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The effects of cognitive reading strategy instruction on first-year students' reading motivation and self-efficacy at Addis Ababa University

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Abstract

This study investigated the effects of cognitive reading strategy instruction on first-year EFL students' reading motivation and self-efficacy at Addis Ababa University. A quasi-experimental pre-test–post-test design was employed involving two intact groups: an experimental group (N = 48) and a control group (N = 46). The experimental group received explicit instruction in cognitive reading strategies such as predicting, summarizing, inferring, and analyzing texts, while the control group followed traditional reading instruction. Data were collected using a reading motivation questionnaire and a self-efficacy scale adapted from the Motivated Strategies for Learning Questionnaire Quantitative data were analyzed using descriptive and inferential statistics. The findings revealed that cognitive reading strategy instruction had a selective but meaningful impact on students' motivational and affective outcomes. Intrinsic motivation improved notably, particularly curiosity (d= 0.72, p < .001), indicating increased interest and engagement in reading activities. Challenge-related self-efficacy also showed a moderate and statistically significant improvement (d = 0.55, p < .001), suggesting increased confidence in handling difficult reading tasks. However, other dimensions of intrinsic motivation (importance and involvement), extrinsic motivation (competition, grades, and compliance), and overall self-efficacy showed only small or non-significant changes. In contrast, the control group exhibited minimal or negligible changes across all measured variables, indicating that traditional instruction had limited influence on students' motivational development and self-beliefs over the study period. Overall, the study concludes that cognitive reading strategy instruction is effective in enhancing students' intrinsic motivation and task-specific confidence, particularly curiosity and willingness to engage with challenging tasks. However, its impact on broader self-efficacy and extrinsic motivation is limited. The study recommends integrating cognitive strategy instruction with explicit motivational and metacognitive support to foster more comprehensive development of learners' reading motivation and self-efficacy.

Keywords Cognitive reading strategies; reading motivation; self-efficacy; EFL learners; Addis Ababa University

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1. Introduction

Reading is a complex cognitive process that requires learners to actively construct meaning from written texts rather than simply decode words and sentences. It involves the interaction of linguistic knowledge, background knowledge, cognitive skills, and metacognitive awareness. In English, reading is one of the most important language skills because it provides learners with access to academic knowledge, cultural information, and opportunities for language development. However, many EFL learners experience difficulties in comprehending English texts due to limited vocabulary, insufficient grammatical knowledge, unfamiliar text structures, and limited exposure to authentic English materials. These challenges often prevent learners from becoming independent and effective readers.

To overcome these difficulties, researchers have emphasized the importance of reading strategies as essential tools for successful comprehension. Reading strategies are deliberate, goal-oriented actions that readers use to facilitate understanding before, during, and after reading (Par, 2020). These strategies enable learners to activate prior knowledge, predict text content, identify key ideas, monitor their comprehension, infer the meanings of unfamiliar words, summarize information, and evaluate their understanding. Strategic readers are aware of their reading purpose and are able to modify their approaches depending on the complexity of the text and the demands of the reading task (Wood & Connelly, 2009). Consequently, the effective use of reading strategies contributes not only to improved comprehension but also to the development of learner autonomy and confidence.

A substantial body of research has demonstrated that explicit reading strategy instruction significantly improves learners' reading comprehension, motivation, and engagement (Gu, 2019; Chinpakdee, 2021). Explicit instruction involves systematically teaching learners what a particular strategy is (declarative knowledge), how to use it effectively (procedural knowledge), and when and why it should be applied in different reading situations (conditional knowledge) (Chinpakdee, 2021). Through teacher modeling, guided practice, collaborative learning, and independent application, learners gradually develop the ability to regulate their own reading processes and become more strategic readers.

Empirical studies conducted in various EFL contexts provide strong evidence supporting the effectiveness of strategy-based reading instruction. For example, Salataci and Akyel (2002) found that explicit strategy instruction enhanced learners' reading comprehension and increased their metacognitive awareness. Similarly, Zhang (2008) reported that learners who received systematic strategy training demonstrated greater comprehension gains than those who received traditional reading instruction. Aghaie and Zhang (2012) further confirmed that integrating cognitive and metacognitive reading strategies into classroom instruction significantly improved learners' ability to understand academic texts and regulate their own learning. These findings suggest that reading strategy instruction is an effective pedagogical approach for improving both reading performance and self-regulated learning.

