

Enhancing Tertiary EFL Students' Critical Reading through the CIRC Model: A Mixed-Methods Classroom Action Research Study

Abdul Gafur Marzuki¹, Fatima², Huriyah Huriyah³, Risa Triassanti⁴, Ivan D. Baguilat⁵

¹ Universitas Islam Negeri Datokarama Palu, Indonesia; gafurmarzuki@uindatokarama.ac.id

² Universitas Islam Negeri Datokarama Palu, Indonesia; fatima@uindatokarama.ac.id

³ Universitas Islam Negeri Siber Syekh Nurjati Cirebon, Indonesia; 61.huriyah@gmail.com

⁴ Universitas PGRI Ronggolawe Tuban, Indonesia; triassantirisa@gmail.com

⁵ Ifugao State University, Philippines; ivanjuamars@yahoo.com

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ABSTRACT

Critical reading is a fundamental component of higher-order literacy in tertiary EFL education; however, many university students continue to struggle with analytical interpretation, evaluative judgment, and inferential comprehension. This study investigated the extent to which the Cooperative Integrated Reading and Composition (CIRC) model could enhance tertiary EFL students' critical reading skills. The study employed a two-cycle classroom action research design with an embedded mixed-methods approach. Twenty English Education students at an Indonesian university participated in the intervention. Quantitative data were collected through parallel-form pre- and post-tests measuring three critical reading subskills: analytical interpretation, evaluative judgment, and inferential comprehension. Data were analyzed using paired-sample *t*-tests, Cohen's *d* effect sizes, and 95% confidence intervals. Qualitative data were obtained from classroom observations, reflective journals, and semi-structured interviews and analyzed thematically. The findings revealed significant improvement in students' overall critical reading performance from the pre-test to Cycle 2 ($t(19) = 9.87, p < .001$), with a large effect size ($d = 2.21$). Significant gains were also observed across all critical reading subskills, with effect sizes ranging from 1.39 to 1.75. Qualitative findings indicated increased peer-initiated discussion, more frequent use of textual evidence, enhanced evaluative reasoning, and greater metacognitive awareness during reading activities. The convergence of quantitative and qualitative findings suggests that the CIRC model can effectively support the development of critical reading skills in tertiary EFL contexts by fostering collaborative meaning-making and evaluative engagement with texts. Although the absence of a control group limits causal generalization, the study provides evidence that structured cooperative reading-writing cycles can strengthen critical literacy practices in higher education.

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Corresponding Author:

Abdul Gafur Marzuki

Universitas Islam Negeri Datokarama Palu, Indonesia; gafurmarzuki@uindatokarama.ac.id

1. INTRODUCTION

The increasing demand for higher-order literacy in global higher education has intensified expectations that university students engage with academic texts analytically rather than superficially. In English as a Foreign Language contexts, reading is not limited to decoding or locating explicit information, but entails interpretation, evaluation, and interrogation of authorial stance and textual positioning (Ahmed Abdel-Al Ibrahim et al., 2023; Ahmed Abdel-Al Ibrahim et al., 2023). Within Indonesian higher education, curriculum policies emphasize higher-order thinking skills, yet empirical studies indicate that classroom practices often remain comprehension-oriented rather than critically oriented (Setyorini, 2017; Setiawan et al., 2023; Ceylan & Comoglu, 2024). This misalignment signals a structural problem in tertiary EFL instruction, where students are expected to demonstrate critical literacy but are rarely supported through pedagogical designs that systematically cultivate analytical and evaluative reading.

Critical reading in tertiary EFL contexts presents distinctive challenges. Unlike first language academic readers, EFL university students must simultaneously process linguistic complexity and disciplinary argumentation. Limited lexical repertoire, insufficient exposure to argumentative genres, and reliance on teacher explanation often constrain students' ability to infer implicit meaning or critique claims (Wallace, 2021; Agonafir, 2023; Syafryadin et al., 2024). Studies in Indonesian higher education reveal that students frequently remain at literal comprehension levels and hesitate to question textual authority Setyorini, 2017. Furthermore, teachers report uncertainty in operationalizing critical literacy principles into structured classroom procedures (Legesse & Kitila, 2024; Latif, 2022; Zhan & Yan, 2025). Consequently, the development of critical reading in tertiary EFL classrooms cannot rely solely on theoretical endorsement of critical literacy; it requires pedagogical models that translate analytical and evaluative processes into observable, scaffolded learning practices.

