



Reading Comprehension: Advancing Efficient Text Processing through Skimming-Scanning Strategies in English Language Education

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Abstract:

Reading comprehension requires learners to allocate attention strategically when processing English texts efficiently. This study examines how skimming and scanning strategies support comprehension by synthesizing evidence on global meaning construction, specific-information retrieval, and efficient text processing. A qualitative systematic literature review used the PRISMA framework and examined 10 studies published between 2020 and 2024 across different educational contexts. The findings identified three interconnected patterns: skimming supported global meaning construction and initial text processing; scanning strengthened targeted retrieval of specific information; and their complementary use promoted purposeful and efficient reading. The review contributes a strategic perspective that connects selective attention, comprehension, and processing efficiency within English language education. The findings recommend integrating skimming and scanning through explicit modeling, repeated practice, task-oriented activities, and comprehension checks to develop learners' strategic, flexible, and purposeful reading abilities.

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INTRODUCTION

Reading comprehension is a foundational literacy competence that enables learners to access knowledge, evaluate information, participate in education, and respond effectively to complex texts. Efficient text processing is therefore important not only for academic achievement but also for everyday decision-making in information-rich environments (Glaz et al., 2021; Phillips et al., 2022; Tian et al., 2025). Skilled reading requires coordinated processes involving word recognition, strategic processing, and comprehension monitoring. Students who cannot identify relevant information efficiently may struggle to understand texts within limited time (Aizawa et al., 2023; Russak et al., 2021). This challenge becomes more significant as learners encounter longer English materials. Accordingly, developing efficient reading strategies can strengthen access to information and support more effective participation in academic contexts.

Despite the importance of reading comprehension, many English learners struggle to process texts efficiently when they must locate information or quickly grasp the general meaning. Students may read every sentence, translate unfamiliar words, and repeatedly return to sections they have already processed (Bolsunovskaya et al., 2020; Karataş et al., 2020). Such habits can increase cognitive demands and reduce reading efficiency. Effective readers employ strategic processes to establish purposes, identify important information, and construct meaning selectively (Tiba, 2023; Yapp et al., 2023). In practice, however, learners often do not use strategies systematically when approaching unfamiliar English texts. This creates a practical educational problem: students may have vocabulary knowledge yet still struggle to process texts efficiently under time constraints.

Previous scholarship has established that strategic reading contributes to successful comprehension. Fang (2021) and Herlina et al. (2024) highlights the importance of strategic processing and automaticity, while Chopik et al. (2024) emphasizes relationships among vocabulary knowledge, reading fluency, and comprehension. Syifa et al. (2024), and Buragohain et al. (2023) further demonstrates that reading comprehension develops through interactions among linguistic knowledge, cognitive processing, and reader strategies. Thamrin (2023) and Mawarni et al. (2023) distinguish strategies from skills and argue that strategic reading involves purposeful, flexible actions. These studies provide a strong foundation, yet they address reading strategies rather than examining how skimming and scanning jointly support efficient text processing. A gap remains concerning their instructional role in strengthening comprehension while reducing processing demands.

The state of the art repositions skimming and scanning not as speed-reading techniques, but as comprehension strategies that regulate how readers allocate attention to textual information. Skimming enables readers to establish global meaning by identifying headings, keywords, and organizational patterns, whereas scanning directs attention toward specific details required by a reading purpose (Chida et al., 2024; Yusuf et al., 2021). Kovačević et al. (2023) and Shelton et al. (2021) also recognize selective processing as a dimension of strategic reading, but the relationship between selective attention and comprehension efficiency requires investigation. This study systematically examines skimming and scanning as complementary processes within English reading comprehension. Its novelty lies in emphasizing efficient text processing as the central instructional outcome.

How can skimming and scanning strategies advance efficient text processing in English reading comprehension? How do these strategies influence the ability to identify general meaning, locate information, and process content according to reading purposes? How can their complementary use support comprehension without encouraging superficial reading? These questions emerge from the tension between increasingly complex English texts and learners' limited capacity to process every element with equal attention. Although previous studies have established the value of strategic reading, the contribution of skimming and scanning to efficient comprehension remains insufficiently articulated. Addressing these questions is important for developing instruction that balances reading efficiency, purposeful attention, and meaningful understanding.

This study argues that skimming and scanning can improve reading comprehension when used as complementary, purpose-driven strategies rather than

isolated speed-reading techniques. Skimming can help learners construct a framework of meaning, while scanning can guide searches for information relevant to comprehension goals. Their integration may reduce unnecessary processing while preserving understanding of essential content. The study conceptualizes efficient text processing as a strategic pathway linking selective attention with comprehension. By clarifying this relationship, the study offers an instructional perspective for English language education in which learners develop reading efficiency through purposeful processing, enabling them to approach texts more selectively, systematically, effectively, and independently.