1.1. Cognitive strategies

Among reading strategies, cognitive strategies are central because they directly involve mental processes such as predicting, summarizing, inferring, and analyzing texts (Barnett, 2002; Grabe, 2009). These strategies enable learners to construct meaning actively and effectively (Zhang, 2008; Grabe, 2009). However, in Ethiopia, reading strategy instruction remains limited. Studies show that teachers often rely on traditional methods with minimal focus on strategy instruction (Bogale, 2018; Ermias, 2019; Getnet, 2021). This lack of instruction contributes to students' poor reading comprehension.

1.2. Affective factors

Affective factors such as motivation and self-efficacy are also critical in reading development. Reading motivation refers to learners' internal and external drives to engage in reading (Guthrie & Wigfield, 2000; Dörnyei, 2005). Self-efficacy refers to learners' beliefs about their ability to perform reading tasks successfully (Bandura, 1986). Students with high motivation and self-efficacy are more likely to use strategies effectively and achieve better comprehension (Wigfield & Guthrie, 1997; Wang, 2011).

Despite the benefits of strategy instruction, research findings remain inconsistent. Some studies report significant improvements in comprehension and strategy use (Andreassen & Bråten, 2010; Dabarera et al., 2014), while others show limited effects on motivation and self-efficacy (Antoniou & Souvignier, 2007; Shinozuka et al., 2017). Similar inconsistencies are reported in Ethiopia (Dawit, 2014; Alene, 2021; Yenus, 2018; Adugnaw, 2024), suggesting contextual and methodological differences.

Although cognitive reading strategy instruction has been widely recognized as beneficial, its implementation in Ethiopian universities remains limited. Many instructors still rely on traditional approaches that do not explicitly teach reading strategies. Studies in Ethiopia show inconsistent results. For example, Yenus (2018) found no significant difference between implicit and explicit instruction, while Adugnaw (2024) reported only slight improvements after strategy training. International studies also report mixed results regarding motivation and self-efficacy outcomes (Antoniou & Souvignier, 2007; Shinozuka et al., 2017).