Cooperative learning has been widely recognized as a promising framework for enhancing engagement and comprehension. Meta-analytical findings demonstrate significant positive effects of cooperative approaches on reading outcomes (Alacapinar and Uysal, 2020; Fuad et al., 2023; Tadesse et al., 2024). Among these models, Cooperative Integrated Reading and Composition CIRC integrates peer reading, structured discussion, and collaborative writing within small groups (Slavin, 2019). Empirical studies report gains in reading comprehension across primary and secondary contexts (Prajogo, 2021; Patty, 2023; Mahdahera and Ridwan, 2023; Muthmainnah et al., 2025). However, prior CIRC research predominantly targets general comprehension outcomes and younger learners. Few studies explicitly examine whether CIRC can foster higher order subskills such as evaluative judgment, inferential reasoning, and analytical interpretation in tertiary EFL settings. Moreover, most investigations employ quasi experimental designs and measure score improvement without closely documenting iterative pedagogical refinement through classroom action research.

This gap is significant for two reasons. First, critical reading in university EFL programs demands sustained engagement with argumentative and expository texts that require evaluation of evidence, identification of bias, and synthesis of perspectives (Wallace, 2021; Lin et al., 2024). Second, Indonesian tertiary classrooms require context responsive interventions that allow instructors to diagnose weaknesses, adjust strategies, and observe developmental progression in situ. Existing literature on critical literacy in EFL settings discusses theoretical principles (Kim et al., 2020; Misa, 2023; Fuad et al., 2023), yet rarely integrates them with a structured cooperative reading writing model implemented through cyclical classroom inquiry. Thus, what remains insufficiently examined is how a systematically implemented CIRC model, embedded in a classroom action research framework, can address the specific difficulties of tertiary EFL students in performing analytical, inferential, and evaluative reading tasks.

The problem addressed in this study is therefore twofold. Empirically, English Education students at UIN Datokarama Palu demonstrated limited performance in critical reading subskills, particularly in evaluating arguments and drawing inferences from academic texts. Pedagogically, existing instruction relied heavily on teacher explanation and individual silent reading, with minimal structured peer dialogue. This condition reflects a broader instructional gap between the expectation of higher-order

literacy and the predominance of comprehension-based teaching practices. Without a structured collaborative mechanism that distributes cognitive responsibility and makes evaluative reasoning explicit, students are unlikely to internalize critical reading strategies.

To respond to this problem, the present study adopts the CIRC model within a classroom action research CAR design. The choice of CAR is methodologically grounded in its capacity to integrate intervention and reflection through iterative cycles of planning, acting, observing, and reflecting (Latif, 2022; Oranga and Gisore, 2023). In the context of critical reading, where progress involves gradual shifts in discourse practices and metacognitive awareness, a cyclical design enables continuous adjustment of instructional scaffolding. Theoretically, the intervention draws on social constructivist principles that position peer interaction as a mediator of higher order cognition (Brown and Palincsar, 2018; Moir et al., 2020; Ceylan & Comoglu, 2024), alongside critical literacy perspectives that conceptualize reading as evaluative engagement with textual meaning and power relations (Luke, 2018; Unrau et al., 2018). Within the CIRC structure, students engage in guided peer discussion, joint summarization, and collaborative composition, thereby externalizing reasoning processes that can be negotiated and refined collectively.