RESEARCH METHOD

This study employed a qualitative systematic literature review to examine how skimming and scanning strategies support efficient text processing in English reading comprehension (Zaretsky et al., 2023). A systematic review was selected because it enables researchers to identify, compare, interpret, and synthesize findings from relevant studies according to predefined criteria. The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to promote transparency and consistency throughout the identification, screening, eligibility, and inclusion stages. The analysis focused on studies examining skimming, scanning, reading comprehension, strategic reading, or efficient text processing in English language learning, particularly within university-level educational contexts.

The literature search used academic search platforms and databases with combinations of the keywords "skimming," "scanning," "reading comprehension," "reading strategies," "efficient text processing," "English reading," and "university students." We limited the search to peer-reviewed journal articles published between 2020 and 2024 to capture recent developments in instructional practices. We included articles that examined skimming or scanning as reading strategies, addressed English reading comprehension, reported empirical or theoretically relevant findings, and provided sufficient methodological or analytical information. We excluded articles unrelated to reading comprehension, those focused exclusively on other language skills, duplicates, non-peer-reviewed articles, and those that did not provide sufficient information for qualitative synthesis.

The selection process followed four PRISMA stages: identification, screening, eligibility assessment, and final inclusion (Bi et al., 2023). After the initial search, we screened retrieved records by title and abstract, then assessed potentially relevant studies in full text. We then extracted qualitative data from eligible articles. The extracted information included publication year, research context, participants, instructional focus, use of skimming and scanning, reported effects on reading comprehension, mechanisms of text processing, and major findings. The selected studies were subsequently compared thematically to identify recurring patterns concerning global meaning construction, specific-information retrieval, selective attention, processing efficiency, and comprehension outcomes. A PRISMA flow diagram was used to present the article identification and selection process transparently.

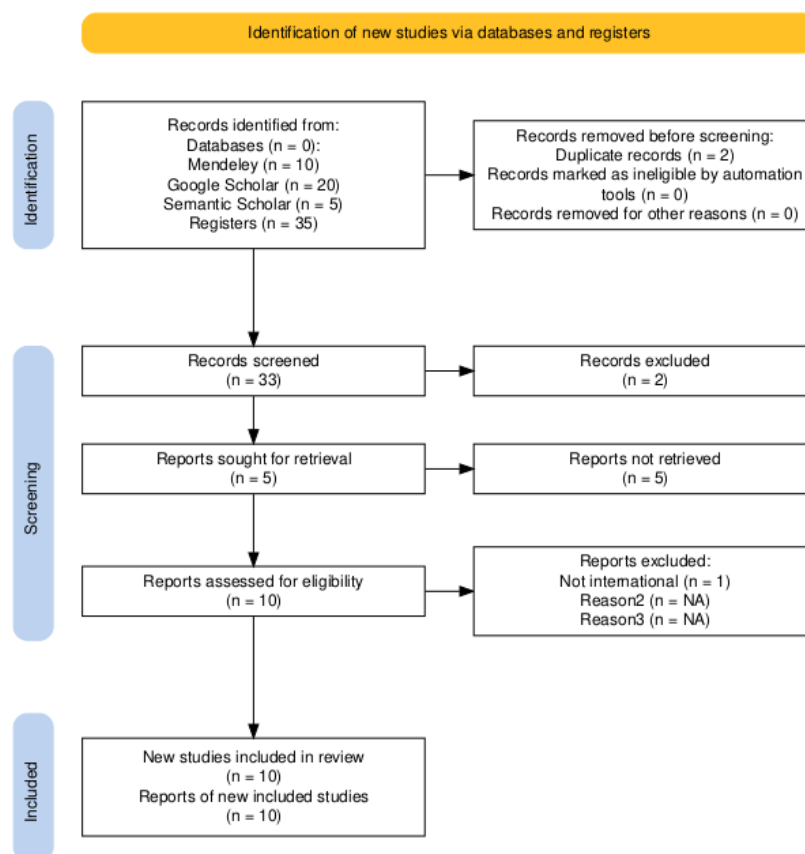


Figure 1. Identification of New Studies Via Databases and Registers

Through this systematic process, the selected studies provided a focused evidence base for understanding the role of skimming and scanning in English reading comprehension. The qualitative synthesis enabled the review to identify consistent patterns, instructional contributions, and remaining gaps concerning efficient text processing. The findings were subsequently organized around the complementary functions of skimming and scanning in supporting purposeful reading, selective attention, information retrieval, and comprehension. This analytical process provided the basis for interpreting how these strategies fit within contemporary English language education.

