



Original article

Reading Strategy Use, Self-Regulation, and Reading Achievement Among Iraqi University EFL Learners: A Correlational Study

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ABSTRACT

The present study investigates the relationship between reading strategy use, self-regulation, and reading achievement among 200 EFL undergraduates at the University of Baghdad and University of Kufa in Iraq. The study employed a quantitative, cross-sectional correlational design grounded in Zimmerman's self-regulation model, Bandura's self-efficacy theory, and Mokhtari and Reichard's strategic reading model. Data were collected using the Reading Strategies Questionnaire, the Self-Regulation Trait Questionnaire, and the Cambridge Key English Test. Pearson correlation results revealed significant positive correlations between self-regulation and reading strategy use, and between self-regulation and reading achievement. Reading strategies, particularly metacognitive strategies, also correlated positively with achievement. The findings indicate that self-regulation and strategic reading behavior are interrelated and jointly associated with reading success in the L2 classroom. The study recommends explicit strategy instruction, support for self-regulation, and development of self-efficacy within Iraqi university reading programs.

Keywords: cognitive reading strategies, EFL reading comprehension

استخدام استراتيجيات القراءة والتنظيم الذاتي والتحصيل القرائي لدى طلبة الجامعات العراقية في مادة اللغة الإنجليزية كلغة أجنبية: دراسة ارتباطية

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المُستخلص

تتقصى الدراسة الحالية العلاقة بين استخدام استراتيجيات القراءة والتنظيم الذاتي والتحصيل القرائي لدى 200 طالب في مرحلة البكالوريوس ضمن برنامج اللغة الإنجليزية لغة أجنبية في جامعة بغداد وجامعة الكوفة في العراق. اعتمدت الدراسة تصميمًا كميًا ارتباطيًا مقطعيًا مستندًا إلى نموذج التنظيم الذاتي لزيمرمان، ونظرية الكفاءة الذاتية لباندورا، ونموذج القراءة الاستراتيجية لمختاري وريتشارد. جمعت البيانات باستخدام استبانة استراتيجيات القراءة، واستبانة سمة التنظيم الذاتي، واختبار كامبردج للغة الإنجليزية الأساسية. وكشفت نتائج معامل ارتباط بيرسون عن وجود ارتباط إيجابي دال بين التنظيم الذاتي واستخدام استراتيجيات القراءة، وبين التنظيم الذاتي والتحصيل القرائي. كما ارتبطت استراتيجيات القراءة، ولا سيما الاستراتيجيات ما وراء المعرفية، ارتباطًا إيجابيًا بالتحصيل. وتشير النتائج إلى أن التنظيم الذاتي وسلوك القراءة الاستراتيجية مترابطان، وأنهما معًا يرتبطان بالنجاح في القراءة داخل صف اللغة الثانية. وتوصي الدراسة بتدريس الاستراتيجيات بشكل صريح، ودعم التنظيم الذاتي، وتنمية الكفاءة الذاتية ضمن برامج القراءة في الجامعات العراقية.

الكلمات المفتاحية: استراتيجيات القراءة المعرفية، الفهم القرائي في اللغة الأجنبية، المتعلمون العراقيون في الجامعات

1. Introduction

University students learning English as a foreign language will have the most academic impact language skill: reading comprehension. It is the medium for which knowledge of the discipline is accessed, in which examinations are navigated, and in which academic writing is resourced. However, the gap in terms of reading demanded at university level and the reading skills that many EFL learners have is quite wide and persistent, particularly in situations where reading has traditionally been taught in a grammatically oriented and translation-based manner (Grabe, 2009; Dreyer & Nel, 2003).

The constructs in the cognitive and motivational domain that seem to be the most consistent predictors of this gap are reading strategy use and self-regulation. Reading strategies are intentional, purposeful, metacognitive and cognitive responses that readers use to form meaning in the text (Afflerbach et al., 2008). Cognitive strategies are ones that go directly to the meaning of the text (inferencing, re-reading, using clues), while metacognitive strategies are executive goal-setting strategies that monitor whether comprehension is occurring or not, and invoke repair if the comprehension fails (Baker & Brown, 1984; Flavell, 1979). The motivational and metacognitive framework for initiating, maintaining and adjusting reading strategies is provided by self-regulation, which is a cyclical process involving goal setting, self-monitoring, and adaptive response to keep behaviour goal-directed (Zimmerman, 2000).