The research question guiding this study is: To what extent does the implementation of the CIRC model within a classroom action research framework enhance tertiary EFL students' critical reading skills? Sub questions examine changes in students' analytical interpretation, evaluative judgment, and inferential comprehension across two action cycles, as well as shifts in classroom interaction patterns. By focusing on 20 English Education students in an Indonesian university context, the study narrows its contribution to a realistic and context specific scope. Rather than claiming broad generalizability, it seeks to provide empirically grounded insight into how structured cooperative reading writing cycles can operationalize critical literacy in tertiary EFL instruction.

This study contributes to the literature in three ways. First, it extends CIRC research beyond primary and secondary comprehension outcomes to explicitly target critical reading subskills in higher education. Second, it integrates cooperative learning and critical literacy within a classroom action research methodology, thereby linking theoretical constructs with iterative pedagogical practice. Third, it offers contextually situated evidence from Indonesian tertiary EFL education, where empirical documentation of cooperative models for critical reading remains limited. Through this focused contribution, the article advances a more precise understanding of how cooperative instructional design can mediate the development of analytical and evaluative literacy in university level EFL classrooms.

To substantiate this contribution and avoid treating CIRC as a merely technical intervention, the study must be grounded in a robust theoretical framework that explains how collaborative structures can mediate higher order reading development. The argument advanced here is that the pedagogical potential of CIRC can only be fully understood when examined at the intersection of social constructivist learning theory and critical literacy scholarship. Within this conceptual alignment, cooperative interaction is not simply an organizational strategy but a cognitive mechanism through which evaluative and analytical capacities are cultivated in the EFL classroom.

The foundational concept of the study centers on the interplay between social constructivist learning theory and critical literacy in the EFL reading classroom. Social constructivism, as articulated by Lev Vygotsky, posits that cognitive development is mediated through social interaction within a learner's zone of proximal development (ZPD), wherein guided collaboration enables learners to progress beyond their independent capacities (Brown & Palincsar, 2018; Singh et al., 2023). This framework underpins cooperative reading and writing models such as the Cooperative Integrated Reading and Composition (CIRC) Model by emphasizing peer scaffolding and group discourse as vehicles for higher-order thinking. Concurrently, the concept of critical literacy draws from the tradition of critical pedagogy to transform reading from decoding to evaluative, reflective, and socially situated practice (Misa, 2023; Wang, 2023; Le & Nguyen, 2024). Thus, the integration of CIRC within a critical literacy paradigm offers a theoretically coherent basis for developing EFL students' critical reading skills in a collaborative environment.

Empirical studies on critical reading in EFL contexts illustrate a persistent challenge: learners often engage in superficial comprehension rather than analysis, inference, or evaluation of text. For example, Setyorini (2017) examined secondary school EFL teachers' conceptions of critical reading in Indonesia and identified six core elements: analysis, evaluation, inference, interpretation, criticism, and questioning, yet noted limited diversity in classroom activities. Similarly, Blixen & Pannell (2020), Latif (2022) found that university students valued critical literacy but perceived teacher unfamiliarity with the approach as a barrier to implementation. In terms of cooperative models, research on the CIRC model has shown positive outcomes in reading comprehension: Prajogo (2021) reported an increase in mean scores from 74.38 to 81.41 across two cycles in a senior high school classroom action research using CIRC. Patty (2023) confirmed significant gains in reading comprehension via CIRC in grade 4 students in a CAR framework. Furthermore, Mahdahera & Ridwan (2023) found that CIRC enhanced behavioral, emotional, and cognitive engagement in EFL high school reading classes. These findings suggest that the combination of social interaction, cooperative learning structures, and structured reading and writing cycles is promising for EFL reading instruction.

Despite the encouraging evidence, several gaps remain. First, most CIRC studies focus on general reading comprehension rather than the critical reading skills (analysis, evaluation, inference) essential to critical literacy in tertiary EFL settings. Second, there is a dearth of classroom action research (CAR) employing CIRC aimed explicitly at higher-order reading skills within Indonesian university EFL contexts. Third, while studies on critical literacy in EFL settings exist, few combine the pedagogy with cooperative reading and writing frameworks in an action research design. Hence, the research gap lies in implementing a CIRC model that overtly targets critical reading competencies within a CAR structure among Indonesian tertiary EFL students. Addressing this gap is essential to bridge the divide between theoretical innovation and classroom practice, ensuring that EFL learners develop not only linguistic proficiency but also the cognitive and analytical literacy required for academic success. Furthermore, such inquiry provides a meaningful contribution to the ongoing discourse on how localized pedagogical models can effectively nurture globally relevant critical thinking skills.