RESULT AND DISCUSSION

Result

The systematic review identified 10 studies relevant to the use of skimming and scanning in English reading comprehension. The reviewed studies were conducted in Indonesia, Pakistan, and Sudan and employed quantitative, descriptive, experimental, questionnaire-based, and systematic review approaches. The evidence was synthesized according to the functional contribution of the strategies to reading comprehension and efficient text processing. Three major findings emerged from the synthesis: skimming supported global meaning construction and initial text processing, scanning strengthened targeted retrieval of specific information, and the complementary use of skimming and scanning supported purposeful and efficient reading. Table 1 presents the characteristics and main evidence from the included studies.

Table 1. Characteristics and Main Findings of the Included Studies

Type	Authors	Country	Research Objective	Method	Key Findings	Implication
SKIMMING	(Gulo, 2020)	Indonesia	Analyze the advantages of the skimming method in improving reading comprehension among second-semester university students.	Utilization of questionnaires to collect information from 28 students in the Basic Reading II class.	Most students realize that skimming helps predict content, find main ideas, and save time. - Skimming can increase interest in reading, but some students face new vocabulary and accuracy challenges.	Skimming can be a helpful reading strategy, but its success depends on the student's ability to use it appropriately and requires additional practice.
	(Darmawan, 2020)	Indonesia	To investigate the effect of the skimming technique on reading comprehension of fourth-semester students in the English Department of Universitas Muhammadiyah Metro in the 2019/2020 academic year.	The study used purposive sampling and gathered information through observation, interviews, documentation, and surveys.	The skimming technique substantially improved reading comprehension; most students were familiar with the method and obtained satisfactory test scores.	The skimming technique helps students understand the main ideas in the text, and teachers should continue training students in this technique and regularly evaluate their understanding.
	(Yusuf et al., 2021)	Indonesia	To investigate whether skimming and scanning strategies (SST) can enhance English reading comprehension for eleventh-grade students in recount texts, focusing on recognizing main ideas and specifics.	The study used a quantitative experimental approach with a pre-test and a post-test.	Students' reading comprehension scores improved notably, with the average score rising from 45 on the pre-test to 65 on the post-test. Statistical evaluation indicated that the enhancement was significant ($t = 4.7$, $p < 0.05$).	SST may be a practical resource for educators to improve students' reading abilities, although issues like student focus and time management were observed during implementation. Future studies should use larger samples and investigate student responses about SST's effectiveness.
	(Harnila, 2020)	Indonesia	To explore the impact of skimming and scanning strategies on	A preliminary experimental study included 30 students who learned	- There was a noticeable enhancement in students' reading comprehension	Skimming and scanning are helpful techniques for improving reading abilities,

			pre-university learners' reading understanding in an IELTS prep course.	skimming and scanning reading techniques over time, with data gathered from pre-tests and post-tests.	results, with a pre-test average of 3.5 and a post-test average of 5.5. - A correlation coefficient of 0.68 suggests a moderate correlation between employing these techniques and enhancement in reading comprehension.	especially for students preparing for the IELTS exam, and educators encourage their use. Additional studies are recommended that include larger sample sizes and control groups.
	(Fatmawan et al., 2023)	Indonesia	To evaluate how skimming and scanning methods enhance reading comprehension in Indonesian students.	Systematic Literature Review (SLR) is used to gather, evaluate, and synthesize existing skimming and scanning techniques in the literature.	Skimming and scanning are valuable techniques for boosting reading comprehension, especially for speed reading and general reading development among Indonesian learners.	The research indicates that skimming and scanning methods can be incorporated into instructional approaches to enhance students' reading efficiency and understanding. It also advocates for additional studies on their use in different educational settings.
SCANNING	(Zainal Abidin, 2020)	Indonesia	To explore the role of the scanning method in enhancing students' reading understanding.	Experimental research using a pre-test and post-test design assesses reading comprehension before and after implementing the scanning technique.	Using the scanning method greatly enhanced students' reading comprehension scores, demonstrating its efficiency in helping students find specific information quickly.	The results indicate that integrating scanning methods into reading lessons can improve students' reading abilities, making them more proficient readers and improving their text comprehension.
	(Thamrin, 2023)	Indonesia	To assess how effectively the scanning method enhances students' reading comprehension skills.	A pre-experimental research framework featuring a single experimental group; information was gathered using pre-tests	Students' reading comprehension scores increased notably, rising from an average of 4.48 on the pre-test to 9.1 on the post-test.	The research indicates that the scanning technique is valuable for improving students' reading comprehension, highlighting its possibilities for broader use in teaching English.

