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Reading Strategies in ELT Classrooms in The Digital Era: A Systematic Literature Review and Pedagogical Synthesis

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ABSTRACT

This systematic literature review examines how cognitive, metacognitive, and social reading strategies are represented in English Language Teaching (ELT) research and how digitally mediated environments reshape their enactment. Following PRISMA 2020, 268 records identified through Scopus were screened against predefined criteria. Ten empirical journal articles published between 2015 and 2025 were retained for mixed deductive-inductive thematic synthesis and methodological appraisal. Cognitive strategies were identified in nine studies (90%), metacognitive strategies in seven (70%), social strategies in five (50%), and explicit digital enactment in four (40%). The evidence therefore shows a continuing emphasis on meaning-construction processes, including inferencing, identifying main ideas, questioning, summarizing, and critical evaluation. Metacognitive regulation became especially visible in sustained, self-access, and feedback-rich settings, whereas social strategies appeared when peer interaction was intentionally designed into reciprocal, team-based, blended, or online reading tasks. Digital environments did not produce a separate family of reading strategies; instead, they recontextualized established strategies through adaptive feedback, progress tracking, multimodal resources, learner choice, and online interaction. Five pedagogical priorities emerged: explicit strategy modelling, interpretive depth, structured peer interaction, sustained engagement and autonomy, and teacher mediation of platform feedback. The review concludes that effective digital-era reading pedagogy requires coordinated cognitive processing, metacognitive regulation, and socially mediated interpretation rather than isolated strategy instruction or technology use alone.

Keywords: *reading strategies; English language teaching; digital reading; metacognition; collaborative reading; systematic literature review*

INTRODUCTION

Reading in English Language Teaching (ELT) is not a passive reception of information but a purposeful process in which learners construct, regulate, and negotiate meaning. A reading strategy is commonly understood as a deliberate and goal-directed action selected to improve comprehension, solve a reading problem, or evaluate understanding (Afflerbach et al., 2008). Within second- and foreign-language education, strategies are frequently grouped into cognitive, metacognitive, and social families. Cognitive strategies operate directly on textual meaning through processes such as predicting, inferencing, identifying main ideas, summarizing, questioning, and evaluating claims. Metacognitive strategies regulate those processes through planning, monitoring, and evaluation. Social strategies involve clarification, explanation, comparison of interpretations, and collaborative meaning-making with other readers (O'Malley & Chamot, 1990; Oxford, 1990). The categories are analytically distinct, but successful reading normally depends on their coordination rather than their isolated use.

The importance of such coordination has increased as reading has moved across print, web-based, platform-mediated, and artificial intelligence (AI)-supported environments. Digital readers do not only decode language and build a situation model; they also decide where to direct attention, which links or sources to follow, how to integrate verbal and visual

information, and whether feedback or information is credible. Coiro and Dobler (2007) showed that online comprehension requires recursive searching, locating, evaluating, and synthesizing processes, while Coiro (2021) conceptualized digital reading as a multidimensional practice shaped by purpose, text, task, technology, and reader agency. These demands do not make established reading strategies obsolete. Instead, they change the conditions under which strategies are selected and evaluated.

Digital environments also alter the organization of feedback and interaction. Extensive-reading platforms can record progress and provide accountability, blended courses can connect self-selected online texts with peer discussion, and adaptive systems can adjust task difficulty and return immediate performance cues. These affordances may strengthen learner autonomy and comprehension monitoring, but they can also narrow attention toward completion rates, quiz scores, or recognition-level answers. Research on reading media further cautions that access to digital text does not automatically guarantee deeper comprehension, because outcomes depend on task design, reader regulation, and the way information is presented (Delgado et al., 2018). Technology therefore functions as a condition of strategy use rather than as a strategy in itself.

Previous reviews provide important but partial accounts of this field. Ali and Razali (2019) synthesized cognitive and metacognitive strategy instruction for ESL/EFL comprehension, but social strategy use and digitally mediated interaction were not central to their analytical framework. Reiber-Kuijpers et al. (2021) reviewed digital reading in a second or foreign language and mapped characteristics of environments, tasks, and readers, while also identifying limited evidence about actual strategy use. Pardede (2022) reviewed online reading strategies through global, problem-solving, and support categories. Together, these studies establish that strategy use remains important in digital reading, yet the literature still lacks an integrated explanation of how cognitive, metacognitive, and social processes relate to one another across conventional, blended, self-access, and AI-supported ELT contexts.

A further limitation concerns the translation of research patterns into pedagogy. Strategy instruction is often presented as a list of procedures - for example, skim, scan, predict, infer, or summarize - even though learners also need to know when, why, and under what conditions a strategy should be used. This conditional knowledge is particularly important in environments where readers control pace, text selection, navigation, and access to feedback. Likewise, peer interaction contributes to comprehension only when learners are required to explain uncertainty, justify interpretations, locate evidence, and revise meaning. A review that integrates strategy families can therefore identify not only which strategies receive research attention, but also which forms of coordination remain underdeveloped.

The present review addresses this need by treating digitality as a pedagogical condition that recontextualizes established reading strategies. It synthesizes empirical ELT studies through a cognitive-metacognitive-social framework and examines the instructional implications arising from their intersections. Three research questions guide the review: (1) What reading-strategy families are most frequently foregrounded in the included ELT studies? (2) How are established reading strategies enacted or recontextualized in digital, blended, platform-based, and AI-supported environments? (3) What pedagogical priorities for ELT teachers emerge from the reviewed evidence?