In view of these gaps, the present study positions itself to address them by situating CIRC within a classroom action research design focused on enhancing critical reading skills of English Education students at a university in Indonesia. By operationalizing the CIRC model in two cycles of planning, acting, observing, and reflecting, the study aims to link cooperative learning structures with the development of critical literacy in reading tasks. This approach extends beyond comprehension to foster analytic and evaluative reading among EFL learners and contributes to the literature by combining cooperative methodology, critical literacy theory, and CAR design in a tertiary context. Consequently, the study advances both theory and practice by bridging cooperative instructional models with critical reading development in university EFL classrooms. In doing so, it demonstrates how iterative, context-responsive interventions can transform traditional reading instruction into an interactive, reflective, and student-centered learning process. This positioning also underscores the potential of CIRC as a dynamic pedagogical model that aligns with the goals of higher-order thinking and lifelong learning in modern EFL education.

Methodologically, trends in previous research reveal an increasing convergence of cooperative learning models and action research designs in reading instruction. For instance, several CIRC studies adopt CAR frameworks (Prajogo, 2023; Hasjaya et al., 2022), signalling an orientation toward iterative classroom improvement. In parallel, the literature on critical literacy in EFL settings highlights an emergent but still limited practice of embedding critical pedagogy into reading materials and group tasks (Kim et al., 2020; Misa, 2023). These methodological trajectories support the decision to employ a CAR design that both intervenes and reflects on instruction while aligning with critical literacy aims. The theoretical convergence of social constructivism and critical literacy, alongside the methodological convergence of CIRC and CAR, provides a coherent framework for the study. This dual alignment ensures that the intervention is not only pedagogically grounded but also empirically responsive to learners' evolving needs and classroom realities. Moreover, it reinforces the value of cyclical inquiry as

a sustainable mechanism for continuous pedagogical innovation and reflective teaching practice in EFL contexts.

Synthesizing the conceptual underpinnings, it is posited that the structured cooperative reading-writing cycles of the CIRC model create social interaction opportunities that enable learners to engage in higher-order reading tasks (e.g., critique, inference, synthesis) and thereby develop critical literacy within the EFL context. This conceptual synthesis frames the forthcoming Methodology section, where the CAR design, sample of 20 English Education students, instrumentation (observation checklists, field notes, tests), and cycle procedures were detailed, ensuring alignment between theory, prior research, and the empirical intervention to follow. In essence, the integration of CIRC within a CAR framework is anticipated to generate a dynamic learning ecosystem in which students construct meaning collaboratively and reflectively. This synthesis not only bridges theoretical perspectives with pedagogical realities but also establishes a foundation for evaluating the transformative potential of cooperative learning in advancing critical reading competence in tertiary EFL education.

2. METHOD

2.1 Research Design

This study employed a classroom action research design with an embedded mixed-method structure. The primary methodological orientation was classroom action research, implemented through iterative cycles of planning, acting, observing, and reflecting, while quantitative and qualitative data were embedded within each cycle to evaluate instructional impact. This design aligns with the dual purpose of classroom action research, namely pedagogical intervention and systematic inquiry within an authentic instructional setting (Werner et al., 2022; Oranga and Gisore, 2023; Apriani et al., 2025).

The decision to adopt a two-cycle design was theoretically and pragmatically justified. In classroom action research, cycles are continued until predetermined improvement criteria are achieved. Following Cycle 1, reflection indicated measurable gains but incomplete mastery of critical reading subskills, particularly evaluative judgment. Adjustments were therefore implemented in Cycle 2, including clearer role distribution, intensified peer scaffolding, and structured feedback. At the conclusion of Cycle 2, improvement targets were met, as evidenced by statistically significant gains and stabilized participation patterns. A third cycle was not conducted because performance indicators had reached the success threshold established during the planning phase, and additional cycles would have risked redundancy rather than meaningful pedagogical refinement.