1.3. Literature gaps

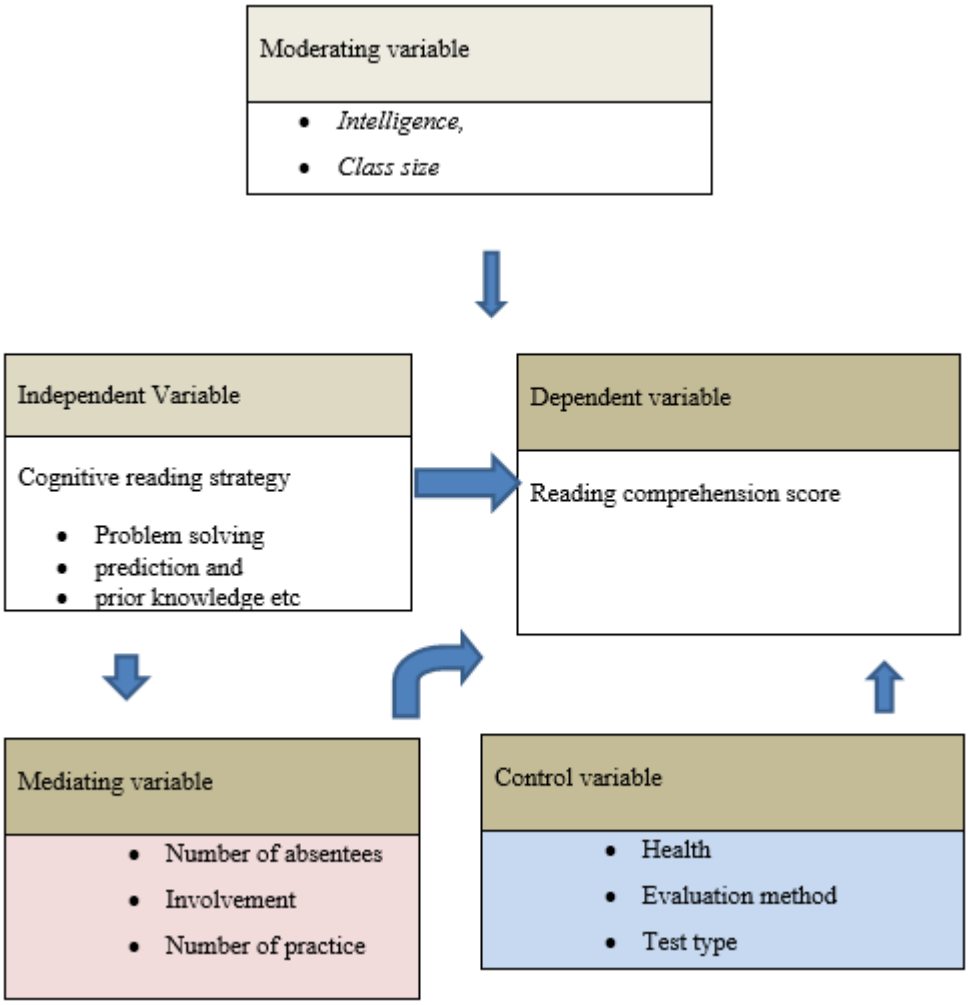
A major gap in the literature is the limited focus on affective variables. Most Ethiopian studies emphasize reading comprehension while neglecting motivation and self-efficacy (Dawit, 2014; Alene, 2021). However, research shows that these affective factors are essential for sustained learning (Guthrie & Wigfield, 2000; Dörnyei, 2005).

Additionally, cognitive reading strategies themselves are underexplored despite their importance in meaning construction (Grabe, 2009; Aghaie & Zhang, 2012). Few studies also examine students' perceptions or actual classroom practices (Gu, 2019; Chinpakdee, 2021). Furthermore, many

studies rely only on tests and questionnaires, with limited classroom observation (Dörnyei, 2007; Cohen et al., 2018).

Therefore, there is a need for a comprehensive study that examines how cognitive reading strategy instruction affects reading motivation and self-efficacy in an Ethiopian university context.

1.4. Conceptual Framework



The conceptual framework illustrates the relationship between variables in this study, which aims to examine the effect of cognitive reading strategy training on students' reading comprehension performance. Accordingly, cognitive reading strategy is treated as the independent variable, while reading comprehension performance is the dependent variable, as represented by boxes and arrows.

The study also considers moderating, mediating, and controlling variables. Moderating variables influence the strength or direction of the relationship between the independent and dependent variables. These may include stable characteristics such as gender, age, intelligence, and environmental factors like school type and location (Aguinis, 2004; MacKinnon, 2008). In this study, intelligence is controlled by excluding extreme scores, and samples are selected from classes with similar sizes.

Mediating variables explain how the independent variable affects the dependent variable. Factors such as absenteeism, practice frequency, and participation during training may influence the outcomes, and thus will be closely monitored. A mediator exists in a causal sequence where the independent variable affects the mediator, which in turn affects the dependent variable (MacKinnon, 2008). The key difference is that mediating variables explain the causal process, whereas moderating variables affect the strength or direction of the relationship.

Finally, controlling variables are maintained constant to prevent interference with the results. In this study, factors such as participants' health, test administration procedures, and types of tests are carefully controlled.

1.5. Specific Objectives of this study are

1) To examine the effect of cognitive reading strategy instruction on students' reading motivation.
2) To examine the effect of cognitive reading strategy instruction on students' reading self-efficacy.

2. Methodology

This study employed a quasi-experimental pre-test–post-test design. The choice of this design was guided by the nature of the research objectives, which aimed to examine the effects of cognitive reading strategy instruction on students' reading motivation and self-efficacy in a natural classroom setting.