The Iraqi context of the university EFL is an interesting context for this investigation. The focus of teaching EFL undergraduates in Iraq has always been on declarative knowledge of language rather than strategic reading competence, whereas self-regulation has never been the target of

teaching an explicit skill, and the post-conflict educational context may have influenced the development of the strategic reading self-regulatory habits. Yet, there is no empirical study that simultaneously investigates reading strategy use, SRL, and reading achievement in university EFL learners in Iraq.

The present study is guided by three research questions. (RQ1) Is there a significant relationship between the sub-factors of self-regulation (self-monitoring, self-efficacy) and reading strategy use (cognitive, metacognitive) among Iraqi university EFL learners? (RQ2) Is there a significant relationship between self-regulation and reading achievement? (RQ3) Is there a significant relationship between reading strategy use and reading achievement? The answers are supposed to help cross-cultural validation of SRL theory and to present some empirically-based recommendations on reading curriculum improvement in EFL context in Iraq. Reading strategies and self-regulation were each associated with EFL reading achievement, but they have not been examined together in a single theoretical framework in the literature in Iraqi universities. This is significant because if the two constructs are both associated with reading comprehension, then interventions focusing on a single construct may not produce the maximum gains. Furthermore, the post-conflict educational context in Iraq, where the strategies taught are limited, pedagogical orientation focuses on examinations, and self-regulation has been disrupted, might create motivational and cognitive processes that are unique and worthy of empirical studies in the specific environment.

2. Review of the Literature

Theoretical and empirical studies of reading strategy use, self-regulation and reading achievement in L2 contexts are reviewed in a thematic way so as to emphasise the integration the present study is aimed at.

2.1 Reading Strategy Use and L2 Comprehension

The research on metacognition and L2 reading relies on the metacognition research of Flavell (1979) and the research on comprehension monitoring and repair strategies by Baker and Brown (1984), which showed that skilled readers constantly monitor their comprehension and use specific repair strategies when they do not, as less skilled readers do not. Mokhtari and Reichard (2004) proposed a taxonomy of strategies (global, problem-solving, and support) and their findings indicate that higher-proficiency L2 readers employ more strategies overall and choose them more selectively. Alhaqbani & Riazi (2012) reported that the metacognitive strategy awareness had a significant effect on reading comprehension among Saudi university EFL students.

The evidence for the causal effects of instruction in strategies on comprehension is strong. The study by Carrell et al. (1989) showed that metacognitive strategy training is an effective means of improving reading comprehension in ESL students, and Janzen and Stoller (1998) replicated the effects of metacognitive strategy training in naturalistic instructional contexts. A meta-analysis of 51 L2 reading intervention studies conducted by Okkinga et al. (2018) showed that metacognitive

strategy instruction ($d = 0.41$) has a medium positive effect, particularly when metacognitive strategy instruction was integrated into authentic reading tasks. Talebi et al. (2020) reported that ELT majors applied significantly higher number of strategies than other majors and thus metalinguistic training as a by-product developed strategy awareness (relevant to ELT major sample in the present study). Ahmadi and Gilakjani (2012) also demonstrated that the two were mutually reinforcing: scores in both self-regulation and metacognitive strategy instruction improved following metacognitive strategy instruction, thus demonstrating bidirectional facilitation.

2.2 Self-Regulation in EFL Reading

Zimmerman's (1990, 2000) model of SRL views the self-regulated learner as an active metacognitive, motivational and behaviour agent who sets goals, monitors progress toward goals, and alters behaviour when needed. To measure, O'Neil and Herl (1998) lowered this model down to its two higher-order sub-factors which are most directly related to academic performance, namely, metacognition (planning and self-monitoring) and motivation (effort and self-efficacy). The self-efficacy theory provided by Bandura (1986) describes the motivational process in which self-regulation and strategy deployment are connected, namely that self-efficacy learners invest more effort into challenging cognitive tasks and persist longer in challenging texts.

