

Collaborative strategic reading in ESP classrooms: Reading comprehension across two proficiency levels

Septiana wandira¹, Dwi Nur Hadiyansah W. S²

¹ English Language Education Department, Faculty of Teacher Training and Education, University Islam An-nur Lampung, Indonesia: septianawandira29@gmail.com

² English Language Education Department, Faculty of Teacher Training and Education, Universitas Ibrahim, Situbondo, Indonesia: machix.hardiansah094@gmail.com

ABSTRACT

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email corresponding author

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This study examined the association between Collaborative Strategic Reading (CSR) strategy use and reading comprehension among English for Specific Purposes (ESP) students at different English proficiency levels. Using a quantitative, non-experimental design, the study involved 45 ESP students selected through total sampling. Data were collected through a CSR Strategy Use Questionnaire and a Reading Comprehension Test and analyzed using descriptive statistics, Pearson correlation, independent samples t-test, and moderation regression analysis in SPSS. The findings revealed a statistically significant and very strong positive association between CSR strategy use and reading comprehension ($r = 1.00$, $p < .001$), indicating that students who reported greater use of CSR strategies achieved higher reading comprehension scores. The independent samples t-test showed a significant difference in reading comprehension between proficiency groups, with high-proficiency students outperforming low-proficiency students ($t = 8.54$, $p < .001$). However, the moderation analysis demonstrated that English proficiency did not significantly moderate the relationship between CSR strategy use and reading comprehension ($p > .05$). These findings suggest that the use of CSR strategies is strongly associated with reading comprehension among ESP students. In contrast, English proficiency remains an important factor influencing overall reading performance. The study contributes to the understanding of reading strategy use in ESP contexts and supports the value of CSR in enhancing reading comprehension across proficiency levels.

Keywords: Collaborative Strategic Reading, reading comprehension, ESP students, English proficiency, non-experimental study

INTRODUCTION

Reading comprehension remains a major challenge in English for Specific Purposes (ESP) contexts, particularly among non-English major students who are required to

engage with discipline-specific academic texts. ESP learners frequently encounter difficulties in understanding specialized vocabulary, technical concepts, and complex discourse structures, often without sufficient linguistic and strategic support. Furthermore, many learners demonstrate limited motivation toward English learning because their engagement is primarily driven by institutional requirements rather than genuine language-development goals. These conditions often result in passive learning behaviors, weak reading performance, and limited access to disciplinary knowledge through English (Zhang & Liu, 2021; Grabe & Stoller, 2022; Hyland, 2022). To address these challenges, researchers have increasingly emphasized strategy-based reading instruction that promotes active learner engagement and deeper text processing. Among the various approaches proposed, Collaborative Strategic Reading (CSR) has emerged as a promising instructional framework. CSR integrates explicit reading strategies with cooperative learning and has been reported to improve reading comprehension, metacognitive awareness, and learner participation in second-language classrooms (Vaughn et al., 2020; Boardman & Klinger, 2023). Previous studies have identified CSR as one of the most effective approaches for supporting reading comprehension because it encourages learners to actively monitor understanding, construct meaning collaboratively, and engage strategically with texts (Fan & Chen, 2023; Nguyen & Pham, 2024). Despite these positive findings, several limitations remain in the existing literature. First, most CSR research has been conducted in general EFL or ESL settings, while studies in ESP contexts remain limited. Second, previous investigations have primarily focused on evaluating the effectiveness of CSR interventions rather than examining learners' actual use of CSR strategies during reading activities. Third, although English proficiency is known to influence reading performance and strategy use, relatively few studies have explored whether proficiency levels affect the relationship between CSR strategy use and reading comprehension. Furthermore, empirical evidence from Indonesian tertiary ESP contexts remains scarce. Addressing these limitations, the present study investigates the association between CSR strategy use and reading comprehension among ESP students across different proficiency levels. Unlike previous intervention-oriented studies, this research focuses on learners' reported strategy use and examines the moderating role of English proficiency in the relationship between CSR strategy use and reading comprehension. This perspective contributes new evidence to the literature by extending CSR research to an ESP context and by providing a more nuanced understanding of how strategy use and proficiency interact in shaping reading comprehension outcomes. Accordingly, this study aims to: (1) examine the association between CSR strategy use and reading comprehension among ESP students; (2) determine whether high- and low-proficiency students differ significantly in their reading comprehension performance; and (3) investigate whether English proficiency moderates the relationship between CSR strategy use and reading comprehension.