METHOD

Method This study used a systematic literature review design and followed the PRISMA 2020 reporting framework (Page et al., 2021). The review focused on empirical journal articles that investigated reading strategies, strategic reading instruction, or reading environments in which strategy use was a substantive component of the objectives, intervention, analytical framework, or findings. The review period was limited to 2015-2025 to capture recent

developments while retaining sufficient evidence from the period preceding the rapid expansion of generative AI.

The final database search was updated in November 2025. Scopus was searched using the following string: TITLE-ABS-KEY (("reading strateg*" OR "reading comprehension strateg*" OR "strategic reading" OR "digital reading" OR "online reading") AND ("English language teaching" OR ELT OR EFL OR ESL)). Database filters limited the results to peer-reviewed journal articles, English-language publications, the Social Sciences subject area, open-access availability, and publication years 2015-2025. The search yielded 268 records. Reference lists of the most relevant included articles and prior reviews were also checked to verify bibliographic details and identify potentially missed records; no additional article altered the final eligible corpus.

Studies were eligible when they: (a) examined English reading in an ESL, EFL, or ELT context; (b) reported empirical data; (c) addressed at least one reading-strategy process or an instructional environment in which such processes could be explicitly coded; and (d) provided sufficient methodological and findings information for extraction. Studies were excluded when reading was incidental, the primary outcome concerned another language skill, technology was discussed without substantive analysis of reading processes, or the article was a review rather than a primary empirical study. Conceptual sources were used to frame the review but were not counted in the analytical corpus.

Selection proceeded through identification, title-and-abstract screening, full-text eligibility assessment, and inclusion. Of 268 records, 195 were removed before manual screening because of duplication or failure to meet the database-level publication filters, leaving 73 records. Title-and-abstract screening excluded 53 records. Twenty full texts were assessed, and ten were excluded: two focused primarily on vocabulary, three on pronunciation, three on technology without a substantive reading-strategy component, and two were secondary reviews. Ten empirical studies were retained (Figure 1). Borderline cases were retained until full-text assessment rather than excluded from titles or abstracts alone.

A structured extraction form was used to record author, year, geographical context, educational level, sample, design, reading environment, strategy processes, digital affordances, key findings, pedagogical implications, and reported limitations. Strategy coding was deductive at the first level. Cognitive codes captured operations directly involved in constructing or evaluating meaning; metacognitive codes captured planning, monitoring, regulation, and evaluation; social codes captured explanation, clarification, negotiation, and collaborative interpretation. A fourth category, digital enactment, identified studies in which platform features, online resources, social-network interaction, adaptive feedback, or digital learner control substantially shaped the reading activity.

Within these categories, inductive coding identified recurring mechanisms such as progress monitoring, strategy choice, self-selected texts, peer explanation, critical processing, adaptive task delivery, and teacher mediation. Categories were non-mutually exclusive because a study could foreground several strategy families. As a single-author review, screening, extraction, and coding were conducted by the author. To improve decision consistency, borderline records were retained until full-text review, all study-level codes were checked twice against the operational definitions and supporting passages, and the complete coding matrix is reported in Table 1. The lack of independent double screening and coding is acknowledged as a methodological limitation rather than represented as inter-rater reliability.

Methodological quality was appraised using design-sensitive criteria adapted from the Mixed Methods Appraisal Tool (Hong et al., 2018). The appraisal considered the clarity of research questions, appropriateness of design, adequacy of sampling and instruments, coherence between data and interpretation, and acknowledgement of limitations. Numerical summary scores were not used because MMAT discourages reducing heterogeneous designs to a single

quality score. Instead, methodological strengths and concerns were recorded and used to qualify the synthesis. No study was excluded solely because of a methodological limitation, as the purpose was to map patterns of research attention rather than estimate a pooled intervention effect.

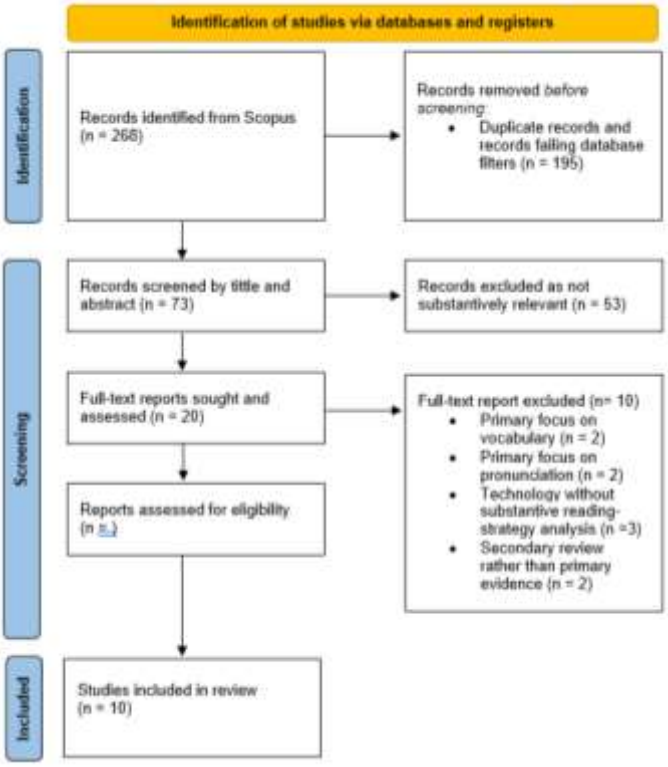


Figure 1. PRISMA 2020 flow diagram for study selection.