Jafarigohar and Behrooznia (2012) showed that self-regulation had the highest prediction of reading comprehension among distance-EFL learners in Iran, with self-monitoring being the most powerful sub-factor predictor in EFL reading in particular. Sadi and Uyar (2013) demonstrated cross-linguistic generalisability of self-regulation training by its effects on reading comprehension in Turkish university students. The results found by Bai and Wang (2021) indicated that the self-regulated learning strategy use accounted for writing performance of Hong Kong EFL learners, and self-efficacy and metacognitive monitoring were the most influential mediators, both of which are also likely mediators in the present study between SRLS use and reading performance. Linnenbrink and Pintrich (2003) showed that self-efficacy influences is greatest when the task allows students to use flexible strategies to solve it, which is the case for the open-ended comprehension tasks in the KET.

2.3 The Strategy–Self-Regulation–Achievement Nexus

The studies that investigated reading strategies and self-regulation jointly as predictors of reading achievement always yielded the results that both reading strategies and self-regulation provide independent and interactive variance. In a Thai EFL setting, Zhang and Seepho (2013) discovered that there was a cross-over effect between metacognitive strategy use and self-regulation, as each explained unique variance in comprehension when controlling for the other. According to Muñoz-Luna (2018), the learning benefits of metacognitive strategies were mediated partially by the SRL processes in a Spanish university EFL context, which supports the idea that some of the benefits of comprehension of metacognitive strategies go through the activation of SRL processes. In the current study, the high cognitive–metacognitive strategy inter-correlation ($r = .73$) observed by

students suggests the expert readers using think-aloud perform cognitive and metacognitive strategies in an integrated and fluent manner, as documented by Pressley & Afflerbach (1995). It should be acknowledged, however, that a correlation of this magnitude ($r = .73$) raises a question of discriminant validity, as it indicates that the cognitive and metacognitive sub-scales share roughly 53% of their variance and may be tapping a partially overlapping construct rather than two fully distinct ones. The two sub-scales are nonetheless retained as separate variables on theoretical grounds, since Mokhtari and Reichard's (2004) taxonomy treats metacognitive monitoring and cognitive repair as functionally distinct processes; this overlap is revisited as a measurement limitation in Section 8. There is no integrated investigation similar in terms of its purpose that is comparable to the study in Iraqi university EFL learners which makes the present writing study theoretically necessary and practically urgent.

3. Theoretical Framework

The current research employs an integrated theoretical perspective that integrates three complementary models of strategic and self-regulated reading. These frameworks combine to create the specific relational claims that are assessed for this study and the interpretive scaffolding for the findings observed.

3.1 Zimmerman's (2000) Self-Regulation Model

The social-cognitive model conceptualizes self-regulation as a three-phase cycle that is repeated, as suggested by Zimmerman. Learners determine specific comprehension objectives (e.g., identifying the central idea in every paragraph), choose strategies for accomplishing their objectives, and make judgments about their chances for success (self-efficacy judgments) in the Forethought Phase. In the Performance Phase learners enact selected strategies, use self-monitoring during the process to monitor comprehension in real time, and adapt their strategy when they sense the sign of failure, such as when reading too quickly, when they re-read a confusing sentence, or when they look for context to determine the meaning of an unknown word. Self-reflection Phase involves learners assessing their understanding with regard to the initial goal, assigning success/failure to their own efforts or strategies chosen, and making plans that will help them for the next reading episode. There are two important implications of this cyclical model that are important for the present study. First, reading strategy use is not a separate and distinct event, but rather a manifestation of a total package of self-regulated cognitive activity, in that strategies are only used intentionally when self-monitoring indicates a comprehension failure, so that self-monitoring should predict strategy use. Second, flexibility and adaptability when deploying a strategy, as well as the lack thereof and their rigidity, should be reflected in the quality of self-regulation, and this should be predicted by total self-regulation independent of strategy use; thus, the level of strategy deployment should not be conditioned by the level of self-regulation.

