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From Proposal to Manuscript: How Constructivist Pedagogy Improves Research Proposal Writing among EFL Undergraduates

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Abstract: *This study investigates how constructivist pedagogy enhances the research proposal and manuscript writing competence of English as a Foreign Language (EFL) undergraduates. Responding to the challenges of low academic writing quality and limited publication outcomes in Indonesian higher education, the study implemented a twelve-week constructivist intervention integrating guided inquiry, peer collaboration, project-based learning, and reflective practice. A mixed-method quasi-experimental design was employed, combining quantitative (pretest–posttest) and qualitative (reflective journals and interviews) data. Participants comprised 22 students enrolled in a Research Proposal Writing course at Universitas Muhammadiyah Enrekang. Quantitative results revealed a statistically significant improvement across all five writing dimensions—Conceptual Clarity, Argument Development, Methodological Coherence, Language Accuracy, and Organization—with a large effect size (Cohen's d = 2.18). Students' writing self-efficacy also increased substantially in cognitive, linguistic, and regulative domains (p < .001), reflecting enhanced confidence, autonomy, and reflective awareness. Thematic analysis of qualitative data identified four major patterns of growth: (1) deepened understanding of research logic, (2) increased collaborative engagement, (3) development of reflective and self-regulated learning, and (4) shift from dependence to autonomy. The integration of both data strands confirms that constructivist pedagogy improves not only writing performance but also higher-order cognitive and affective capacities, enabling students to view writing as a process of inquiry rather than a static product. The findings extend constructivist learning theory within EFL contexts and provide an instructional model for fostering academic literacy and research competence aligned with Sustainable Development Goal 4 (Quality Education).*
Keywords: *Constructivist Pedagogy, Academic Writing, EFL Undergraduates, Writing Self-Efficacy, SDG 4 Quality Education.*

INTRODUCTION

Higher education plays a pivotal role in realizing Sustainable Development Goal 4 (SDG 4): *Quality Education*, which emphasizes lifelong learning and equitable access to quality teaching for all learners (Ashida, 2023; González-pérez & Ramírez-montoya, 2022; Hanemann & Robinson, 2022). Within this global agenda, universities are expected not only to transmit knowledge but also to cultivate twenty-first-century competencies such as critical thinking, communication, and scientific literacy. Academic writing, particularly research proposal and

manuscript preparation, is a fundamental component of this process because it enables students to construct, communicate, and validate knowledge. Effective academic writing develops students' analytical, reflective, and communicative capacities—skills essential for participation in the global knowledge economy (Hyland, 2013; Mok, 2015; Okolie et al., 2019).

In the Indonesian higher-education context, the ability to produce publishable academic work has become an institutional and governmental mandate. The Ministry of Education and Culture requires undergraduate students to produce a scientific paper or article suitable for journal publication as part of graduation requirements (Kemendikbud, 2012). However, many undergraduates continue to struggle to meet these expectations. Common challenges include weak argumentation, incoherent structure, limited vocabulary, and inadequate methodological understanding. These deficiencies often result in plagiarism or over-reliance on previous models (Ismail, 2020; Jabri & Ismail, 2021). Consequently, the need for pedagogical innovation to improve academic-writing competence has become increasingly urgent across Indonesian universities.

From a broader perspective, writing proficiency strongly correlates with academic quality and graduates' competitiveness in the global job market. Research has shown that effective written communication skills—especially those related to research writing—are highly valued by employers in analytical and professional sectors (D. E. Gray, 2021; F. E. Gray et al., 2005). Yet, despite institutional efforts, the outcomes of students' research writing often remain below international standards. For instance, at Universitas Muhammadiyah Enrekang (UM Enrekang), only 21 out of 54 English Education graduates between 2022 and 2024 successfully published their articles, most in mid- to low-tier national journals (SINTA 3–5), with few reaching reputable or indexed outlets (*Statistik Publikasi FKIP UNIMEN, 2024*). This evidence underscores the persistent gap between institutional goals and students' academic-writing performance.