RESULT

Ten studies met all eligibility criteria. Table 1 summarizes the evidence base and establishes the study-level foundation for the frequency and thematic results. The corpus represented Iran, Myanmar, Oman, Thailand, Indonesia, China, and Slovakia. Seven studies involved tertiary learners, while three examined secondary-school learners. Four studies explicitly investigated digital, blended, platform-based, or AI-supported reading. The remaining studies examined reciprocal, reflective, project-based, extensive, team-based, or strategy-focused instruction in classroom settings.

Table 1. Contextual, methodological, and analytical profile of the included studies

No.	Study	Context and participants	Design / duration	Reading environment	Codes	Main contribution to synthesis
1	Salari & Hosseini (2019)	Iran; 60 intermediate EFL learners	Experimental comparison	Competitive team-based learning and reciprocal teaching	C, S	Team structures and reciprocal questioning, clarifying, summarizing, and predicting supported comprehension.

No.	Study	Context and participants	Design / duration	Reading environment	Codes	Main contribution to synthesis
2	Rajabpour (2020)	Oman; university EFL learners using M-Reader	Mixed methods; large perception sample	Online extensive-reading platform	M, D	Progress records and quizzes supported accountability and autonomy but could orient reading toward completion.
3	Oo, Magyar, & Habók (2021)	Myanmar; upper-secondary students and teachers	Cluster-randomized trial; validated instruments	Reflection-based reciprocal teaching	C, M, S	Reciprocal strategies combined with teacher reflection produced strong comprehension gains and peer interaction.
4	Rattanasak (2023)	Thailand; EFL undergraduates	Quasi-experimental; 16 weeks	Blended reading with online resources and social-network discussion	C, S, D	Self-selected online texts and peer interaction improved strategy-specific comprehension, especially scanning.
5	Oo, Habók, & Józsa (2023)	Myanmar; 458 Grade 9 students, 5 teachers, 10 observers	Quasi-experimental; 15 weeks	Reflective model with reciprocal, interactive, and questioning approaches	C, M	Strategy-focused teaching became more effective when teachers planned, observed, and revised instruction.
6	Harimurti, Basthomi, & Zen (2023)	Indonesia; first-year university EFL students	Mixed methods; survey and six interviews	Supervised extensive reading	C, M	Problem-solving strategies were preferred over global and support strategies; supervision supported strategic use.

No.	Study	Context and participants	Design / duration	Reading environment	Codes	Main contribution to synthesis
7	Asia, Asdam, & Asdar (2024)	Indonesia; 43 university students	Qualitative survey	Digital literacy environment using e-books, multimedia, Facebook, and WhatsApp	C, M, S, D	Digital resources and discussion spaces supported strategy instruction, participation, and comprehension.
8	Deng & Bin Mohd Said (2025)	China; 123 university learners	Experimental tests and questionnaires	Project-based whole-English-book reading	C, M	Sustained reading, exploration of main ideas, and project work improved reading and autonomous learning.
9	Wangdi & Shimray (2025)	Thailand; 54 university EFL students	Mixed methods; one-month self-access program	AI-powered ReadTheory	C, M, D	Adaptivity and instant feedback supported enjoyment and self-regulation, but limited explanations and multiple-choice dependence constrained depth.
10	Metruk & Kováčová (2025)	Slovakia; 24 Grade 9 EFL learners	Quasi-experimental; one month	Innovative active-reading strategies	C, S	Active reading, discussion, and critical-thinking tasks produced promising but non-significant improvement in a small sample.

Note. C = cognitive strategies; M = metacognitive strategies; S = social strategies; D = digital enactment. Categories are non-mutually exclusive.

Distribution and integration of strategy families (RQ1)

Cognitive strategies were foregrounded in nine of the ten studies (90%), metacognitive strategies in seven (70%), social strategies in five (50%), and digital enactment in four (40%). These frequencies represent the distribution of analytical attention in the included literature;

they do not estimate how often learners use a strategy in all ELT settings. The numerical pattern nevertheless shows that the corpus most consistently examined operations directly involved in constructing and evaluating meaning.

Table 2. Distribution of analytical categories across the included studies

Analytical category	Number of studies	Percentage of corpus
Cognitive strategies	9	90%
Metacognitive strategies	7	70%
Social strategies	5	50%
Digital enactment	4	40%

Note. Percentages do not total 100% because individual studies could receive more than one code.