3.2 Bandura's (1986) Self-Efficacy Theory

Bandura's theory identifies the motivational mechanism that is related to self-regulated learning and strategy deployment and to reading persistence. Self-efficacy is the belief that one has the ability to perform the behaviours necessary to produce a given result and represents a mediator between competence knowledge and actual competence; a learner may be aware of the competencies that are important for reading, but may not perform them consistently if they have low self-efficacy in reading. Bandura came up with four sources of self-efficacy: mastery experience (successful reading in the past), vicarious experience (watching someone achieve success), social persuasion (teacher encouragement), and physical arousal (confidence or anxiety of reading). For the EFL context of reading, mastery experiences are most powerful: when a learner is able to recover from and comprehend a difficult text through the use of a strategy, she or he has a source of self-efficacy that has been generated. This builds a feedback loop of self-efficacy increasing as strategy deployment increases, which is then followed by understanding success, and further increases self-efficacy, which is what the present study aims to document.

3.3 Mokhtari and Reichard's (2004) Strategic Reading Framework

This study uses Mokhtari and Reichard's taxonomy as the operational basis for the categorisation of strategic reading behaviours. Their taxonomy is tripartite, global (overall control of reading episode), problem solving (local management of comprehension problems), and support (reference tools), which aligns with the cognitive/metacognitive distinction of the RSQ that was used in the present study. Metacognitive strategies are most similar to global and problem-solving strategies in that they are executive monitoring for comprehension failure and the decision making to select and activate repair. The taxonomy suggests a hierarchical relationship between metacognitive and cognitive strategies: metacognitive monitoring is logically before cognitive repair, if there is any, because the metacognitive monitoring must identify a problem before a repair can be undertaken. This hierarchy effect yields the hypothesis that metacognitive strategies will have a higher correlation with reading achievement than cognitive strategies alone, which is supported in the present data ($r = .64$ vs. $.58$).

3.4 Conceptual Framework

This study was based on an integrated theoretical model as shown in Figure 1. The use of reading strategies is mediated by two processes of self-regulation: self-monitoring, which triggers the deployment of a strategy when it is necessary to handle comprehension failure, and self-efficacy which encourages the use of a strategy by providing motivational persistence. Reading strategy use is a predictor of reading achievement because it allows for the comprehension processes measured by assessment. Self-regulation also directly influences achievement via the effect on goal-directedness, effort persistence, and adaptive reading behaviour. The pathways in this model are covered by all three of the theoretical traditions.

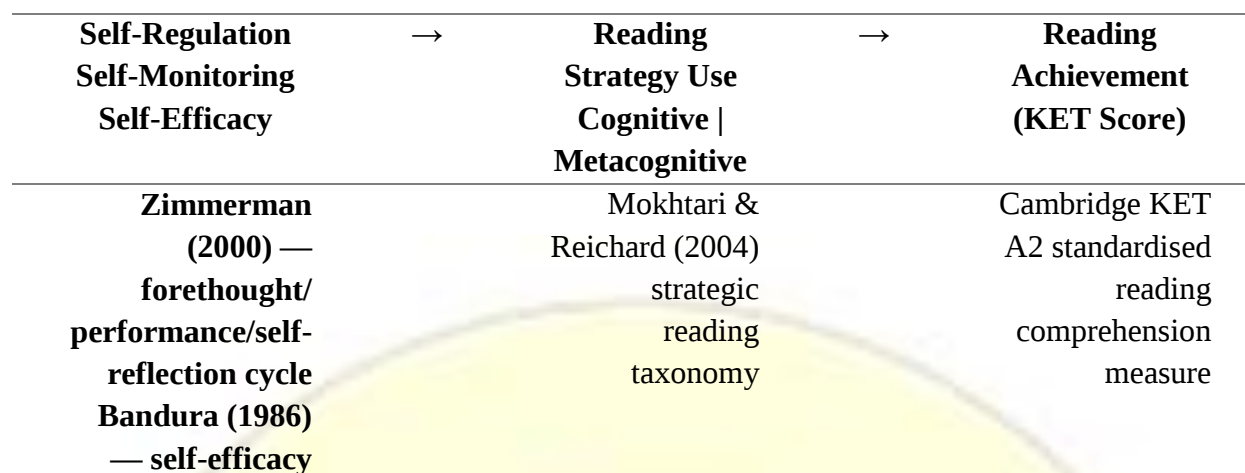


Figure 1. Conceptual framework: Theoretical pathways among self-regulation, reading strategy use, and reading achievement.