A quasi-experimental design is considered appropriate in educational research where random assignment of participants is not feasible due to institutional constraints (Creswell, 2014; Dornyei, 2007). In this study, intact classes were used as experimental and control groups, which allowed the researcher to maintain the natural structure of the classroom while still investigating cause-and-effect relationships between the intervention and learner outcomes.

The experimental group received explicit instruction in cognitive reading strategies, while the control group was taught using traditional instructional approaches. The design included both pre-tests and post-tests to measure changes in students' reading motivation and self-efficacy over time. The participants of the study consisted of two intact sections of first-year English language students enrolled in the Communicative English Skills II course at Addis Ababa University.

From the available population, two sections were selected: one assigned as the experimental group (N = 48) and the other as the control group (N = 46). The selection of intact classes was necessary to preserve the natural classroom structure and avoid disruption of institutional teaching arrangements. The same experienced instructor, with over 12 years of teaching experience, taught both groups. This helped control for teacher-related variability and ensured consistency in instructional delivery.

The study used non-probability sampling (intact group sampling) to select participants. Two intact sections were purposively chosen and then assigned to experimental and control conditions by lottery method to reduce

selection bias. The sample size (N = 94) was considered adequate for quasi-experimental research in educational settings, allowing meaningful statistical comparison between groups.

The Reading Motivation Questionnaire (RMQ) was adapted from Wigfield and Guthrie (1997). It included 43 Likert-scale items measuring intrinsic and extrinsic motivation. The instrument captured dimensions such as curiosity, involvement, reading for grades, and competition. The RMQ was administered both before and after the intervention to measure changes in students' motivation levels. Reliability analysis showed acceptable internal consistency ($\alpha \approx 0.80$), indicating strong measurement reliability.

The self-efficacy instrument was adapted from the Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich et al. (1993). It consisted of 14 items assessing students' confidence in performing reading tasks of varying difficulty.

Students rated their confidence on a six-point Likert scale. The instrument demonstrated strong reliability ($\alpha = 0.83$ pre-test; $\alpha = 0.87$ post-test), indicating consistency in measurement across time. Data collection was conducted in three phases: pre-intervention, intervention, and post-intervention. Pre-tests were administered to both groups to measure baseline reading motivation and self-efficacy. Students were informed about the study, and ethical issues such as confidentiality and voluntary participation were ensured.

At the intervention phase, the experimental group received explicit instruction in cognitive reading strategies (predicting, skimming, scanning, inferring, summarizing, and analyzing) using the CALLA model (preparation, presentation, practice, evaluation, and expansion). The control group continued with traditional instruction. During post-intervention phase, post-tests, using the same instruments as the pre-tests, were administered to assess changes in motivation and self-efficacy.

Quantitative data from questionnaires were analyzed using descriptive statistics and inferential statistics (paired and independent t-tests) to examine differences between pre-test and post-test results. Qualitative data from interviews and observations were analyzed using thematic analysis following Braun and Clarke (2006). Data triangulation was used to compare findings across multiple sources, enhancing validity and depth of interpretation (Creswell & Plano Clark, 2018).

3. Findings

3.1. Analysis of Reading motivation Questionnaire

Table 1

Results of Reading Motivation Questionnaire pre and post Intervention

Main factors	Sub components	Pre intervention				Post intervention			
		Mean		SD		Mean		SD	
		Co	Ex	Co	Ex	Co	ex	Co	Ex
self –efficacy	Challenge	2.58	2.54	.692	.779	2.62	3.006	.665	.88
	Reading work avoidance	4.25	4.21	.671	.674	4.21	4.03	.698	.719
	Self- efficacy	3.65	3.69	.779	.776	3.66	3.84	.78	.74
Intrinsic motivation	curiosity	3.3	3.9	.83	.87	3.78	3.27	.848	.792
	importance	3.66	3.64	.706	.729	3.6	3.77	.75	.73
	involvement	3.61	3.63	.727	.745	3.6	3.7	.75	.73
Extrinsic motivation	competition	3.17	3.11	.86	.947	3.14	3.24	.824	.912
	Grade	3.77	3.73	.82	.792	3.76	3.8	.715	.75
	Compliance	3.65	3.69	.735	.736	3.63	3.82	.735	.762

Table 1 compares students' self-efficacy, intrinsic motivation, and extrinsic motivation before and after the intervention for both control and experimental groups. At the pre-intervention stage, both groups showed nearly identical mean scores and similar standard deviations, indicating a comparable baseline. This strengthens the validity of the findings by ensuring that any post-intervention differences can be attributed to the treatment rather than initial differences between groups.

