load and enabled users to return to the platform more frequently without feeling overwhelmed is supported by the experimental group's higher use of feedback. Additionally, these results align with research on AI and instantaneous feedback (Lin et al., 2023).

Our results are also in line with self-monitoring studies (e.g., Zimmerman, 2002), which found that students who assess their own learning on a regular basis develop more metacognitive awareness, which raises their knowledge level. The learner became "aware of what needed to be corrected," which is in direct accordance with Zimmerman's theoretical model, indicating that the platform enhanced this ability.

TABLE 5
NUMBER OF ACTIVITIES COMPLETED BY EACH STUDENT DURING THE INTERVENTION

Group	Minimum	Mean	Maximum
Experimental	8	15	18
Control	5	10	12

The results of Table 5 indicate that the experimental group used feedback 12 times a week. Feedback is not just for correction; it is a motivator that encourages the student to complete the activity to see the result, and this directly increased the number of completed activities. Digital chunking made the task easy to execute. Since the texts are divided into short parts and the tasks are broken down into small steps, the student does not feel the weight of the task. The mind deals better with small parts, and this directly reflects on the number of completed activities.

Our results are consistent with the results of previous studies on digital learning organisation and studies on organising digital learning (e.g., Farrell, 2022; Faza & Lestari, 2025). All of these studies confirmed that when there is a clear "learning structure", such as a task board or sequential work steps, students achieve 30-50% more.

Our results are also consistent with the results of chunking studies and their impact on achievement (McCutchen et al., 2009), which found that students who use chunking strategies not only understand the text better but also complete more assignments because the tasks are easier for them. The significant difference in the maximum (18 versus 12) is strong evidence for this statement. Our results are consistent with the results of self-regulation studies (e.g., Zimmerman, 2002). Zimmerman explained that tracking progress increases achievement motivation. By providing students with an "achievement percentage", the website motivated them to do as many tasks as they could.

TABLE 6
STUDENTS' RATINGS OF THE DIGITAL PLATFORM (RANGING FROM 1 TO 5)

Criterion	Mean	Standard Deviation
Ease of Use	4.7	0.5
Improvement in Text Comprehension	4.6	0.6
Satisfaction with Feedback	4.8	0.4
Comfort of Learning	4.5	0.7

Students' satisfaction with the digital platform utilised throughout the intervention is displayed in Table 6. It shows that the experience improved student involvement and acceptance of technology in addition to performance and comprehension. High levels of satisfaction are indicated by all values being near to 5/5. According to the results, the platform's ease of use score is 4.7, indicating that it is understandable, has a straightforward interface, and did not cause any confusion for the students. The pupil will pick up new abilities more quickly and keep them without having to waste time learning how to utilise them. Additionally, the findings indicated that text comprehension has improved (4.6). The findings of the aforementioned tables, which demonstrated a notable improvement in literal, inferential, and critical understanding, are in line with this conclusion.

Through self-evaluation, the students verify this, strengthening the validity of the findings. Here, "improving comprehension" refers to three key components: text segmentation techniques, step clarity, and interactive and visual exercises. Instead of drowning in a lengthy book, the brief questions that follow each section give the pupils the impression that they are comprehending the material gradually. Additionally, the data indicated a 4.8 rating for satisfaction with feedback. The highest rating in the table is this one. Given that the students utilised rapid feedback twelve times each week, this seems reasonable. The pupils experienced the outcomes of their work moment by moment as a result of this interaction.

Since it offers prompt correction, an explanation of the error, a link to the relevant material, and a recommendation for improving the response, quick feedback is typically the most motivating factor for students to keep going. Traditional approaches are unable to do this with the same efficiency or speed. According to the findings, learning comfort is 4.5. A crucial component of learning is psychological comfort. Naturally, the student who is at ease, learning at his own speed, and not under any pressure gains more. The digital platform offered a calm setting, the option to try again, and a straightforward, step-by-step process. Students became more independent and had less stress as a result.

TABLE 7
COMPARISON OF OVERALL UNDERSTANDING BEFORE AND AFTER THE INTERVENTION

Overall Comprehension	Pre-test	Post-test	Δ (Difference)	Effect Size (η^2)
Experimental (Digital)	42.8	76.8	34.0	0.330
Control (Traditional)	43.0	54.2	11.2	0.052

The three components of comprehension—literal, inferential, and critical—are combined in Table 7 and categorised as "overall understanding" to give a complete picture of the actual effects of the digital chunking strategy in comparison to the traditional method. For every student in the experimental group, a 34-point increase indicates a significant improvement in reading comprehension skills. Given that the digital platform concentrated on three key areas, this is regarded as a significant improvement:

- **Chunking:** The enormous texts were broken into small portions, which lessened the mental strain on the learners and allowed them to "go through the text step by step."
- **Immediate feedback:** The learner quickly realised his error, allowing him to address and rectify his knowledge on the spot.
- **Organising and automating learning:** The platform offered a straightforward learning sequence: part to question to response to feedback to new part.