4. Methodology

4.1 Research Design

The study was quantitative and cross sectional correlational (Creswell & Creswell, 2018). The correlational approach is justified for two reasons: (a) self-regulation and reading strategy use are dispositional and habitual and laboratory manipulation of these variables would compromise the ecological validity of the study; (b) the main aim of the study is to provide an empirical baseline of a population that is currently uncharted, and not to test causal direction. Ethical care was taken: they all signed informed consent forms, data were anonymised and kept in locked files, passwords being known only to the researchers and their instructors.

4.2 Participants

Table 1 shows the demographic profile of the 200 participants who were recruited from several classes in the University of Baghdad and University of Kufa (Najaf) by convenience sampling.

Table 1 Participant Demographic Characteristics (N = 200)

Characteristic	Category	n (%)
Gender	Male	110 (55.0%)
	Female	90 (45.0%)
Age range	20–45 years	M = 22.3, SD = 3.8
Native language	Arabic	200 (100%)
University	Baghdad / Kufa (Najaf)	Multiple sections
Year of study	2nd–4th year undergraduate	—
Sampling	Convenience sampling	Response rate: 93%

4.3 Instruments

Tables 2–4 provide structured overviews of each instrument and its sub-components.

Table 2 Summary of Research Instruments

Instrum ent	Source	Ite ms	Scale	Construct s	α
RSQ	Mokhtar i & Reichar d (2004)	33	5-pt Likert (Never→Alw ays)	Cognitive & Metacognit ive	.74/.76
SRT-Q	O'Neil & Herl (1998)	32	4-pt Likert (Almost never→Almo st always)	Self- monitoring & Self- efficacy	.77/.79
KET Reading	Cambri dge English (2012)	—	CEFR A2; standardised to 100 pts	Reading achieveme nt	Validat ed

Table 3 RSQ Reading Strategy Categories: Definitions and Sample Items

Category	Definition	Sample Item
Cognitive	Deliberate operations applied directly to text to facilitate meaning: inferencing, re-reading, using contextual clues, identifying text structure	"When text becomes difficult, I re-read to increase my understanding"
Metacognitive	Executive monitoring and regulation of comprehension: detecting failure, planning reading approach, evaluating comprehension against reading goals	"I check my understanding when I come across new information"

Table 4 SRT-Q Sub-Factors: Definitions and Sample Items

Sub-Factor	Definition	Sample Item
Self- Monitoring	Actively tracking comprehension and progress	"I check how well I understand as I study"

	during a task; detecting misunderstandings; adjusting strategy deployment in response to signals of failure	
Self-Efficacy	Belief in one's capacity to execute reading and comprehension behaviours required for academic success; confidence in managing difficult English texts	"I am confident I can understand difficult texts if I try hard enough"

4.4 Procedure and Data Analysis

The data was collected while students were in class. The RSQ and SRT-Q were carried out in one session and the KET reading test was given one week later to avoid fatigue effects. 215 sets of questionnaires were sent out and 200 sets were returned (93% response rate). A post-hoc power analysis (GPower 3.1; Faul et al., 2009) revealed that with $N = 200$, there is a power of .92 of detecting medium correlations ($r \geq .25$) at $\alpha = .05$. All variables were normality tested and found to be non-significant ($p > .05$). Pearson Product-Moment Correlation was used to test all research hypotheses. Effect sizes were interpreted according to Cohen (1988): $r = .10$ (small), $.30$ (medium), $.50$ (large). Data was analysed using IBM SPSS Version 25.

5. Results

Table 5 presents descriptive statistics for all study variables. Table 6 presents the full Pearson correlation matrix, from which Tables 7–9 extract the sub-matrices corresponding to each research question.