In terms of self-efficacy, the experimental group demonstrated a significant improvement, particularly in the challenge subcomponent, indicating that students became more confident in handling difficult reading tasks. Overall self-efficacy also increased in the experimental group, while the control group remained almost unchanged. This suggests that the intervention strengthened students' belief in their ability to understand reading texts independently, consistent with Bandura's view that mastery experiences build self-efficacy. Reading work avoidance slightly decreased in the experimental group, indicating greater willingness to engage in reading tasks, while the control group showed no meaningful change. This reinforces the idea that the intervention helped reduce avoidance behaviors and encouraged more active engagement with reading activities.

For intrinsic motivation, the experimental group showed improvements in importance and involvement, suggesting increased value and engagement

in reading. However, curiosity showed a slight decline, indicating that the intervention was less effective in sustaining exploratory interest. The control group showed little or negative change, confirming that intrinsic motivation does not improve without intentional instructional support.

Regarding extrinsic motivation, the experimental group showed consistent improvements in competition, grades, and compliance, reflecting stronger responsiveness to external academic expectations. The control group showed minimal change. Overall, standard deviations remained stable across both groups, suggesting uniform effects of the intervention. In conclusion, the intervention improved self-efficacy and extrinsic motivation most strongly, while effects on intrinsic motivation were mixed, highlighting the need to balance strategy instruction with activities that foster curiosity and deeper interest in reading.

Table 2
Effect Size and Probability Results of Reading Motivation (Pre–Post Intervention)

Categories	**Group**	**Mean Diff**	**Cohen's d**	**t-value**	**p-value**
Challenge	Ex	0.46	0.55	3.64	<0.001
	Co	0.04	0.06	0.39	0.70
Reading Work Avoidance	Ex	-0.18	0.26	1.80	0.07
	Co	-0.03	0.04	0.28	0.78
Self-efficacy	Ex	0.15	0.20	1.35	0.18
	Co	0.01	0.01	0.09	0.92
Curiosity	Ex	0.60	0.72	4.85	<0.001
	Co	-0.07	0.08	0.56	0.58
Importance	Ex	0.13	0.18	1.20	0.23
	Co	-0.06	0.08	0.52	0.60
Involvement	Ex	0.07	0.09	0.65	0.52
	Co	-0.01	0.01	0.07	0.94
Competition	Ex	0.13	0.14	0.95	0.34
	Co	-0.03	0.04	0.26	0.79
Grade	Ex	0.07	0.09	0.62	0.54
	Co	-0.01	0.01	0.08	0.93
Compliance	Ex	0.14	0.18	1.20	0.23
	Co	-0.05	0.07	0.45	0.65

The findings in Table 2 show that cognitive reading strategy instruction had differential effects on students' reading motivation across the experimental and control groups. In the experimental group, the most notable improvements were observed in challenge ($d = 0.55$, $p < 0.001$) and curiosity ($d = 0.72$, $p < 0.001$), indicating increased willingness to engage with difficult texts and a stronger intrinsic interest in reading. In contrast, other motivational components such as self-efficacy, importance, involvement, competition, grade, and compliance showed only small, non-significant effects, suggesting that the intervention primarily strengthened intrinsic rather than extrinsic motivation. Although reading work avoidance slightly decreased, the change was not statistically significant ($p = 0.07$), implying that reductions in avoidance behaviors require more sustained intervention. The control group, by comparison, showed negligible or slightly negative changes across all motivational dimensions, confirming the limited impact of traditional instruction alone. Overall, the comparison between groups demonstrates that the cognitive reading strategy intervention was responsible for the observed motivational gains.