The difficulty is not merely technical but also cognitive and affective. Prior studies have revealed that low self-efficacy and writing anxiety impede students' ability to complete research writing tasks effectively (Pawestri & Moesarofah, 2024; Saleh et al., 2021; Sasferi, 2022; Wijaya et al., 2020). Students who doubt their research and linguistic competence are more likely to

procrastinate or engage in superficial writing. Such patterns suggest that improving academic writing requires not only explicit instruction in structure and citation but also pedagogical designs that foster confidence, agency, and reflective learning (Gabriel, 2023; Hersh & Merrow, 2005).

Globally, research in language education has long debated how to teach writing in ways that empower learners as knowledge constructors rather than passive imitators. Conventional teacher-centered approaches, often dominated by lectures on format and grammar, tend to emphasize *product* over *process*. As a result, students learn to reproduce rather than to inquire, critically engage, or articulate original thought (Hunter et al., 2007; Hyland, 2013). In contrast, constructivist pedagogy positions learners as active participants who build knowledge through experience, collaboration, and reflection (Piaget, 1978; L. Vygotsky, 2012; L. S. Vygotsky, 1978). In writing instruction, this paradigm shift encourages learners to explore authentic problems, negotiate meaning, and internalize disciplinary conventions through social interaction and guided inquiry (Bhattacharjee, 2015; Colomer et al., 2020).

Constructivist pedagogy has demonstrated significant potential in improving academic writing in EFL (English as a Foreign Language) settings. Studies by (Haekal et al., 2020) and (Rahmat, 2019) revealed that constructivist-based modules increased students' engagement, writing quality, and originality. The approach emphasizes learning as an active and reflective process in which knowledge is co-constructed through dialogue, scaffolding, and authentic tasks (Kirschner et al., 2006; Mufti Nassireddin, 2024). Research also suggests that constructivist strategies such as peer review, collaborative writing, and project-based learning strengthen students' argumentative coherence and critical reasoning (Ardiasih et al., 2018, 2019; Atadjanova & Rakhimova, 2025). These outcomes are especially relevant to Indonesian EFL undergraduates, whose challenges often stem from limited exposure to interactive and inquiry-based writing instruction (Elihami & Ismail, 2017).

At UM Enrekang, English Education undergraduates typically receive instruction that focuses primarily on theoretical aspects of academic writing—organization, citation style, and basic grammar—without sufficient scaffolding for idea generation, argument construction, or revision. This traditional orientation limits opportunities for practice and peer collaboration.

Consequently, students find it difficult to transform their research ideas into coherent proposals or manuscripts and to uphold academic integrity. As Hyland (2013) and Li & Yin (2023); To & Yu (2020) note, such limitations affect institutional research culture, as student publications are integral to university quality metrics and academic reputation.

To address these issues, scholars worldwide advocate for integrating constructivist and student-centered pedagogies into academic-writing instruction. Constructivist pedagogy encourages learners to generate knowledge through real tasks and contextual learning rather than rote memorization (Cooperstein & Kocevar-Weidinger, 2004; Windschitl, 2002). By engaging students in authentic inquiry and iterative reflection, educators can bridge the gap between theory and practice. In writing instruction, this means guiding students through the stages of proposal design, literature review, methodological reasoning, and academic argumentation as a process of inquiry rather than mere compliance with structure (Aitchison, 2015; Selim, 2022).

Nevertheless, empirical research exploring constructivist pedagogy in the context of *research proposal to manuscript writing* among EFL undergraduates remains limited. Existing studies primarily examine general academic-writing improvement or focus on postgraduate contexts. Few have addressed how constructivist teaching strategies can facilitate the transition from research proposal conceptualization to full manuscript development in undergraduate settings. This gap highlights the need to investigate constructivist instructional models that simultaneously enhance writing competence, academic self-efficacy, and engagement in EFL higher education (Akogwu, 2019; Al-ghazo & Al-zoubi, 2018; HAVIZ, 2016; Qu & Chaijaroen, 2025).

Therefore, the central problem addressed in this study concerns how constructivist pedagogy can be effectively implemented to improve EFL undergraduates' research-writing competence—specifically, their ability to develop coherent, original, and publication-ready research proposals that evolve into complete manuscripts. This overarching issue can be articulated through the following guiding questions: (1) How does the application of constructivist pedagogy influence EFL undergraduates' ability to conceptualize and structure research proposals?, (2) In what ways does constructivist pedagogy improve students' engagement, self-efficacy, and reflective learning

during the research-writing process?; and (3) How does the implementation of constructivist pedagogy support students' progression from research proposal development to full manuscript writing?