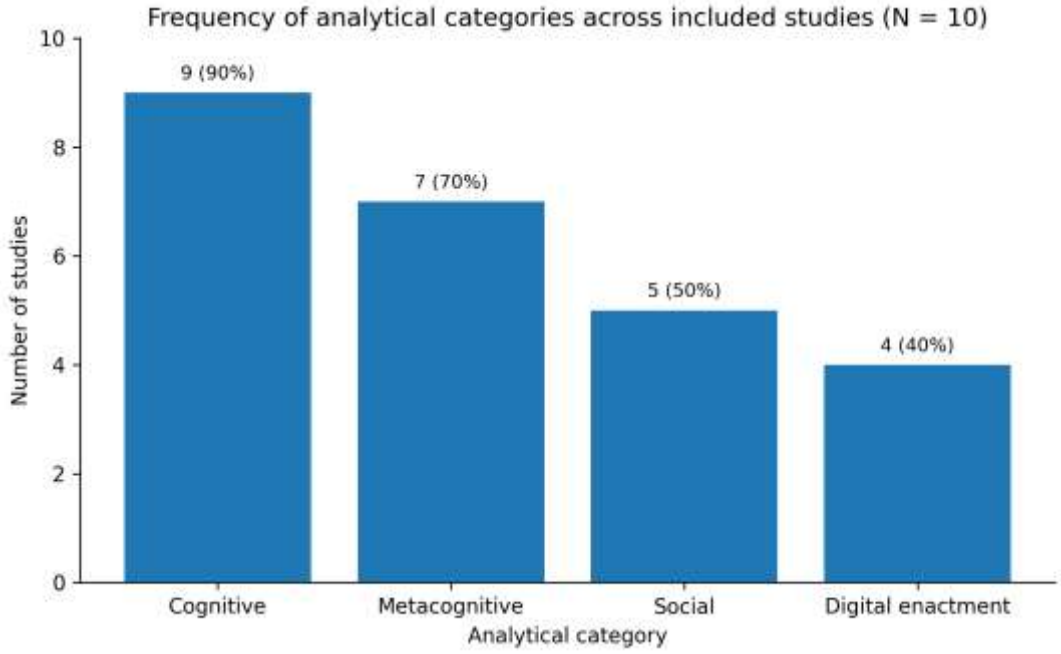


Figure 2. Frequency of analytical categories across the included studies (N = 10).

The intersections were also substantial. Cognitive and metacognitive codes co-occurred in six studies, cognitive and social codes in five, and metacognitive and social codes in two. Two studies integrated all three strategy families. The pattern indicates that the literature increasingly recognizes coordination among strategy processes, but the connection between self-regulation and interaction remains less developed than the connection between cognition and regulation or cognition and collaboration.

Cognitive strategies appeared across the widest range of designs, including reciprocal teaching, team-based learning, strategy instruction, blended reading, whole-book reading, AI-supported practice, and active-reading interventions. Metacognitive strategies were most visible where learners or teachers regulated activity across time: extensive reading, reflective teaching, project work, and adaptive self-access practice. Social strategies appeared when tasks explicitly required peer explanation, reciprocal dialogue, online discussion, or team-based participation. This distribution answers RQ1: cognitive strategies were most frequently foregrounded, metacognitive strategies formed a strong second dimension, and social strategies were meaningful but dependent on deliberate interactional design.

Digital recontextualization of strategy use (RQ2)

Four studies explicitly examined digital enactment. Within this subset, cognitive and metacognitive strategies each appeared in three studies (75%), while social strategies appeared in two (50%). The digital studies did not identify a new strategy family. Instead, they modified strategy conditions through four recurring mechanisms: learner access and choice, feedback and progress visibility, multimodal or online resources, and digitally supported interaction.

Table 3. Strategy enactment within the digitally oriented subset (n = 4)

Digital mechanism	Supporting studies	Observed recontextualization
Access and learner choice	Rajabpour (2020); Rattanasak (2023); Wangdi & Shimray (2025)	Self-selected or adaptive texts increased control over pace, level, and topic.
Feedback and progress visibility	Rajabpour (2020); Wangdi & Shimray (2025)	Quizzes, progress records, and instant feedback made performance visible but could narrow attention to scores or completion.
Multimodal and online resources	Rattanasak (2023); Asia et al. (2024)	E-books, online articles, multimedia, and networked resources expanded the information environment.
Digitally supported interaction	Rattanasak (2023); Asia et al. (2024)	Social-network groups and messaging spaces enabled sharing, explanation, and collaborative interpretation.

The strongest digital pattern concerned the visibility of learner activity. M-Reader and ReadTheory recorded completion, scores, or progress, thereby supporting monitoring and persistence. However, the same features could encourage strategic behavior aimed at passing quizzes rather than explaining or evaluating meaning. Digital feedback therefore supported metacognitive awareness only when learners interpreted the feedback and connected it to a comprehension problem or next strategy.

Online resources also broadened the unit of reading. In the blended and digital-literacy studies, learners selected, shared, and discussed texts across networked spaces. Cognitive strategies such as scanning, inferencing, and locating main ideas operated alongside decisions about relevance, navigation, and source use. Social strategies became visible only where interaction was built into the task; the availability of a platform alone did not produce collaborative comprehension. RQ2 is therefore answered by recontextualization rather than replacement: digital conditions intensified the need to coordinate meaning-making, regulation, and interaction.

Pedagogical priorities reported across studies (RQ3)

Five pedagogical priorities recurred across the corpus. Table 4 reports the number of supporting studies and the instructional focus represented by each category. Categories were derived from findings and implications that were explicit in the included articles; they were not inferred solely from the reviewer's preference.