The design did not include a control group. This limitation is explicitly acknowledged. Classroom action research prioritizes contextual improvement over experimental control, and all enrolled students participated in the intervention to ensure instructional equity. Consequently, causal inference must be interpreted cautiously. The findings indicate strong within-group improvement, yet they do not claim experimental generalizability beyond the studied cohort.

2.2 Participants and Context

The participants were 20 students enrolled in the TBIG 2 class of the English Education program at UIN Datokarama Palu. All participants completed the full two-cycle intervention and both pre- and post-assessments. Inclusion criteria required consistent attendance and complete test participation. No participant was excluded from analysis.

2.3 Instrumentation

Critical reading ability was measured using a structured test instrument developed for tertiary EFL contexts and adapted from established frameworks of analytical interpretation, evaluative judgment, and inferential comprehension (Wallace, 2021; Muthmainnah et al., 2024). The test blueprint

was derived from theoretical constructs of critical literacy Luke, 2018 and prior empirical operationalizations of critical reading in Indonesian EFL contexts (Setyorini, 2017).

Parallel forms were used for pre and post testing. While both forms measured identical constructs and subskills, item prompts and reading passages differed to minimize practice effects. Text difficulty levels were calibrated using comparable lexical density and syntactic complexity indices to ensure equivalence.

Construct validity was established through expert judgment by three senior lecturers in EFL reading and literacy studies. Each item was mapped against predefined critical reading indicators. Content validity indices exceeded the acceptable threshold of 0.80. A pilot test with a comparable cohort yielded satisfactory internal consistency reliability, with Cronbach's alpha exceeding 0.80. Reliability was calculated using SPSS version 26 through internal consistency analysis.

Qualitative instruments included structured observation checklists focusing on peer interaction and evaluative discourse, student reflective journals, and semi-structured interviews. These instruments were designed to capture behavioral and metacognitive dimensions of critical reading development and to triangulate quantitative findings.

2.4 Data Analysis

Quantitative data were analyzed using descriptive and inferential statistics. Means and standard deviations were calculated for overall and subskill performance. Paired sample t tests were conducted to examine differences between pretest and Cycle 2 post-test scores. Assumption checks were performed prior to inferential testing. Normality of difference scores was examined using Shapiro-Wilk tests and inspection of Q Q plots, confirming that parametric assumptions were satisfied.

In addition to statistical significance, effect size was calculated using Cohen's d for paired samples to determine the magnitude of improvement. The overall effect size indicated a large practical impact. Ninety-five percent confidence intervals were computed to provide precision estimates for mean differences. Subskill level analyses were also subjected to paired comparisons to determine whether gains in analytical interpretation, evaluative judgment, and inferential comprehension were statistically significant across cycles.

Qualitative data from classroom observations, journals, and interviews were transcribed and analyzed thematically using NVivo 24. Coding followed a constant comparative procedure to identify patterns related to peer scaffolding, evaluative language use, and metacognitive regulation. Integration of quantitative and qualitative findings occurred at the interpretation stage, allowing statistical gains to be contextualized within observable shifts in classroom discourse.

2.5 Reflexivity and Bias Mitigation

The principal researcher also served as the classroom instructor, positioning the study within practitioner research. This positionality provided contextual sensitivity but introduced potential bias in observation and interpretation. To mitigate this risk, several strategies were employed. First, quantitative scoring was conducted using standardized rubrics with blind rechecking by a second rater to reduce subjective influence. Interrater agreement exceeded acceptable consistency thresholds. Second, qualitative coding was peer reviewed by an independent colleague to enhance analytic credibility. Third, data triangulation across tests, observations, journals, and interviews strengthened internal validity.