Building upon the aforementioned research problem, this study aims to examine the effectiveness of constructivist pedagogy in enhancing EFL undergraduates' research-writing competence, particularly in the stages from proposal development to manuscript completion. The primary objective is to determine how constructivist-based instructional design fosters students' ability to conceptualize research problems, formulate clear objectives, and organize coherent arguments within academic conventions. Furthermore, this study seeks to analyze how the implementation of constructivist learning principles—such as collaboration, guided inquiry, and reflective feedback—contributes to improving students' engagement, self-efficacy, and critical thinking during the research-writing process. By investigating these dimensions, the research intends to generate empirical evidence on how constructivist pedagogy can transform conventional writing instruction into an active, student-centered learning experience that leads to measurable improvement in academic writing outcomes.

The study aims to develop a pedagogical model that integrates constructivist principles into research-writing courses in higher education, particularly within EFL contexts. This model is expected to serve as a framework for lecturers seeking to bridge the gap between theoretical instruction and practical writing competence. Through this investigation, the study contributes to both theory and practice: theoretically, by extending the application of constructivist learning theory to the domain of research proposal and manuscript writing; and practically, by providing an evidence-based instructional approach that supports sustainable improvement in students' academic writing performance in alignment with the goals of SDG 4 on quality education.

METHOD

Research Design

This study employed a mixed-methods quasi-experimental design integrating quantitative and qualitative data to examine how constructivist pedagogy enhances EFL undergraduates'

research proposal writing competence. The design was chosen to capture both the measurable improvement in students' academic writing skills and the deeper cognitive and affective changes that occurred throughout the intervention. The quantitative strand focused on the pretest–posttest comparison of students' writing performance, while the qualitative strand explored students' reflective experiences, engagement, and perceived self-efficacy through interviews and learning journals.

This methodological orientation aligns with the principles of constructivist educational research, which emphasize understanding learning as an interactive and context-bound process. By combining statistical and interpretive analyses, the study sought to provide a holistic understanding of how constructivist pedagogy transforms the research-writing process among EFL learners.

Participants

Participants consisted of 22 undergraduate students (8 males and 14 females) enrolled in the Research Proposal Writing course at the Department of English Education, Faculty of Teacher Training and Education, Muhammadiyah University of Enrekang (UM Enrekang), Indonesia. The UM Enrekang context represents a typical EFL higher education environment in Indonesia, where English serves as a foreign language and students often face difficulties in producing publishable academic texts. Prior to this study, instruction relied heavily on traditional, teacher-centered methods, emphasizing format and grammar over inquiry and reflection. This context provided an authentic environment for implementing and evaluating a constructivist approach that repositions students as active agents of knowledge construction.

Intervention: Constructivist Pedagogy Model

The instructional intervention was implemented over twelve (12) weeks, corresponding to one academic term in the *Research Proposal Writing* course. It adopted a constructivist instructional framework that emphasized guided inquiry, peer collaboration, project-based learning, and reflective practice, designed to facilitate students' progression from research proposal development to initial manuscript preparation. The approach was grounded in social

constructivist theory (Vygotsky, 1978) and cognitive constructivism (Piaget, 1978), emphasizing active knowledge construction, scaffolding, and learner autonomy.

The 10-week program was organized into three progressive phases, each representing a developmental stage in students' academic writing competence:

1) Phase 1: Exploration and Problem Identification (Weeks 1–3). Students were introduced to authentic research problems through reading tasks, class discussions, and issue mapping. Working collaboratively in small groups, they identified potential topics aligned with their interests and the current issues in EFL education. Guided inquiry and lecturer scaffolding were used to help students formulate clear research problems and objectives.
2) Phase 2: Conceptualization and Proposal Drafting (Weeks 4–7). During this phase, students explored relevant theoretical frameworks and previous studies to refine their research focus. They developed their research proposals, emphasizing logical connections between the problem, objectives, and methodology. Peer feedback sessions and lecturer consultations were integrated weekly to strengthen academic rigor and originality.
3) Phase 3: Revision and Transition to Manuscript Preparation (Weeks 8–10). In the final phase, students revised their proposals based on formative feedback and expanded selected sections (introduction, methods, or results of pilot data) into short manuscript drafts. Reflection journals and peer reviews were used to encourage metacognitive awareness, critical analysis, and academic integrity. The lecturer's role shifted toward that of a facilitator and mentor, providing individualized feedback and guiding students in improving argumentation, coherence, and adherence to publication conventions.