Table 4. Recurring pedagogical priorities across the included studies

Pedagogical priority	Frequency	Supporting studies
Explicit strategy modelling and metacognitive regulation	7	Oo et al. (2021, 2023); Harimurti et al. (2023); Asia et al. (2024); Deng & Bin Mohd Said (2025); Wangdi & Shimray (2025); Metruk & Kováčová (2025)
Interpretive depth and critical processing	7	Salari & Hosseini (2019); Oo et al. (2021); Rattanasak (2023); Asia et al. (2024); Deng & Bin Mohd Said (2025); Wangdi & Shimray (2025); Metruk & Kováčová (2025)
Structured peer interaction	5	Salari & Hosseini (2019); Oo et al. (2021); Rattanasak (2023); Asia et al. (2024); Metruk & Kováčová (2025)
Sustained engagement, autonomy, and affective support	4	Rajabpour (2020); Harimurti et al. (2023); Deng & Bin Mohd Said (2025); Wangdi & Shimray (2025)
Teacher mediation of digital resources and feedback	4	Rajabpour (2020); Rattanasak (2023); Asia et al. (2024); Wangdi & Shimray (2025)

The most frequently supported priorities were explicit strategy work and interpretive depth. These priorities were closely connected: learners needed not only procedures for approaching a text but also tasks that required evidence, explanation, synthesis, or reconsideration. Structured peer interaction formed a second cluster. The five supporting studies did not treat discussion as an optional post-reading activity; interaction was used to externalize comprehension, distribute strategic roles, or challenge interpretations. Engagement and autonomy were particularly important in extensive, whole-book, and self-access settings, while teacher mediation was central to preventing digital feedback from becoming a substitute for reflective comprehension.

Methodological appraisal and evidence boundaries

The appraisal identified a usable but uneven evidence base. Stronger studies used comparison groups, validated measures, sustained interventions, or multiple data sources. The most common concerns were reliance on self-report, short intervention periods, small or context-specific samples, and limited reporting of qualitative analysis. These limitations did not invalidate the studies, but they reduce the strength of causal and general claims.

Table 5. Methodological strengths and concerns in the included evidence

Study	Methodological strength	Main interpretive concern
Salari & Hosseini (2019)	Experimental comparison and clearly described instructional approaches	Single national context and limited reporting of longer-term transfer
Rajabpour (2020)	Large mixed-method perception dataset	Outcomes centered on perceptions; quiz behavior and comprehension depth were not directly compared

Study	Methodological strength	Main interpretive concern
Oo et al. (2021)	Cluster-randomized design, validated instruments, and effect-size reporting	Context-specific implementation and dependence on trained teachers
Rattanasak (2023)	Comparison groups, 16-week duration, and strategy-specific assessment	Single course and institution; online interaction quality was not analyzed in depth
Oo et al. (2023)	Large sample, multiple measures, observations, and extended intervention	Quasi-experimental allocation and a strong concentration in one educational system
Harimurti et al. (2023)	Mixed survey-interview design and clear strategy categories	Self-report dominance and only six interview participants
Asia et al. (2024)	Direct attention to digital reading practices and interaction	Small qualitative survey and limited procedural detail for analysis
Deng & Bin Mohd Said (2025)	Tests and questionnaires with 123 participants	Short implementation and limited detail about allocation and fidelity
Wangdi & Shimray (2025)	Mixed methods and explicit consideration of platform benefits and limitations	One-month duration, self-reported comprehension, and participation-selection bias
Metruk & Kováčová (2025)	Comparison design and transparent reporting of non-significance	Very small sample, one-month intervention, and low statistical power

The corpus was concentrated in Asian EFL settings and tertiary education, with only two European or Middle Eastern settings outside Asia's dominant representation and three school-level samples. The results should therefore be interpreted as a map of the included research, not as a universal prevalence estimate for strategy use. The quality profile also supports greater confidence in conclusions about recurring mechanisms than in claims about the comparative effectiveness of particular tools or methods.

DISCUSSION

This review examined the distribution of cognitive, metacognitive, and social reading strategies, their enactment in digitally mediated environments, and their implications for ELT pedagogy. Three conclusions organize the discussion. First, cognitive processing remains the most visible dimension of reading research, but it is rarely sufficient by itself. Second, metacognitive regulation becomes especially important when reading is sustained, self-directed, or shaped by automated feedback. Third, social strategy use is not an automatic consequence of either classroom grouping or technology; it emerges when interaction is designed as part of comprehension. Digitality therefore changes the ecology of strategic reading without replacing its established foundations.

Cognitive prominence and the limits of isolated strategy instruction

The 90% representation of cognitive strategies confirms that ELT reading research continues to prioritize operations closely associated with comprehension performance. Finding main ideas, scanning, inferencing, questioning, clarifying, summarizing, and evaluating are

visible in tests, lesson procedures, and learner products. This result is consistent with Ali and Razali's (2019) observation that cognitive and metacognitive strategies dominate reading-strategy instruction. The present review extends that conclusion across team-based, reflective, blended, extensive, whole-book, and AI-supported contexts.