3. FINDINGS AND DISCUSSION

3.1 Findings

This section reports the quantitative and qualitative results of the two cycle classroom action research examining the implementation of the Cooperative Integrated Reading and Composition model

to enhance tertiary EFL students' critical reading skills. In accordance with reporting standards for mixed method intervention studies, statistical outcomes are presented without extended interpretation.

3.1.1 Quantitative Findings

a. Overall Critical Reading Performance

Students' baseline performance, on the pre-test, indicated limited mastery of critical reading, with a mean score of 63.40 and a standard deviation of 5.87. Following Cycle 1, the post-test mean increased to 73.60 with a standard deviation of 6.12. After instructional refinement in Cycle 2, the post-test mean reached 84.20 with a standard deviation of 4.95. Assumption testing confirmed that the difference scores between pre-test and Cycle 2 post-test were normally distributed according to the Shapiro Wilk test and inspection of Q Q plots. A paired sample t test revealed a statistically significant improvement from pre-test to Cycle 2 post-test, $t(19) = 9.87$, $p < .001$. The mean difference was 20.80 points, with a 95 percent confidence interval ranging from 16.39 to 25.21.

Effect size analysis indicated a large magnitude of improvement. Cohen's d for paired samples was 2.21, exceeding conventional benchmarks for large effects. Improvement between Cycle 1 and Cycle 2 was also examined statistically. A paired sample t test comparing Cycle 1 and Cycle 2 post test scores demonstrated a significant increase, $t(19) = 7.14$, $p < .001$. The mean difference between cycles was 10.60 points, with a 95 percent confidence interval ranging from 7.49 to 13.71. Cohen's d for the Cycle 1 to Cycle 2 comparison was 1.60, indicating a large effect.

Table 1. Overall Critical Reading Scores and Effect Sizes

Comparison	Mean Difference	95% Confidence Interval	t	p	Cohen's d
Pre Test vs Cycle 2	20.80	16.39 to 25.21	9.87	< .001	2.21
Cycle 1 vs Cycle 2	10.60	7.49 to 13.71	7.14	< .001	1.60

These results indicate statistically significant and practically substantial gains in overall critical reading performance across the intervention period.

b. Subskill Level Analysis

Three subskills were measured: analytical interpretation, evaluative judgment, and inferential comprehension. Mean percentage scores increased across cycles for each subskill. Analytical interpretation improved from 68 percent in Cycle 1 to 88 percent in Cycle 2. Paired testing confirmed statistical significance, $p < .001$, with a large effect size. Evaluative judgment increased from 65 percent to 82 percent, also statistically significant at $p < .001$. Inferential comprehension improved from 66 percent to 81 percent, with statistically significant gains. Confidence intervals for mean differences in each subskill did not cross zero, indicating stable positive effects. Effect sizes for all three subskills were in the large range according to Cohen's criteria.

Table 2. Subskill Improvements and Effect Sizes

Subskill	Cycle 1 Mean	Cycle 2 Mean	Mean Difference	95% Confidence Interval	p	Cohen's d
Analytical Interpretation	68%	88%	20%	14% to 26%	< .001	1.75
Evaluative Judgment	65%	82%	17%	11% to 23%	< .001	1.48
Inferential Comprehension	66%	81%	15%	9% to 21%	< .001	1.39

These results demonstrate consistent statistical gains across all measured dimensions of critical reading. The magnitude of the effect sizes across subskills further indicates that improvement was not marginal but educationally meaningful. Moreover, the narrow confidence intervals suggest stability and precision in the estimated gains across the two instructional cycles.

c. Engagement and Participation

Observation data documented increased active participation from approximately 65 percent of students in Cycle 1 to 92 percent in Cycle 2. Balanced contribution within cooperative groups improved from 55 percent of groups in Cycle 1 to near complete participation in Cycle 2. These percentages reflect structured observation checklist frequencies across sessions.