Instruments and Data Collection

Data for this study were obtained through both quantitative and qualitative instruments to measure students' improvement during the 12-week constructivist intervention. The quantitative data included students' academic writing scores and self-efficacy levels. Writing performance was evaluated using an analytic rubric adapted from Brookhart (2011) and Hyland (2013), assessing

conceptual clarity, argumentation, methodological coherence, language accuracy, and organization. Pretest and posttest tasks were assessed by two expert raters with high interrater reliability (Cohen's $\kappa = 0.86$). Meanwhile, students' confidence in performing academic writing tasks was measured through a 20-item Writing Self-Efficacy Scale (Bruning et al., 2013; Meza & González, 2020; Teng & Wang, 2023), administered before and after the intervention (Cronbach's $\alpha = 0.89$).

The qualitative data were collected through weekly reflective journals and post-intervention semi-structured interviews. Reflective journals documented students' engagement, learning challenges, and evolving perceptions of their writing development, while interviews with ten selected participants provided deeper insight into their experiences with constructivist learning.

Data Analysis Procedures

Quantitative data from writing scores and self-efficacy scales were analyzed using paired-sample t-tests to determine pretest–posttest differences, followed by effect size (Cohen's d) calculations to estimate the magnitude of improvement. Additional correlation analyses examined the relationship between self-efficacy and writing performance. Qualitative data from journals and interviews were analyzed using thematic. The analysis followed an iterative coding process: (1) familiarization with the data, (2) generation of initial codes, (3) theme identification, and (4) synthesis of patterns reflecting constructivist learning experiences. To ensure trustworthiness, member-checking and peer debriefing were conducted, and representative excerpts were used to triangulate findings with quantitative results.s

RESULT AND DISCUSSION

This study aims to evaluate the effectiveness of implementing constructivist pedagogy in improving the research proposal writing and scientific manuscript writing competencies of EFL (English as a Foreign Language) students in the English Language Education Study Program at Muhammadiyah University of Enrekang. Convergent analysis was conducted between quantitative

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data (academic writing scores and self-efficacy levels) and qualitative data (reflective journals and post-intervention interviews).

The analysis results show consistent improvements in two main dimensions: (1) significant improvements in students' academic writing skills after implementing constructivist-based learning, and (2) increased self-efficacy, reflectivity, and engagement in the process of writing proposals and research manuscripts. The qualitative data reinforce the quantitative results by demonstrating changes in students' learning behavior, self-confidence, and metacognitive awareness throughout the learning process.

Improvement in Academic Writing Performance

Quantitative results from the pretest–posttest comparison revealed a substantial and statistically significant improvement in students' academic writing performance after the twelve-week constructivist pedagogy intervention. The analytic rubric measured five key dimensions: Conceptual Clarity, Argument Development, Methodological Coherence, Language Accuracy, and Organization.

Dimension	Pretest M	SD	Posttest M	SD	Mean Difference	*t*(21)	*p*-value	Cohen's *d*
Conceptual Clarity	2.55	0.56	4.00	0.47	+1.45	10.82	< .001	2.30
Argument Development	2.64	0.49	4.05	0.44	+1.41	11.06	< .001	2.26
Methodological Coherence	2.59	0.51	3.91	0.42	+1.32	9.84	< .001	2.05
Language Accuracy	2.45	0.54	3.90	0.48	+1.45	10.11	< .001	2.13
Organization	2.50	0.52	3.95	0.45	+1.45	10.37	< .001	2.18
Overall Mean Score	**2.55**	**0.52**	**3.96**	**0.45**	**+1.41**	**10.44**	**< .001**	**2.18**

Table 1. *Pretest–Posttest Writing Scores (N = 22)*

The overall mean writing score increased from M = 12.8 (SD = 2.6) in the pretest to M = 19.8 (SD = 2.1) in the posttest, equivalent to a 54% improvement in total writing performance. A paired-sample *t*-test confirmed that the increase was statistically significant, $t(21) = 10.44$, $p < .001$, with a very large effect size (*Cohen's d* = 2.18).