Frequency in the literature, however, should not be equated with intrinsic pedagogical importance. Cognitive strategies are easier to operationalize because they can be connected to observable answers and task outcomes. A learner's decision to reread, change pace, reject an interpretation, or seek peer clarification is more difficult to capture. The dominance of cognitive codes may therefore reflect the visibility of research constructs as much as the reality of learners' reading activity.

The included interventions also show why procedural knowledge alone is inadequate. Reciprocal teaching does not succeed merely because learners know the labels predict, question, clarify, and summarize. It succeeds when the procedures are connected to a comprehension purpose, distributed through interaction, and monitored by learners and teachers. Similarly, active-reading techniques can produce promising movement without statistical significance when interventions are brief or learners have insufficient time to internalize conditional knowledge. Strategy instruction should therefore move from 'how to perform a strategy' toward 'how to choose, coordinate, and evaluate a strategy in relation to a reading problem.

Metacognition as the coordinating dimension

Metacognitive strategies appeared in 70% of the corpus and in three of the four digital studies. Their distribution shows that planning, monitoring, and evaluation are not advanced additions to basic comprehension; they coordinate the use of cognitive and social resources. A learner may infer meaning, but metacognition determines whether the inference is plausible, whether another source is needed, and whether the reading goal has been achieved. This coordinating role becomes more visible when learners control pace, text selection, repetition, and response timing.

The extensive-reading and whole-book studies illustrate regulation over time. Progress must be maintained across multiple texts or a complete book, and learners need to manage difficulty, motivation, and comprehension breakdowns. Harimurti et al. (2023) found a preference for problem-solving strategies, which indicates that learners value tactics that respond to immediate comprehension difficulty. Deng and Bin Mohd Said (2025) showed that sustained, project-based reading can support autonomy when learners explore main ideas and authorial intentions rather than simply finish pages.

Digital platforms intensify this issue by making some indicators of progress highly visible. M-Reader and ReadTheory can show completion, quiz performance, and level progression. These features can scaffold monitoring, but they may also redefine comprehension as what the platform can count. Wangdi and Shimray (2025) explicitly reported limited explanations for incorrect answers and over-reliance on multiple-choice tasks. When learners monitor only scores, regulation becomes instrumental: behavior is adjusted to satisfy the system rather than to improve interpretation. Effective platform use therefore requires prompts that reconnect feedback to reasoning, evidence, and strategy choice.

Teacher reflection represents a parallel form of metacognitive regulation. The Myanmar studies show that teachers' planning, observation, and revision can strengthen strategy-focused instruction. Reflective teaching operates as pedagogical metacognition because teachers evaluate not only whether answers are correct, but also which task features elicit strategy use, where learners encounter breakdowns, and how instruction should change. Digital-era reading pedagogy consequently requires regulation at two levels: learners regulate comprehension, while teachers regulate the conditions that make strategic reading possible.

Social strategies and the design of collaborative comprehension

Social strategies appeared in half of the studies, a larger representation than in the original version of the corpus but still less than cognitive and metacognitive processes. The pattern is instructional rather than technological. Social strategies were present in competitive team-based learning, reciprocal teaching, blended social-network discussion, digital literacy groups, and active-reading lessons. They were absent from platform studies that emphasized individual progress and automated feedback.

This distinction matters because reading is often assessed individually even when meaning is socially developed. In reciprocal and team-based designs, learners explain, question, clarify, and summarize for one another. Such interaction makes tacit comprehension processes public. A learner who must justify an inference or identify evidence for a peer becomes more aware of both the text and the strategy used. Social interaction can therefore contribute to cognitive elaboration and metacognitive awareness, not merely participation or motivation.

Nevertheless, group work should not be treated as evidence of social strategy use by itself. Productive interaction requires an epistemic purpose: learners need to compare evidence, diagnose misunderstanding, challenge a claim, or revise a group interpretation. Rattanasak's (2023) and Asia et al.'s (2024) digital discussion spaces demonstrate that online interaction becomes relevant when reading materials are shared and discussed within an instructional structure. A messaging application or social-network group is only an affordance; its pedagogical value depends on prompts, roles, and expectations for evidence-based response.

The relatively limited metacognitive-social intersection is therefore an important gap. Only two studies centrally combined regulation and interaction. Future research should examine socially mediated metacognition: how explaining confusion, comparing strategy choices, or evaluating a joint interpretation helps learners monitor their own understanding. This focus would move collaboration beyond participation counts and toward the quality of strategic dialogue.

Digital environments as a recontextualization of established strategies

The evidence for RQ2 supports a recontextualization account. Digital environments changed access, feedback, text form, and interaction, but the underlying strategy processes remained recognizable. Learners still predicted, inferred, located main ideas, scanned, evaluated, monitored, and sought clarification. What changed was the information environment in which these actions occurred.

First, digital access expanded learner choice. Self-selected online articles and adaptive text assignment allowed learners to encounter topics and levels that differed from a fixed textbook sequence. Choice can strengthen relevance and autonomy, yet it also increases the need for planning and evaluation. Learners must decide whether a text serves the reading purpose and whether difficulty is productive or merely overwhelming.

Second, digital systems increased feedback speed and visibility. Immediate feedback can shorten the time between error and response, while progress records can sustain participation. However, feedback becomes instructionally weak when it identifies only correctness without revealing reasoning. Teacher mediation is needed to ask why an answer failed, what textual evidence was overlooked, and which strategy should be tried next. This interpretation aligns with the studies' own cautions about quiz orientation, minimal explanations, and the need for monitoring.