Table 5 Descriptive Statistics for All Study Variables (N = 200)

Variable	Min	Max	M (SD)	Skewness	α
Cognitive Strategies	1.20	5.00	3.41 (0.72)	−0.24	.74
Metacognitive Strategies	1.10	5.00	3.28 (0.68)	−0.19	.76
Self-Monitoring	1.00	4.00	2.87 (0.61)	−0.11	.77
Self-Efficacy	1.00	4.00	2.93 (0.65)	−0.09	.79
Reading Achievement (KET)	28	97	62.14 (14.32)	−0.17	—

The mean scores of the strategy subtests (cognitive: $T=3.41/5$; metacognitive: $T=3.28/5$) suggest moderate to high levels of strategy engagement for both strategies. Self-monitoring ($2.87/4$) and self-efficacy ($2.93/4$) are moderate levels of self-regulatory capacity, with a good amount of individual variation. The mean of KET score is 62.14 with SD of 14.32, which means the overall level of KET is in the mid-range and has the required variance for correlational studies. Skewness is near zero and K-S p is greater than .05 in all cases indicating that all variables are approximately normally distributed. Kurtosis values for all variables fell within the range of ± 1.00 , confirming that the distributions did not depart from normality on either index.

Table 6 Pearson Correlation Matrix: All Study Variables (N = 200)

Variable	1	2	3	4	5
1. Cognitive Strategies	—				
2. Metacognitive Strategies	.73**	—			
3. Self-Monitoring	.52**	.61**	—		
4. Self-Efficacy	.48**	.57**	.59**	—	
5. Reading Achievement (KET)	.58**	.64**	.51**	.49**	—

Note. ** $p < .01$. Cohen (1988): small $r = .10$, medium $r = .30$, large $r = .50$.

There are 10 bivariate correlations, all of which are positive and significant at .01 level. The order of the correlation coefficients for the two types of metacognitive strategies, cognitive strategies, self-monitoring, and self-efficacy was found to be in the same order as the conceptual model showing a hierarchy: Reading achievement was most strongly correlated with the metacognitive strategies ($r = .64$); cognitive strategies ($r = .58$); self-monitoring ($r = .51$); and self-efficacy ($r = .49$).

6. Discussion

The findings support the three research hypotheses and yield a pattern of associations that is consistent both in theory and in the three parts of the conceptual framework and informative for practice. In this section they systematically interpret each finding, understanding what convergences and divergences with the previous evidence are represented.

6.1 Self-Regulation and Reading Strategy Use (RQ1)

Correlations between the self-monitoring and cognitive strategies were $r = .52$, and between the self-monitoring and metacognitive strategies were $r = .61$; correlations between the self-efficacy and cognitive strategies were $r = .48$, and between the self-efficacy and metacognitive strategies were $r = .57$. All four are medium to big sized impacts.

These patterns validate the first pathway of the conceptual framework and can be understood by all three of the theoretical components. According to Zimmerman's (2000) model, the performance phase of self-regulation (which is identical to the deployment of reading strategies) will be elicited by self-monitoring signals, which are signals that alert a reader to comprehension failure and cause him or her to activate repair strategies. The correlation between the self-monitoring–metacognitive strategy is the highest in this sub-set ($r = .61$), indicating a high degree of structural similarity between the monitoring of comprehension (a self regulatory function) and the use of metacognitive repair strategies (a metacognitive reading function). Bandura's (1986) model of strategy use, relying on the cognitive model of self-efficacy, predicts that cognitively demanding strategy deployment will require the motivational investment that only self-efficacious readers are able to make.

Jafarigohar and Behrooznia (2012) found the correlations of self-monitoring– metacognitive strategy to be .55 which is similar to the .61 that was found in this study. Ahmadi and Gilakjani (2012) found an experimental evidence that self-monitoring training directly impacted metacognitive strategy deployment, which is consistent with the directionality of this association (although the present correlational design cannot itself establish a causal relationship). There is a high correlation between cognitive–metacognitive and the strategies being deployed ($r = .73$), as found in competent readers (Mokhtari and Reichard 2004; Pressley and Afflerbach 1995), and even when there is not much formal instruction of strategies, some degree of strategic integration did occur naturally during reading.

6.2 Self-Regulation and Reading Achievement (RQ2)

Self-monitoring ($r = .51$) and self-efficacy ($r = .49$) each had a significant, large correlation with reading achievement. The results are in line with earlier studies in Iranian EFL context (Jafarigohar & Behrooznia, 2012), Turkish EFL context (Sadi & Uyar, 2013), and Hong Kong EFL context (Bai & Wang, 2021), which all reported comparable findings that SDT-based prediction of self-regulation as an achievement determinant applies to Iraqi university EFL learners.