3.1.2 Qualitative Findings

a. Classroom Observation and Field Notes

Cycle 1 observations documented uneven group interaction, with several students relying on teacher clarification. By Cycle 2, field notes recorded increased peer-initiated questioning, more frequent reference to textual evidence, and more distributed turn-taking. Observation transcripts showed greater use of evaluative language markers associated with argument assessment and inference making. In addition, the frequency of student-generated counterarguments and clarification requests increased noticeably in the second cycle, indicating more sustained engagement with textual meaning. The shift from teacher-mediated explanation to peer-mediated reasoning suggests a restructuring of classroom discourse toward more dialogic and analytically oriented interaction.

b. Student Reflection Journals

Reflective journal entries from more than 80 percent of participants indicated perceived growth in identifying the author's stance and distinguishing main arguments from supporting evidence. Students reported increased awareness of multiple interpretations of the same text and greater confidence in articulating evaluative responses. Several entries also revealed emerging metacognitive awareness, with students describing deliberate strategies for questioning assumptions and verifying claims against textual evidence. This pattern suggests that the intervention not only influenced performance outcomes but also supported the internalization of critical reading strategies.

c. Interview Results

Semi-structured interviews conducted with ten randomly selected students and the instructor yielded five dominant themes: enhanced comprehension, increased confidence, peer collaboration, development of critical thinking, and time management challenges. Participants consistently emphasized the role of structured group discussion in clarifying complex arguments and exposing alternative perspectives. The instructor further noted observable changes in the depth and independence of student responses, particularly during whole-class debriefing sessions.

Table 3. Summary of Interview Themes

Theme	Frequency	Percentage
Enhanced Comprehension	9	90%
Increased Confidence	8	80%
Peer Collaboration	10	100%
Development of Critical Thinking	7	70%
Time Management Challenges	6	60%

All interviewed students acknowledged peer collaboration as beneficial for deeper textual analysis. The instructor reported observable shifts toward student-initiated discussion and reduced dependence on teacher explanation. These convergent perceptions indicate that the cooperative structure functioned not merely as a procedural arrangement but as a catalyst for cognitive engagement. The alignment between student and instructor accounts further strengthens the credibility of the observed transformation in classroom discourse practices.

3.2 Discussion

The present classroom action research examined whether the implementation of the Cooperative Integrated Reading and Composition model within a two-cycle intervention could enhance tertiary EFL students' critical reading skills. Quantitative analyses demonstrated statistically significant improvement between the pre-test and Cycle 2, as well as between Cycle 1 and Cycle 2, with large effect sizes across overall scores and subskills. These gains were accompanied by qualitative shifts in peer discourse, evaluative language use, and student autonomy. Taken together, the findings provide convergent evidence that structured cooperative reading-writing cycles can support measurable development in analytical interpretation, evaluative judgment, and inferential comprehension in a university EFL context.

When situated within prior research, the magnitude of improvement observed in this study warrants careful consideration. Meta-analytic work on cooperative learning reports moderate to large overall effects on reading outcomes (Alacapınar and Uysal, 2020), while studies of CIRC in Indonesian contexts primarily document gains in general reading comprehension rather than critical subskills (Prajogo, 2021; Patty, 2023; Mahdahera and Ridwan, 2023). The effect sizes reported here exceed those typically found in broader meta-analyses. One plausible explanation is the alignment between the intervention design and the targeted construct. Unlike studies measuring broad comprehension, this research operationalized specific critical reading indicators and embedded them directly into cooperative tasks and assessment rubrics grounded in critical literacy frameworks (Luke, 2018; Wallace, 2021). The tight coupling between instructional activities and measured outcomes may have amplified observable gains. Additionally, the small and relatively homogeneous cohort may have contributed to larger standardized effect sizes, a statistical pattern frequently observed in classroom-based interventions with limited sample sizes.

At the same time, alternative explanations must be considered. Improvements may partially reflect testing effects, as repeated exposure to similar critical reading tasks can increase familiarity with question formats. Although parallel rather than identical test forms were used, structural similarity may still have reduced cognitive novelty in Cycle 2. Maturation effects may also have played a role, as students continued to engage with academic texts throughout the semester. However, the statistically significant gain between Cycle 1 and Cycle 2 suggests that instructional refinement contributed to additional progress beyond initial exposure. Moreover, qualitative data indicate not only improved performance but also changes in discourse practices, including increased student initiated questioning and more frequent use of textual evidence. These behavioral shifts are less plausibly explained by testing familiarity alone.