			and post-tests.	
(Shafqat et al., 2023)	Pakistan	To examine the relationship between information scanning skills in text and impulsive versus reflective learning styles in Pakistani engineering students.	A quantitative method employs a questionnaire to analyze learning styles and a reading assessment to measure scanning abilities with 382 undergraduate engineering students.	The study found a statistically significant positive relationship between impulsive and reflective learning styles and test scores in scanning information, suggesting that learning styles influence scanning abilities. The results indicate that recognizing students' preferred learning styles can guide instructional techniques and policies, ultimately improving reading comprehension and academic success in engineering education.
(Mawarni & Usman, 2023)	Indonesia	To investigate students' views on scanning and skimming strategies in reading comprehension for the TOEFL exam.	Quantitative descriptive research methodology utilizing a questionnaire comprising 12 items, distributed to 30 students from the English department at Serambi Mekkah University.	93.34% of learners concurred that scanning and skimming strategies helped them respond to reading comprehension questions, while 96.67% deemed these methods helpful for the TOEFL exam. The favorable response to scanning and skimming techniques indicates that these approaches should be incorporated into reading education to improve comprehension, especially for standardized assessments such as TOEFL.
(Hassan Ali Eltayb, 2020)	Sudan	To explore the significance and function of teaching literature in improving reading comprehension abilities at the university level.	The study used a descriptive analysis approach, administering a questionnaire to 30 English teachers from different universities in Sudan, and analyzed the results using SPSS.	Instructing literature greatly enhances reading comprehension, refines skimming and scanning methods, and boosts students' interpretation skills. The research emphasizes the importance of including literature in language classes to enhance reading abilities, recommending that teachers create curricula that weave in literary works to improve reading outcomes.

Skimming Supports Global Meaning Construction and Initial Text Processing

The first finding shows that skimming primarily supports initial text processing by helping learners establish general meaning before attending to detailed information. The reviewed evidence indicates that students used skimming to predict content, identify main ideas, recognize important information, and reduce the amount of time required to

process a text. Students also reported greater interest in reading when they could approach texts selectively rather than process every sentence with equal attention. Students also reported improved reading comprehension after using skimming, suggesting that rapid initial processing can coexist with meaningful understanding.

The evidence further shows that skimming effectiveness depends on students' ability to distinguish central information from less relevant textual details. Students reported difficulties with unfamiliar vocabulary and accuracy, indicating that they could not always maintain comprehension when attempting to process texts selectively. Nevertheless, the reviewed studies demonstrate that skimming provides learners with an initial framework for understanding textual content. Its primary contribution is directing attention to main ideas and broader textual meaning. Thus, skimming serves as an initial selective-processing strategy that helps readers establish an overall understanding before engaging with more detailed information.

Scanning Strengthens Targeted Information Retrieval

The second finding shows that scanning primarily supports retrieving specific information from texts. The reviewed studies reported improvements in students' ability to locate required information quickly, particularly when tasks required them to identify specific textual details or answer comprehension questions. Reading comprehension scores increased after scanning instruction in the experimental and pre-experimental studies, and students also reported that the technique helped them respond to reading tasks. The evidence therefore indicates that scanning reduces the need to process irrelevant textual information when the reading purpose is directed toward a particular piece of information.

The reviewed evidence also indicates that scanning performance can vary according to students' individual learning characteristics. The relationship between learning styles and scanning performance suggests that students may differ in how they search for and identify information within texts. Despite these differences, the studies consistently position scanning as a targeted reading process in which attention is directed toward information relevant to a specific purpose. Scanning therefore contributes to efficient text processing by establishing a search target and enabling readers to retrieve relevant information without systematically processing the entire text. Its strongest contribution is therefore associated with selective information retrieval rather than constructing overall textual meaning.

Skimming and Scanning Support Complementary and Purposeful Text Processing

The third finding shows that skimming and scanning serve complementary functions in reading comprehension. The reviewed studies show that skimming is primarily associated with identifying general meaning and main ideas, whereas scanning is associated with locating specific information. When readers use both strategies, they can first establish an overall framework of the text and then focus on the specific information the reading task requires. Evidence from the reviewed studies indicates that their combined use was associated with improved reading comprehension, more efficient responses to reading tasks, and greater usefulness in contexts such as general English reading and standardized examinations.