Third, digital and blended environments expanded the reading object beyond a stable linear text. Online articles, e-books, multimedia, and discussion threads require readers to allocate attention across modes and locations. The review did not find enough direct evidence to quantify hyperlink navigation or credibility evaluation, so these should not be claimed as established outcomes of the included corpus. They remain important directions identified by

broader digital-reading scholarship (Coiro, 2021; Reiber-Kuijpers et al., 2021). Future studies should use screen recordings, clickstream data, think-aloud protocols, and source-evaluation tasks to capture these processes directly.

Fourth, digital environments redistributed agency among learner, teacher, peer, and platform. ReadTheory adjusted difficulty and provided feedback; M-Reader recorded completion; social-network spaces supported peer exchange; teachers monitored and redesigned tasks. Digital reading is therefore not simply an individual learner using a device. It is a system in which human and technological actors shape what receives attention and what counts as progress. The pedagogical issue is not whether technology is present, but whether the system sustains deep, flexible, and accountable meaning-making.

Pedagogical implications: from strategy lists to strategic task design

The five priorities identified for RQ3 suggest that ELT teachers should design reading tasks around strategic decisions rather than isolated techniques. The first requirement is explicit modelling. Teachers can demonstrate not only what a strategy looks like but also the cues that make it appropriate. A think-aloud can show why a reader shifts from scanning to close reading, how an inference is checked, or when a source requires verification. Learners then need guided opportunities to explain their choices before strategy use becomes independent.

The second requirement is interpretive depth. Digital platforms and conventional worksheets can both produce shallow reading when answers depend mainly on recognition. Tasks should require learners to justify claims with evidence, compare interpretations, synthesize information, or explain why feedback is convincing or incomplete. These activities turn comprehension into visible reasoning and reduce the risk that a score is treated as equivalent to understanding.

The third requirement is structured interaction. Roles such as summarizer, evidence finder, questioner, and interpretation challenger can distribute cognitive work and prevent discussion from becoming unfocused. Online responses can require a claim, textual evidence, and a revision after peer feedback. In this way, social strategy use becomes part of reading rather than an activity that occurs only after reading.

The fourth requirement is support for engagement and autonomy. Sustained reading requires manageable difficulty, meaningful choice, progress that is visible without becoming punitive, and opportunities to recover from misunderstanding. Enjoyment and confidence are not secondary outcomes; they influence whether learners persist, monitor confusion, and seek assistance. Self-access tools should therefore be connected to realistic goals and reflective records rather than used as unmonitored homework.

The fifth requirement is teacher mediation of digital resources and feedback. Teachers should help learners interpret automated responses, recognize platform limitations, and connect scores to strategy use. A simple reflective cycle can include four questions: What did I understand? Where did comprehension break down? What evidence or feedback helped? What strategy will I use next? Repeated use of this cycle links platform data with metacognitive judgment and provides teachers with information for instructional adjustment.

Theoretical contribution and limitations

The main theoretical contribution of the review is an integrated account of strategic reading. Cognitive strategies construct and evaluate meaning; metacognitive strategies regulate their selection and effectiveness; social strategies externalize, challenge, and refine interpretations. Digital environments alter the distribution of control and feedback across these processes. The framework therefore avoids two reductions: treating reading strategies as a checklist of individual actions and treating digital reading as a wholly new form that replaces established theory.

Several limitations define the scope of the conclusions. The review used one principal database and restricted inclusion to open-access English-language journal articles, which may have excluded relevant subscription-based, non-English, or non-journal research. The final corpus was small and concentrated in Asian tertiary EFL contexts. Strategy codes depended partly on the concepts foregrounded by original authors, so some processes may have been present but underreported. The review also combined intervention, perception, and mixed-method studies; consequently, frequencies represent research attention rather than comparable effect estimates.

The inclusion of only ten studies makes descriptive patterns useful for mapping but unsuitable for strong population claims. In particular, the findings do not establish that cognitive strategies are universally used more often by learners or that a particular digital platform is more effective than another. They support a more bounded conclusion: across the included evidence, reading outcomes and learner experiences were strongest when meaning construction, regulation, interaction, and teacher mediation were aligned.

CONCLUSSION

This systematic literature review synthesized ten empirical studies of reading strategies in ELT published between 2015 and 2025. Cognitive strategies were the most frequently foregrounded category, followed by metacognitive and social strategies. Their intersections show that strategic reading is better understood as coordinated activity than as a set of separate techniques. Cognitive processes construct and evaluate meaning, metacognitive processes regulate strategy choice and progress, and social processes enable explanation, clarification, and revision through interaction.

Digital environments did not generate a distinct strategy family. They recontextualized established strategies by increasing learner choice, making feedback and progress more visible, expanding access to online and multimodal resources, and enabling networked interaction. These affordances were pedagogically productive when they supported reasoning and reflection, but they could encourage superficial completion when success was reduced to quiz scores or platform progression.