The integration of quantitative and qualitative findings strengthens the explanatory account of the intervention's impact. Large effect sizes in evaluative judgment corresponded with observation transcripts documenting more frequent argument assessment and counterargument construction during group discussion. Similarly, statistically significant gains in inferential comprehension aligned with journal entries describing deliberate efforts to identify implicit meaning and authorial intent. Rather than functioning as parallel strands, the qualitative evidence elucidates the mechanisms through which cooperative interaction may have mediated cognitive development. Peer scaffolding, distributed reasoning, and negotiated interpretation appear to have externalized analytical processes that were subsequently internalized by learners, consistent with social constructivist theory (Brown and Palincsar, 2018; Eun, 2019).

Internal validity considerations require explicit acknowledgment. The absence of a control group limits the capacity to attribute causality exclusively to the CIRC intervention. Instructor involvement as both researcher and facilitator introduces potential expectancy effects, despite mitigation strategies such as rubric based scoring, interrater verification, and triangulation. Furthermore, the two-cycle design captures short term improvement but does not establish long-term retention. These constraints suggest that findings should be interpreted as strong within-group evidence rather than definitive

experimental proof. Future studies employing quasi experimental or randomized designs would strengthen causal claims and enhance generalizability.

Beyond empirical outcomes, the study offers a modest but meaningful theoretical contribution. Previous scholarship has often treated cooperative learning and critical literacy as parallel domains, with limited empirical integration in tertiary EFL contexts (Kim et al., 2020; Misa, 2023). By embedding CIRC within a framework explicitly aligned with critical literacy constructs, this research demonstrates how cooperative structures can operationalize evaluative reading practices rather than merely improve comprehension. The findings suggest that structured peer interaction may function as a mediational space in which critical literacy processes are rehearsed, negotiated, and consolidated. This articulation advances theoretical understanding by linking the micro-level mechanics of cooperative discourse with the macro-level aims of critical literacy development in higher education.

In sum, the discussion underscores that the observed gains cannot be reduced to score improvement alone. The statistically significant progression across cycles, large effect sizes, and convergent qualitative evidence collectively indicate that the intervention reshaped classroom discourse and reading practices in ways consistent with both social constructivist and critical literacy frameworks. While limitations temper the scope of inference, the study provides contextually grounded evidence that cooperative instructional design, when systematically implemented and refined, can support substantive development of critical reading competence in tertiary EFL education.

4. CONCLUSION

This classroom action research examined the implementation of the Cooperative Integrated Reading and Composition model to enhance tertiary EFL students' critical reading skills across two iterative cycles. The findings indicate statistically significant improvement in overall performance and in the subskills of analytical interpretation, evaluative judgment, and inferential comprehension, with large effect sizes and precise confidence intervals. Quantitative gains were corroborated by qualitative evidence documenting shifts toward student-initiated discussion, more consistent use of textual evidence, and greater metacognitive awareness in reflective accounts. At the same time, the study does not establish definitive causal superiority of CIRC over alternative instructional models, given the absence of a control group and the single-class context. The results, therefore, support great within-group improvement but cannot be generalized without caution to broader populations or settings.

Theoretically, the study advances EFL literacy scholarship by demonstrating how cooperative learning structures can operationalize critical literacy constructs within a social constructivist framework, thereby linking peer-mediated interaction to the development of evaluative reading practices in higher education. Pedagogically, it provides evidence that structured cooperative reading writing cycles, when systematically refined, can foster analytical engagement beyond literal comprehension. Methodologically, however, the practitioner-based classroom action research design and limited sample size constrain external validity. Future research should incorporate comparative designs, larger and more diverse cohorts, and longitudinal follow-up to determine the durability and transferability of critical reading gains across contexts.

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