3.2. The Results of Self Efficacy

Table 3

Descriptive Statistics of Control Group (Pre- and Post-Intervention)

No.	Reading Task	N	Pre-Intervention Mean	Pre SD	Post-Intervention Mean	Post SD
1	Read and understand the specific details of a student's book written in English	46	3.6304	0.82620	4.1304	0.71829
2	Read and understand the main ideas of a 20-page book written for English-speaking teenagers	46	3.8696	0.90942	4.3043	0.78513
3	Read and understand the directions on how to use a new electronic dictionary	46	4.0435	0.89335	4.3043	0.81294
4	Read and understand the lyrics or verses of a song written in English	46	3.7609	0.87394	3.8696	0.80578
5	Read and understand the specific details of a letter from an American pen-pal discussing summer vacation	46	3.7826	0.75757	3.6739	0.84471
6	Read and understand the English subtitles in an American movie	46	3.6957	0.75629	3.7391	0.74341
7	Read and understand the specific details of a one-page magazine article related to	46	3.7174	0.77926	3.9565	0.78758

	hobbies					
8	Read and understand the main ideas of a front-page newspaper article	46	3.2609	0.71289	3.2174	0.75757
9	Read and understand the items on a menu at a fast-food restaurant	46	4.4783	0.86253	4.1957	0.74891
10	Read and understand the specific details of a party invitation written in English	46	4.5870	0.88383	4.6304	0.82620
11	Read and understand the specific details of a business letter in English	46	4.5217	1.04858	4.5870	0.88383
12	Read and understand the specific details of a newspaper article related to the student's major	46	3.5870	0.80488	3.6087	0.80217
13	Read and understand the main ideas of a newspaper article related to the student's major	46	3.4565	0.78050	3.6739	0.70093
14	Read and understand the contents and times of TV programs in a TV guide	46	4.3261	0.89578	4.2391	0.89901

Table 3 presents descriptive statistics for the control group's self-reported English reading comprehension before and after the study, showing generally moderate to relatively high mean scores. Pre-test values ranged from 3.2609 to 4.5870, while post-test scores ranged from 3.2174 to 4.6304, indicating only slight fluctuations and overall stability in students' perceived reading ability without targeted intervention.

A few items showed modest improvements, such as understanding details from a student's book and a 20-page text, suggesting gradual gains likely due to routine classroom exposure. Familiar tasks like reading party invitations and business letters remained consistently high, reflecting a ceiling effect with limited room for further improvement. However, some items showed slight declines, indicating inconsistent progress across different reading tasks.

Standard deviation values remained stable, suggesting uniform responses across students and minimal variation in performance changes. Overall, the control group showed no substantial or consistent improvement, highlighting that routine instruction alone had limited impact on reading self-efficacy. This underscores the need for explicit strategy-based instruction to produce meaningful gains in both reading competence and confidence.

Table 4
Results of the Experimental Group

No.	Reading Task	N	Pre-Intervention Mean	Pre SD	Post-Intervention Mean	Post SD
1	Read and understand the specific details of a student's book written in English	46	3.6304	0.82620	4.1304	0.71829
2	Read and understand the main ideas of a 20-page book written for English-speaking teenagers	46	3.8696	0.90942	4.3043	0.78513
3	Read and understand the directions on how to use a new electronic dictionary	46	4.0435	0.89335	4.3043	0.81294
4	Read and understand the lyrics or verses of a song written in English	46	3.7609	0.87394	3.8696	0.80578
5	Read and understand the specific details of a letter from an American pen-pal discussing summer vacation	46	3.7826	0.75757	3.6739	0.84471
6	Read and understand the English subtitles in an American movie	46	3.6957	0.75629	3.7391	0.74341
7	Read and understand the specific details of a one-page magazine article related to hobbies	46	3.7174	0.77926	3.9565	0.78758
8	Read and understand the main ideas of a front-page newspaper article	46	3.2609	0.71289	3.2174	0.75757
9	Read and understand the items on a menu at a fast-food restaurant	46	4.4783	0.86253	4.1957	0.74891
10	Read and understand the specific details of a party invitation written in English	46	4.5870	0.88383	4.6304	0.82620
11	Read and understand the specific details of a business letter in English	46	4.5217	1.04858	4.5870	0.88383
12	Read and understand the specific details of a newspaper article related to the student's major	46	3.5870	0.80488	3.6087	0.80217
13	Read and understand the main ideas of a newspaper article related to the student's major	46	3.4565	0.78050	3.6739	0.70093
14	Read and understand the	46	4.3261	0.89578	4.2391	0.89901