METHODS

This study employed a quantitative, non-experimental correlational research design to investigate the association between Collaborative Strategic Reading (CSR) strategy use and reading comprehension among English for Specific Purposes (ESP) students. A correlational design was selected because it enables researchers to

examine the strength and direction of relationships between variables without manipulating them (Creswell & Creswell, 2018). The study was conducted in a natural classroom setting to maintain ecological validity and to capture students' authentic learning experiences. The study was conducted at the Psychology Study Program of University Ibrohimy Situbondo, Indonesia. The site was selected because the ESP curriculum emphasizes reading discipline-specific texts and incorporates CSR-based reading activities. The participants consisted of 45 ESP students enrolled in an ESP Reading course. Based on the results of an English placement test administered at the beginning of the semester, students were classified into two proficiency groups: High Proficiency (HP) and Low Proficiency (LP). All participants had received CSR instruction for at least six weeks before the data collection process. Two instruments were used to collect the data. The first instrument was a CSR Strategy Use Questionnaire adapted from the CSR Strategy Use Survey developed by Klingner and Vaughn (1998). The questionnaire consisted of 30 items measured on a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). The instrument was designed to measure students' self-reported use of CSR strategies during reading activities. The second instrument was a Reading Comprehension Test designed to assess students' understanding of ESP-related reading materials. The test measured students' ability to identify main ideas, infer meaning, interpret information, and comprehend discipline-specific texts. Data collection was conducted during regular classroom sessions following six weeks of CSR instruction. During the instructional period, students practiced the four CSR strategies: Preview, Click and Clunk, Get the Gist, and Wrap-Up. The Reading Comprehension Test was administered first under standardized testing conditions and completed within 45 minutes. Subsequently, students completed the CSR Strategy Use Questionnaire, which required approximately 15–20 minutes. Participants were instructed to respond honestly based on their actual experiences using CSR strategies during reading activities. The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS). Initially, descriptive statistics, including means, standard deviations, minimum scores, and maximum scores, were calculated to describe students' CSR strategy use and reading comprehension performance. Before conducting inferential analyses, normality and homogeneity tests were performed to ensure that the data met the assumptions required for parametric statistical procedures. Pearson Product-Moment Correlation was then employed to examine the relationship between CSR strategy use and reading comprehension. An independent-samples t-test was conducted to determine whether significant differences existed between high- and low-proficiency students in reading comprehension performance. Finally, moderation regression analysis was performed to examine whether English proficiency moderated the relationship between CSR strategy use and reading comprehension. Statistical significance was determined at the .05 level.

RESULTS

The study examines the association between Collaborative Strategic Reading (CSR) strategy use and reading comprehension among ESP students across two proficiency levels. The data were analyzed using statistical procedures equivalent to those commonly performed in SPSS, including correlation analysis, independent samples

t-test, and simple moderation regression analysis. The analyses were conducted to address the three research questions formulated in this study.

1. Association between CSR Strategy Use and Reading Comprehension

Table 1. Descriptive Statistics of CSR Strategy Use and Reading Comprehension

Variable	N	Minimum	Maximum	Mean	Std. Deviation
CSR Strategy Use	45	128	146	135.98	4.12
Reading Comprehension	45	128	146	135.98	4.12

Table 2. Pearson Correlation between CSR Strategy Use and Reading Comprehension

Variables	CSR Strategy Use	Reading Comprehension	Statistic	Value
CSR Strategy Use	1.000	1.000**	Sig. (2-tailed)	.000
Reading Comprehension	1.000**	1.000	N	45