The greater effect of self-monitoring than self-efficacy ($r = .51$ vs. $.49$) is consistent with Zimmerman's (2000) model, which suggests that self-monitoring is a more proximal mechanism (direct effect during the reading process on detecting and repairing comprehension failures), whereas self-efficacy is at a motivational level (upstream of task execution). The KET's comprehension tasks are diverse and Linnenbrink and Pintrich (2003) identified that self-efficacy has the greatest impact on academic outcomes in situations where the learner is allowed some flexibility in their approach. In this sample, both the moderate rating for self-monitoring (2.87/4) and self-efficacy (2.93/4) suggest significant potential for targeted training to improve both. Based

on Zimmerman and Schunk (2001) extensive experimental research showing that self-regulation is teachable, the amount of achievement gains that can be realized in Iraqi universities with systematic scaffolding could be much more than what has been reported in western contexts where students have some degree of self-regulatory foundation.

6.3 Reading Strategy Use and Reading Achievement (RQ3)

Although both types of strategies are large (cognitive $r = .58$; metacognitive $r = .64$), cognitive strategies were not as strongly associated with achievement as metacognitive strategies. The differential follows the literature on the L2 reading field which also shows that metacognitive monitoring must be able to identify a comprehension failure in order for any cognitive repair strategy to be triggered (Alhaqbani & Riazi, 2012; Zare, 2013; Okkinga et al., 2018); the explanation of this differential is the hierarchical implication in Mokhtari and Reichard's (2004) taxonomy of cognitive repair strategies, which is that metacognitive monitoring is the first step in a process that is automatically followed by the next step, which is the cognitive repair strategy. Metacognitive awareness is thus not simply a type of strategy, but it is the executive function which oversees all other strategic reading behaviour.

The positive cognitive strategy–achievement correlation ($r = .58$) is greater than the moderate cognitive strategy–achievement correlation found in Western university samples with higher proficiency. Grabe (2009) noted that cognitive strategy contributions to comprehension make a greater impact at lower proficiency levels where automatic linguistic processing cannot take the comprehension load. This is because at the average KET score (measured at A2 level) (62.14), Iraqi EFL learners are unable to use the automatised processing without resorting to cognitive strategies as complementary strategies. Okkinga et al. (2018) concluded that metacognitive strategy interventions are more effective ($d = 0.51$) than cognitive strategy interventions alone ($d = 0.28$), but for A2-level learners, a combination of the two may be more effective than either intervention alone, since cognitive strategies will deal with the immediate linguistic obstacle, whereas metacognitive strategies will work on developing executive control for long-term reading progress.

7. Pedagogical Implications

The integrated results give three specific, theoretically based and practically applicable recommendations for EFL reading instruction in Iraqi universities.

Explicit metacognitive strategy instruction should be part of the curriculum and should not be a separate entity. The Reciprocal Teaching method (Palincsar and Brown 1984) which involves predicting, questioning, clarifying, and summarizing is easily applicable in a big class environment in Iraq and has proven to be effective in L2 contexts (Okkinga et al 2018). In this sample, the cognitive–achievement association was high, suggesting that a combination of cognitive and metacognitive instruction (text-manipulation strategies and comprehension monitoring) is better than either alone. Teachers must demonstrate to students the internal self-questioning process (e.g.,

“Does this make sense? Does this match the facts? What do I do when it does not?”) explicitly and frequently, so that it is made visible to learners who have not seen it modelled before..

Secondly, self-regulation scaffolding needs to be integrated into all reading lessons and not as a programme. This can be accomplished in 3 ways that require little additional class time: Pre-Reading Goal-Setting (teacher models then students independently set specific comprehension goals for a text); During-Reading Monitoring Checkpoint (reading paused at a designated point to have students assess their comprehension, diagnose their difficulty, and select a strategy to address their difficulty); and Post-Reading Self-Evaluation (students evaluate whether goals are met and which strategies are most helpful). These three anchors: Forethought, Performance, and self-reflection, engage Zimmerman's (2000) forethought-performance-reflection cycle at the lesson level and are directly related to developing the self-monitoring and self-efficacy found to be consequential for achievement that the present study provides evidence for.