	contents and times of TV programs in a TV guide					

The pre-test results for the experimental group show a moderate level of English reading comprehension, with mean scores ranging from 3.125 to 4.667. Students performed best on familiar and structured texts such as party invitations, business letters, and menus, indicating stronger comprehension when prior knowledge could be used. In contrast, they struggled with complex academic texts like newspaper articles and major-related readings, showing lower scores and highlighting difficulty with higher-order comprehension skills. Overall, reading ability was uneven across tasks, with stronger performance in familiar contexts and weaker performance in authentic academic materials.

After the intervention, post-test results show overall improvement, particularly in challenging and academic reading tasks. Notable gains were seen in newspaper articles, academic texts, TV programs, and culturally embedded materials such as movie subtitles and song lyrics. These improvements suggest that cognitive reading strategies helped students process unfamiliar texts more effectively and apply appropriate comprehension techniques. Meanwhile, performance on familiar texts remained consistently high, showing maintained strength alongside new gains.

Standard deviations indicate moderate variability, especially in more complex tasks, suggesting differences in how students adopted the strategies. Overall, the findings demonstrate that the intervention improved reading comprehension, particularly in difficult texts, while also maintaining existing strengths. This confirms that cognitive reading strategy instruction supports both skill development and more confident engagement with diverse reading materials.

4. Discussion

The findings of this study provide a comprehensive understanding of the effects of cognitive reading strategy instruction on first-year university students' reading motivation and self-efficacy. By integrating results from the reading motivation questionnaire and the self-efficacy scale, a clear but selective pattern of influence emerges. Overall, the intervention demonstrates a strong impact on intrinsic motivation—particularly curiosity—and a moderate improvement in task-specific confidence, while showing limited effects on broader self-efficacy and extrinsic motivation. This indicates that cognitive reading strategy instruction mainly strengthens students' engagement with reading tasks and their situational confidence, rather than producing broad or uniform motivational change.

At the baseline level, both the control and experimental groups showed very similar mean scores across all motivational and self-efficacy constructs. This equivalence strengthens the internal validity of the study, indicating that the groups began from comparable motivational and psychological conditions (Creswell & Creswell, 2018). The similarity in standard deviations further confirms that variability within each group was nearly identical, suggesting that the participants were evenly distributed in terms of

motivation and perceived reading ability. This baseline consistency provides a strong foundation for attributing post-intervention differences to the instructional treatment rather than pre-existing differences between groups.

One of the most significant findings relates to intrinsic motivation, particularly the curiosity dimension, which showed a large and statistically significant improvement in the experimental group ($d = 0.72$, $p < .001$). This indicates that cognitive reading strategies substantially increased students' interest in reading and their willingness to engage with texts. The improvement suggests that strategy instruction helped transform reading from a passive activity into an active and exploratory process. Students became more engaged in understanding texts, which reflects a shift toward deeper cognitive involvement and sustained attention. This finding is consistent with Guthrie and Wigfield (2000), who argue that curiosity and interest are central drivers of engaged reading and academic persistence.

However, other intrinsic motivation components, such as importance ($d = 0.18$) and involvement ($d = 0.09$), showed only minimal improvement. This suggests that while the intervention was effective in stimulating situational interest, it had limited influence on students' deeper value judgments about reading or their emotional connection to texts. According to Wigfield and Eccles (2000), intrinsic motivation consists of multiple dimensions that do not necessarily respond equally to instructional interventions. In this case, the strategies appear to have triggered immediate engagement without substantially reshaping long-term attitudes toward reading. Similarly, extrinsic motivation dimensions—including competition, grades, and compliance—showed only small and statistically non-significant changes. This finding aligns with Deci and Ryan's (2000) Self-Determination Theory, which explains that extrinsic motivation is primarily driven by external rewards and pressures rather than cognitive engagement processes. As a result, strategy-based instruction alone is unlikely to produce strong changes in externally regulated motivation.