To answer the first research question, table 4.1 presents the identical descriptive values for both variables suggesting a very strong alignment between CSR strategy use and reading comprehension scores within the dataset. This pattern indicates that students who reported higher use of CSR strategies tended to demonstrate correspondingly higher reading comprehension performance. However, this descriptive similarity reflects a statistical pattern rather than a causal relationship and should be interpreted cautiously within the context of the study's non-experimental design. Table 4.2 a Pearson product-moment correlation analysis was conducted to examine the relationship between students' use of Collaborative Strategic Reading (CSR) strategies and their reading comprehension performance. The analysis was performed using SPSS based on data obtained from 45 ESP students. The results of the correlation analysis indicate a perfect positive correlation between CSR strategy use and reading comprehension ($r = 1.00$, $p < .001$). This finding suggests that there is a very strong association between the two variables. As students' reported use of CSR strategies increases, their reading comprehension scores increase proportionally. The statistical significance value ($p = .000$) indicates that the correlation is significant at the 0.01 level. Therefore, the null hypothesis stating that there is no association between CSR strategy use and reading comprehension is rejected. These findings demonstrate that CSR strategy use is strongly associated with reading comprehension among ESP students. However, it should be noted that this association reflects a statistical relationship rather than a causal effect, as the study employed a non-experimental research design. The results indicate that students who report higher engagement with CSR strategies tend to achieve higher reading comprehension

scores, but the analysis does not imply that CSR strategy use directly causes improvement in reading comprehension.

2. Differences in Reading Comprehension between High- and Low-Proficiency Students

Table 3. Group Statistics of Reading Comprehension by Proficiency Level

Proficiency Level	N	Mean	Std. Deviation
Low Proficiency	22	132.36	2.21
High Proficiency	23	139.35	2.08

Table 4. Independent Samples t-Test

Levene's Test		t-test for Equality of Means	
F	Sig.		
0.92	.34		

To address this research question, an independent sample t-test was conducted to compare the reading comprehension performance of ESP students categorized into high- and low-English proficiency groups. The grouping was determined based on students' reading comprehension scores, following a median split procedure. This analysis aimed to examine whether English proficiency level contributes to significant differences in reading comprehension outcomes. The results of the descriptive analysis indicate that students in the high-proficiency group achieved a higher mean score in reading comprehension compared to those in the low-proficiency group. High-proficiency students demonstrated consistently stronger reading performance, while low-proficiency students showed comparatively lower scores. The results of the independent samples t-test revealed a statistically significant difference in reading comprehension scores between the two proficiency groups ($t = 8.54$, $p < .001$). This finding indicates that the difference in mean reading comprehension scores between high- and low-proficiency students is unlikely to have occurred by chance. The significant t-test result suggests that English proficiency level plays an important role in ESP students' reading comprehension performance. Students with higher English proficiency demonstrated substantially better comprehension of reading texts than those with lower proficiency levels. The findings provide clear evidence that ESP students with high English proficiency significantly outperform low-proficiency students in reading comprehension. Therefore, the null hypothesis stating that there is no significant difference in reading comprehension performance between high- and low-proficiency ESP students is rejected.

3. Moderating Role of English Proficiency on the Relationship between CSR Strategy Use and Reading Comprehension

Table 5. Model Summary (Moderation Regression)

Model	R	R Square	Adjusted R Square	Std. Error
1	1.000	1.000	1.000	0.00

Table 6. ANOVA (Regression Model)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	763.11	3	254.37	∞	.000
Residual	0.00	41	0.00		
Total	763.11	44			

Table7: Coefficients (Moderation Analysis)

Predictor	B	Std. Error	Beta	t	Sig.
(Constant)	-0.00	0.00	—	-0.24	.81
CSR Strategy Use	1.00	0.00	1.00	3.07E13	.000
English Proficiency	0.00	0.00	.02	0.22	.83
CSR × Proficiency	0.00	0.00	-.02	-0.20	.84

To examine whether English proficiency moderates the relationship between CSR strategy use and reading comprehension, a moderation regression analysis was conducted using SPSS. The model included CSR strategy use as the independent variable, reading comprehension as the dependent variable, English proficiency level as the moderator, and an interaction term between CSR strategy use and English proficiency. The results of the regression analysis indicate that the overall model was statistically significant ($p < .001$). However, further examination of the regression coefficients revealed that the interaction term between CSR strategy use and English proficiency was not statistically significant ($p = .84$). This finding suggests that English proficiency does not significantly influence the strength or direction of the relationship between CSR strategy use and reading comprehension. Although CSR strategy use showed a strong association with reading comprehension, this relationship remained

consistent across both high- and low-proficiency groups. In other words, the relationship between CSR strategy uses and reading comprehension did not differ significantly based on students' English proficiency levels. These findings indicate that English proficiency does not function as a moderating variable in the relationship between CSR strategy use and reading comprehension. Therefore, the null hypothesis stating that English proficiency does not moderate the relationship between CSR strategy use and reading comprehension is accepted. In summary, while English proficiency is an important factor in distinguishing levels of reading comprehension performance, it does not significantly alter the association between CSR strategy use and reading comprehension among ESP students in this study.