Third, reading self-efficacy should be an intentional teaching goal rather than an unintended by-product. Bandura's four sources of self-efficacy suggest approaches to the classroom: by setting up graded reading tasks that ensure that early reading comprehension experience is a positive one; by giving explicit teacher models of strategy use for texts that students can observe being comprehended; by giving specific, strategy-referenced feedback that attributes reading comprehension success to learned skills rather than fixed ability; and by reducing reading anxiety through low-stakes practice with texts before high-stakes assessment. The data presented here indicate that teachers who focus on all four types of information about self-efficacy instead of grades are more likely to foster the reading confidence that is known to directly relate to student achievement.

8. Limitations and Future Research

Four restrictions need to be recognized. (Three further limitations relating to method are added below.) Firstly, the small sample size in two Universities in Iraq limits generalisability. The future research should use stratified probability sampling based on the type of Institution, geographical area, and proficiency level to represent diversity of the Iraqi university EFL population.

Secondly, the cross-sectional design does not allow for causal inference. The concept suggests that there are reciprocal connections between self-efficacy and strategy use which are not supported by these data. Longitudinal designs would permit the examination of the temporal nature of the proposed relationships and could examine whether self-regulation training at time 1 would predict gains in strategy use at time 2 and achievement at time 3.

Third, reading achievement was assessed using the KET, which is designed to assess A2 level of achievement within the CEFR, and could therefore create a ceiling effect for the higher performing students in the sample. This concern is concrete rather than hypothetical: the maximum observed score was 97 out of 100 (Table 5), indicating that the most proficient readers were approaching the test ceiling and that their true reading ability may have been underestimated, which would attenuate

the correlations involving achievement. Future research needs to include multiple achievement measures across a minimum of two CEFR levels and should employ proficiency-stratified sampling to capture the full spectrum of reading proficiency.

Fourth, all constructs were evaluated by self-report questionnaires. Think-aloud protocols given during actual reading tasks would give direct observational evidence of the deployment of reading strategies and comprehension monitoring, which can be triangulated with the questionnaire based results reported here. The use of online process measures, such as eyetracking, reading time data and keystroke logging (in digital reading environments), are potential methodological extensions that could be explored in future research in Iraqi university settings.

Fifth, the Reading Strategies Questionnaire and the Self-Regulation Trait Questionnaire were both administered as Likert-scale instruments within the same session. Collecting two self-report measures at the same time can inflate the observed associations between them through common method variance, so the correlations among the questionnaire-based variables (in particular the self-regulation–strategy relationships) should be interpreted with this in mind. Future research should separate the administration of the two instruments in time or incorporate non-self-report indicators to reduce shared method bias. Sixth, although the achieved sample ($N = 200$) yielded high statistical power, the power analysis was conducted post hoc; an a priori power analysis carried out before data collection would have provided a stronger basis for determining the required sample size, and is recommended for future replications. Seventh, demographic variables recorded in Table 1—year of study, gender, and university—were not entered as control variables in the analysis, even though they could plausibly influence reading achievement and strategy use; future studies should control for these background variables, for example through partial correlation or multiple regression, to isolate the relationships of interest.

9. Conclusion

The study investigated the relationships between reading strategy use (cognitive and metacognitive), reading achievement and self-regulation (self-monitoring and self-efficacy) in 200 Iraqi university EFL learners. The study found that all three constructs are significantly and positively interrelated, based on an integrated theoretical framework based on Zimmerman (2000), Bandura (1986), and Mokhtari and Reichard (2004). The use of metacognitive and cognitive strategies is significantly correlated with self-monitoring and self-efficacy, self-regulation is significantly correlated with reading achievement, and both types of strategies (with metacognitive showing the stronger correlation) are associated with reading comprehension.

The results of this study further validate self-regulated reading theory in the Iraqi context of university EFL settings and pinpoint three high-leverage points for intervention: explicit metacognitive strategy instruction based on Reciprocal Teaching, providing self-regulation scaffolding in reading instruction, incorporating goal setting, monitoring, and self-evaluation routines, and building self-efficacy by utilizing all four sources identified by Bandura.

All these findings and recommendations together constitute the empirical basis and theoretical framework for the next generation of reading instruction research and curriculum reform in the Iraqi universities and beyond in the post-conflict and resource-poor educational context of the EFL in which strategic reading has always been of great importance but an instructional deficit.

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