This sequential approach established a comfortable learning route, allowing each student to progress at their own rate without the stress of the classroom.

The traditional group improved by just 11.2 points, which is expected given that any training, no matter how traditional, produces outcomes. But the comparison between 34.0 and 11.2 showed the real difference between learning based on artificial intelligence and learning based on traditional explanations. The effect size η^2 also indicates that 0.330 for the experimental group = large effect and 0.052 for the control group = very low effect. This difference is between a "learning leap" and a "slight improvement". These results align with the fundamental principles of the cognitive load theory (Sweller, 1994), which states that chunking reduces cognitive load, the brain processes information easily, and comprehension increases. Our score (34 points) is evidence that the cognitive load has significantly decreased.

According to the working memory theory, dividing the text into organised sections allows working memory to absorb information without a "cognitive overload" (Baddeley, 2012). The significant increase is an indicator that chunking has indeed reorganised the way students receive information. According to Vygotsky's (1978) sociocultural learning theory, the digital platform provides ready and gradual "scaffolding" for learning: chunk, question, guidance, new chunk.

Rasinski (2014) proved that chunking improves both fluency and reading comprehension. The new results ($\Delta = 34$) align with Rasinski's findings, which showed comparable jumps. Hsieh's (2020) study used chunking with ESL students and saw a substantial increase in overall understanding. Our research is in the same direction, but with greater vigour because we combined artificial intelligence and internet platforms. According to Al-Jarf's (2019) research of Arabic learners, Arab learners struggle with long text processing owing to language discrepancies between Arabic and English. Our study proposes chunking as a viable solution to this problem. Chen et al. (2020) found that fast response is the most essential aspect in improving knowledge among digital platform users.

Artificial intelligence studies in education stated that AI provides personalised learning (Mintz et al., 2023), and this is evident in our results because each student learnt at their own pace. Traditional methods will not compete with technology in terms of organisation and feedback. In light of this data, digital platforms are not a "luxury" but a necessity. Digital chunking is especially suitable for L1-Arabic students who get confused by long texts.

V. CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

According to the study, the platform guided the learner step-by-step rather than leaving him lost in the text and relying on his intuition to identify the primary point. Each section would introduce a concept, and each concept would link to the one before it until the learner understands the topic's overall theme. This gives him more self-assurance and makes him feel less intimidated by the messages than he did previously. In addition to providing feedback, AI altered students' reading comprehension. This implies that knowledge of the inferred meaning between lines, the ability to recognise sentence connections, and the ability to recognise semantic signals were all taught indirectly.

Even though teaching these skills to a large number of students is intrinsically difficult, the platform managed to educate each student as if they were in a separate session. Colours, clear divisions, organised learning pathways, and even more visually appealing content presentation made the digital environment itself engaging. Students were less distracted as a consequence, which is typical while reading lengthy texts. For this reason, we found significant differences in post-performance and found that comprehension improved in both numerical values and the way the student interacts with the text. This study conveys a clear message: we can change not only our kids' grades but also their relationship with reading if we make the right investments in educational resources and use strategies that are suitable for our students.

A. Implications

The digital chunking approach has been shown to improve overall comprehension and the three aspects (literal, inferential, and critical); thus, the study suggests that educators, educational institutions, and decision-makers include it in reading instruction. Adopting AI-supported learning systems is also advised, especially those with automatic text chunking, questions after each chunk, instant feedback and progress monitoring, and training instructors to create segmented texts.

B. Recommendations for Future Research

The instructor must understand how to break up the texts into manageable chunks, each with a suitable question and a clear connection between the portions, even in the absence of such a platform. The lengthy and demanding texts in the existing curricula need to be changed since they put Arab pupils under strain. Perhaps the ministry could reword it using a chunk-based approach. The learner is transformed from a passive recipient into a "partner" in their education thanks to the digital platform. Because artificial intelligence produces good outcomes, the research also suggests employing it for textual feedback. Future studies can focus on the impact of digital fragmentation on writing skills: how the strategy works with different age stages and making a comparison between multiple platforms to find the best one.

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