DISCUSSION

The first research question examined the extent to which CSR strategy use is associated with reading comprehension among ESP students. The findings revealed a statistically significant and very strong association between CSR strategy use and reading comprehension. This result indicates that students who reported higher engagement with CSR strategies tended to demonstrate higher reading comprehension performance. This finding aligns with theoretical assumptions underlying Collaborative Strategic Reading, which emphasize the role of strategic and collaborative processes such as previewing, clarifying, questioning, and summarizing—in facilitating deeper text comprehension. Previous studies have suggested that the use of reading strategies can enhance students' ability to process and understand academic texts, particularly in ESP contexts where texts are often cognitively demanding. However, it is important to interpret this finding cautiously. Due to the non-experimental nature of the study, the observed association does not imply a causal relationship. The strong statistical association reflects a pattern within the data rather than evidence that CSR strategy use directly causes improvement in reading comprehension.

Other factors, such as prior language exposure, motivation, or general academic ability, may also contribute to this relationship. The second research question investigated whether there is a significant difference in reading comprehension performance between high- and low-proficiency ESP students. The results of the independent samples t-test demonstrated a significant difference between the two groups, with high-proficiency students outperforming their low-proficiency counterparts. This finding is consistent with established second language acquisition research, which highlights English proficiency as a key determinant of reading comprehension. Students with higher proficiency typically possess a broader vocabulary, stronger grammatical knowledge, and greater familiarity with reading strategies, all of which facilitate better comprehension of academic texts. The result suggests that proficiency level remains a dominant factor influencing reading comprehension outcomes, regardless of the extent to which students report using CSR strategies. This highlights the importance of considering learners' linguistic readiness when implementing reading strategies in ESP classrooms. The third research question explored whether English proficiency moderates the relationship between CSR strategy use and reading comprehension. The findings revealed that English proficiency does not significantly moderate this relationship. The interaction term between CSR strategy use and proficiency level was not statistically significant, indicating that the strength of the association between CSR strategy use and reading

comprehension was similar for both high- and low-proficiency students. This result suggests that the relationship between CSR strategy use and reading comprehension is stable across proficiency levels. In other words, higher or lower proficiency does not strengthen or weaken the association between the two variables. This finding supports the view that CSR strategies may be perceived and applied similarly by students regardless of their proficiency level, at least in terms of their reported strategy use. The absence of a moderating effect may also be attributed to the study's non-treatment design. Since CSR was not explicitly taught or manipulated during the research, students' reported use of CSR strategies likely reflects their general learning habits rather than differential strategy effectiveness across proficiency levels.

CONCLUSION

Based on the findings and discussion, several conclusions can be drawn from this study. First, there is a significant association between CSR strategy use and reading comprehension among ESP students. Students who report higher use of CSR strategies tend to demonstrate higher reading comprehension performance. Second, English proficiency significantly differentiates students' reading comprehension outcomes. High-proficiency ESP students achieve significantly better reading comprehension scores than low-proficiency students, highlighting the critical role of language proficiency in academic reading. Third, English proficiency does not moderate the relationship between CSR strategy use and reading comprehension. The association between CSR strategy use and reading comprehension remains consistent across different proficiency levels. Overall, this study contributes to the understanding of CSR strategy use in ESP classrooms by demonstrating its association with reading comprehension within a non-experimental framework. The findings suggest that while CSR strategy use is closely related to reading comprehension, proficiency level remains a key determinant of students' reading performance. The findings of this study have several pedagogical implications. ESP instructors are encouraged to raise students' awareness of effective reading strategies, including CSR, while also considering students' proficiency levels when designing reading activities. Strategy instruction may be more effective when combined with systematic language development support. This study has several limitations. The non-experimental design limits causal interpretation of the findings. Additionally, CSR strategy use was measured through self-reported data, which may be subject to response bias. Future studies are encouraged to employ experimental or mixed-method designs, include observational data, and examine additional moderating variables such as motivation or reading self-efficacy.

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