The combined findings also show that these strategies' effectiveness depends on purposeful application rather than simply increasing reading speed. Students need to

determine whether a task requires overall understanding of the text or retrieval of specific information, then allocate attention accordingly. Challenges involving unfamiliar vocabulary, student focus, time management, and differences in learning characteristics remained evident across the reviewed studies. Nevertheless, the synthesis indicates that skimming and scanning can function as complementary processes: skimming establishes the broader meaning structure, while scanning facilitates targeted retrieval within that structure. Their integration therefore supports a flexible approach to English reading in which attention is allocated selectively while comprehension remains the central objective.

Discussion

The finding that skimming supports global meaning construction aligns with the strategic view of reading proposed by McLeod et al. (2021) and Tuero et al. (2022), who describe reading strategies as deliberate actions used to achieve particular comprehension purposes. The reviewed studies by Fitriani et al. (2021) and Abu et al. (2021) similarly indicate that skimming helps learners predict content, identify main ideas, and process texts within limited time. This convergence suggests that skimming should not be understood merely as rapid reading but as purposeful selective attention. Theoretically, this finding reinforces strategic reading perspectives by positioning skimming as an initial meaning-building process. Practically, teachers can train learners to preview titles, headings, keywords, and topic sentences before detailed reading begins.

The finding that scanning strengthens targeted information retrieval also corresponds with the broader understanding of reading as a purposeful meaning-making activity. Abu et al. (2024) emphasizes that second-language reading involves multiple interacting processes through which readers construct meaning from textual information. Evidence from Hazaea et al. (2022) and Pavani et al. (2024), including improvements in comprehension performance, shows that scanning can direct attention to specific information without requiring complete textual processing. This result extends the theoretical interpretation of reading strategies by showing how selective attention can operate at the information-retrieval level. Exactly, teachers should ask questions that require learners to locate names, dates, definitions, keywords, or factual details, thereby developing efficient retrieval while maintaining comprehension goals.

The complementary relationship between skimming and scanning represents the most important synthesis emerging from the reviewed literature. Rather than treating the strategies as competing techniques, the evidence suggests that they perform different but connected cognitive functions (Goli, 2023; Liu et al., 2024). Skimming establishes a preliminary representation of the text, while scanning then directs attention to information relevant to a particular task. This interpretation aligns with Russak et al. (2021) and Prasetyanto et al. (2024) view that comprehension integrates multiple processing components rather than isolated operations. Theoretically, the finding supports a flexible model of strategic reading in which readers adjust processing according to purpose. Practically, instruction should therefore combine overview activities with targeted information-search tasks instead of teaching skimming and scanning as independent techniques.

Although the overall evidence supports the usefulness of skimming and scanning, the reviewed studies also indicate that their effectiveness is conditional rather than

automatic. Difficulties with unfamiliar vocabulary and reading accuracy, as well as issues with focus, time management, and limited research designs, also emerged. Learner characteristics can influence scanning performance. These findings qualify the assumption that faster processing necessarily produces better comprehension. Theoretically, strategic reading should therefore incorporate reader characteristics, task demands, and textual difficulty. Practically, teachers need graduated training, repeated practice, explicit strategy modeling, and comprehension checks to ensure efficiency does not lead to superficial understanding.

The findings have broader theoretical and practical implications for contemporary English language education. The synthesis indicates that efficient reading is not simply a matter of increasing reading speed but of allocating cognitive attention according to purpose. This interpretation aligns with Afflerbach's view of the purposeful nature of reading strategies and the complexity of second-language comprehension. This review contributes by connecting these perspectives to the complementary functions of skimming and scanning. Practically, English reading instruction can incorporate staged activities in which students first establish global meaning, identify reading purposes, locate relevant information, and finally verify comprehension. Such sequencing may help learners become more strategic, selective, and independent readers across academic reading tasks.

CONCLUSION

This systematic review demonstrates that skimming and scanning are complementary reading strategies that enhance efficient text processing without necessarily reducing comprehension. The key lesson is that effective reading depends on purposeful attention allocation: skimming establishes global meaning, while scanning retrieves task-relevant information. Scientifically, this review offers a strategic perspective linking selective attention, comprehension, and processing efficiency in English language education. Practically, it supports structured strategy instruction and repeated practice. However, the review is limited by heterogeneous study designs, contexts, and learner characteristics. Future research should employ larger samples, stronger experimental designs, and longitudinal investigations.

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CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest associated with the preparation and publication of this article.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

The authors used AI (Grammarly) as a supporting tool during the writing process, particularly to improve language clarity and grammar. The authors remain fully responsible for the content, analysis, and conclusions presented in this article.

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