In contrast, the control group exhibited only negligible changes across all motivational dimensions, with some slight declines in certain areas. This stability further highlights the importance of structured cognitive strategy instruction in maintaining or improving students' motivational engagement. Without such instructional support, students' motivation appears to remain largely static over time, particularly in intrinsic dimensions such as curiosity and involvement. The contrast between groups therefore reinforces the instructional value of cognitive reading strategies in promoting meaningful motivational development.

The results for self-efficacy show a different and more limited pattern of change. Both groups recorded only slight, statistically non-significant improvements, with the experimental group increasing from 3.82 to 3.96 ($d = 0.19$, $p > .05$). Although the experimental group demonstrated stronger gains in motivation, these did not translate into substantial improvements in overall self-efficacy. This suggests that enhanced engagement with reading tasks does not automatically lead to stronger beliefs about one's general reading ability. Bandura (1997) emphasizes that self-efficacy develops through mastery experiences, but only when learners actively recognize and interpret their success. Similarly, Pajares (2002) and Schunk and

DiBenedetto (2020) argue that self-efficacy growth requires structured reinforcement such as reflection and feedback, which help learners internalize their progress. The absence of such reinforcement may explain why improvements in performance-related engagement did not result in significant changes in self-efficacy beliefs.

Another important explanation for the limited change in self-efficacy may be its relatively stable nature within short instructional periods. Self-efficacy tends to develop gradually and is often resistant to rapid change unless reinforced consistently over time. When learners already hold moderately positive beliefs about their reading ability, as was the case in this study, further gains may be difficult to achieve within a short intervention period. This helps explain why improvements remained small despite increased engagement and strategy use.

When compared with previous research, the findings show both alignment and divergence. The strong improvement in curiosity is consistent with Guthrie et al. (2004), who found that strategy-based instruction enhances reading engagement and intrinsic interest. However, the limited effect on self-efficacy contrasts with Schunk and Rice (1993), who reported stronger improvements when motivational components such as goal-setting and reinforcement were explicitly embedded in instruction. This suggests that cognitive reading strategies alone are not sufficient to produce comprehensive motivational change unless combined with targeted self-efficacy support.

Overall, the integrated results indicate that cognitive reading strategy instruction is most effective in enhancing intrinsic engagement—particularly curiosity—while producing moderate gains in task-related confidence and minimal changes in extrinsic motivation and general self-efficacy. This pattern highlights the selective nature of the intervention's impact. It strengthens students' immediate engagement with reading tasks but does not fully reshape broader motivational beliefs or external motivational drivers.

5. Conclusions

In conclusion, the study demonstrates that cognitive reading strategy instruction has a selective but meaningful impact on students' reading motivation and self-efficacy. It significantly enhances curiosity and engagement, moderately improves task-specific confidence, and strongly boosts reading comprehension. However, its effect on global self-efficacy and extrinsic motivation remains limited within the study period.

These findings confirm that cognitive development and affective development do not progress simultaneously. Therefore, effective reading instruction should integrate both strategy training and motivational support to foster not only skilled readers but also confident and self-directed learners.

The findings have important instructional implications. First, cognitive reading strategies are highly effective in enhancing engagement, curiosity, and comprehension. Second, self-efficacy development requires explicit support, including feedback, reflection, and goal-setting activities. Third, a

balanced instructional approach combining cognitive, metacognitive, and motivational strategies is essential for comprehensive reading development.

Finally, the study highlights that motivation is multidimensional and dynamic. While curiosity responds quickly to engaging instruction, deeper motivational beliefs and self-efficacy require sustained intervention.

Author contribution statement:

Author 1 was responsible for designing the study, collecting and analyzing the data.
Author 2 contributed to revising the manuscript by improving the coherence, organization, and overall presentation of ideas throughout the paper.

The usage of GenAI: Please state explicitly what part of the research or text production is produced by the assistance of GenAI (if used).

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