For ELT practice, the evidence supports five priorities: explicit modelling of conditional strategy use, tasks requiring interpretive depth, structured peer interaction, support for sustained engagement and autonomy, and teacher mediation of digital feedback. Future research should investigate authentic navigation, credibility evaluation, and socially mediated metacognition through process-sensitive data such as screen recordings, interaction logs, stimulated recall, and think-aloud protocols. Research should also include more school-level learners and geographically diverse contexts. The central implication is that digital-era reading pedagogy should not replace established reading strategies with tools; it should redesign the conditions in which learners select, coordinate, explain, and evaluate strategies for meaningful comprehension.

REFERENCES

Afflerbach, P., Pearson, P. D., & Paris, S. G. (2008). Clarifying differences between reading skills and reading strategies. *The Reading Teacher*, *61*(5), 364–373. https://doi.org/10.1598/RT.61.5.1

Ali, A. M., & Razali, A. B. (2019). A review of studies on cognitive and metacognitive reading strategies in teaching reading comprehension for ESL/EFL learners. *English Language Teaching*, *12*(6), 94. https://doi.org/10.5539/elt.v12n6p94

Asia, M., Asdam, M., & Asdar, A. (2024). Investigating students' reading strategies and reading comprehension through digital literacy environment. *AL-ISHLAH: Jurnal Pendidikan*, *16*(3), 3370–3379. https://doi.org/10.35445/alishlah.v16i3.5510

Coiro, J. (2021). Toward a multifaceted heuristic of digital reading to inform assessment, research, practice, and policy. *Reading Research Quarterly*, *56*(1), 9–31. https://doi.org/10.1002/rrq.302

Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the Internet. *Reading Research Quarterly*, *42*(2), 214–257. https://doi.org/10.1598/RRQ.42.2.2

Delgado, P., Vargas, C., Ackerman, R., & Salmerón, L. (2018). Don't throw away your printed books: A meta-analysis on the effects of reading media on reading comprehension. *Educational Research Review*, *25*, 23–38. https://doi.org/10.1016/j.edurev.2018.09.003

Deng, M., & Bin Mohd Said, N. E. (2025). Research on the effects of whole English book reading in ELT for developing learners' reading and autonomous learning ability. *Forum for Linguistic Studies*, *7*(1). https://doi.org/10.30564/fls.v7i1.6867

Harimurti, K. F., Basthomi, Y., & Zen, E. L. (2023). EFL students' preferences on metacognitive reading strategies within an extensive reading program. *Journal on English as a Foreign Language*, *13*(1), 171–194. https://doi.org/10.23971/jefl.v13i1.5640

Hong, Q. N., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M.-P., Griffiths, F., Nicolau, B., O'Cathain, A., Rousseau, M.-C., Vedel, I., & Pluye, P. (2018). The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. *Education for Information*, *34*(4), 285–291. https://doi.org/10.3233/EFI-180221

Metruk, R., and Kováčová, P. (2025). The Impact of Innovative Reading Comprehension Strategies on Reading Literacy of Slovak EFL Learners. *International Journal of Instruction*, *18*(1), 667–678. https://doi.org/10.29333/iji.2025.18137a

O'Malley, J. M., & Chamot, A. U. (1990). *Learning Strategies in Second Language Acquisition* (1st ed.). Cambridge University Press. https://doi.org/10.1017/CBO9781139524490

Oo, T. Z., Habók, A., & Józsa, K. (2023). Qualifying method-centered teaching approaches through the reflective teaching model for reading comprehension. *Education Sciences*, *13*(5), 473. https://doi.org/10.3390/educsci13050473

Oo, T. Z., Magyar, A., & Habók, A. (2021). Effectiveness of the reflection-based reciprocal teaching approach for reading comprehension achievement in upper secondary school in Myanmar. *Asia Pacific Education Review*, *22*(4), 675–698. https://doi.org/10.1007/s12564-021-09707-8

Oxford, R. L. (1990). *Language learning strategies: What every teacher should know* (Nachdr.). Heinle & Heinle.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, n71. https://doi.org/10.1136/bmj.n71

Pardede, P. (2022). Online reading strategies in EFL: A review. *JET (Journal of English Teaching)*, *8*(2), 329–339. https://doi.org/10.33541/jet.v8i2.4130

Rajabpour, A. (2020). Students' perceptions of m-reader. *TEFLIN Journal - A Publication on the Teaching and Learning of English*, *31*(2), 277. https://doi.org/10.15639/teflinjournal.v31i2/277-301

Rattanasak, S. (2023). The interplay between the internet-based reading resources and learner-to-learner interactions in blended language learning. *Online Journal of Communication and Media Technologies*, *13*(2), e202321. https://doi.org/10.30935/ojcmt/13050

Reiber-Kuijpers, M., Kral, M., & Meijer, P. (2021). Digital reading in a second or foreign language: A systematic literature review. *Computers & Education*, *163*, 104115. https://doi.org/10.1016/j.compedu.2020.104115

Salari, F., & Hosseini, S. M. H. (2019). Competitive team-based learning vs. Reciprocal teaching of reading: A study in reading classes. *Journal of Language Teaching and Research*, *10*(3), 489. https://doi.org/10.17507/jltr.1003.12

Wangdi, T., & Shimray, R. (2025). AI-powered readtheory as a self-access learning platform to enhance EFL learners' reading enjoyment and comprehension skills: A posthumanist perspective. *Studies in Self-Access Learning Journal*, *16*(2), 437–460. https://doi.org/10.37237/160209