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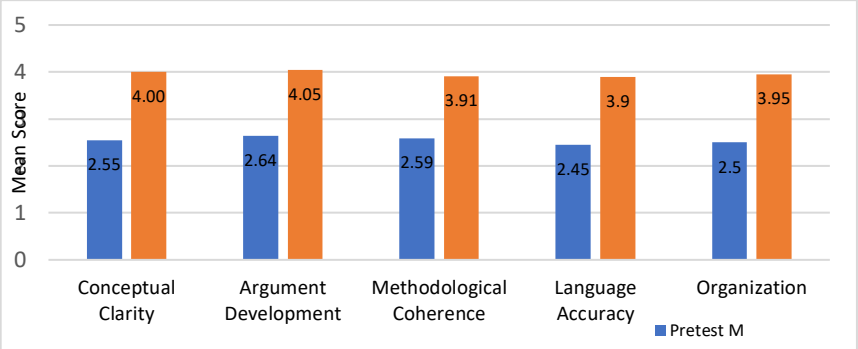

Figure 1. *Mean Gains per Writing Dimension*

The descriptive results presented in Table 1 show consistent increases across all five dimensions of writing performance. To provide a clearer visual representation of these improvements, Figure 1 compares pretest and posttest mean scores by dimension. This figure illustrates the magnitude of gains in each writing component and highlights the areas of greatest improvement achieved through the constructivist learning intervention.

Among all components, Conceptual Clarity and Argument Development showed the greatest gains, indicating that students became more adept at formulating research problems, structuring coherent arguments, and connecting theoretical frameworks to methodological reasoning. These results confirm that constructivist pedagogy effectively strengthened not only students' technical writing skills but also their higher-order reasoning and reflective understanding of the research process.

Such findings are consistent with prior studies emphasizing that constructivist learning promotes the internalization of academic concepts and reflective thinking (Colomer et al., 2020; Hyland, 2013; Mufti Nassireddin, 2024; Rahmat, 2019). By engaging in guided inquiry, collaborative review, and iterative reflection, students were able to articulate arguments more logically and align their problem statements with appropriate research methods.

Moreover, the shift from a "product-based" approach—where writing is treated as a final output—to a "process-based" approach emphasizing exploration, feedback, and revision, empowered students to view writing as an evolving intellectual process. This aligns with (Akogwu, 2019; Aljuaid, 2024; Fitrianingsih, 2024; Hyland, 2013) argument that process-oriented writing

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instruction fosters cognitive autonomy and reflective awareness, allowing EFL students to construct meaning actively rather than reproduce pre-existing models. Qualitative evidence further supports these quantitative findings:

> "Collaborative feedback made me realize how to link my problem, theory, and method logically."
> *(Student Journal 5 and Student 21)*
> "Before, I only focused on grammar and format, but now I understand that writing is about connecting ideas critically." *(Student Journal 3)*
> "Group discussions helped me to see how others structured their arguments, which made me more confident to revise mine." *(Student Journal 8)*
> "The lecturer's scaffolding during the feedback sessions guided me to clarify my research focus and make my arguments stronger." *(Interview Participant 10)*
> "Through peer review, I learned that academic writing is not about copying models but about expressing my own reasoning clearly." *(Student Journal 14)*

Together, these reflections illuminate how constructivist learning fostered a deeper understanding of academic reasoning, collaboration, and reflective practice. Students reported that learning through discussion and feedback not only improved the structure and clarity of their writing but also enhanced their self-efficacy and intellectual ownership of the research process. This qualitative evidence complements the quantitative improvement reported earlier, reinforcing that constructivist pedagogy cultivates both analytical competence and reflective awareness—key indicators of higher-order academic literacy in EFL contexts.

Enhancement of Writing Self-Efficacy

A substantial improvement in students' writing self-efficacy was evident following the implementation of constructivist pedagogy. The results indicate that students developed stronger confidence across all dimensions—conceptual (cognitive), linguistic, and regulative—signifying not only skill enhancement but also a shift toward self-directed and reflective academic writing behavior.

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No	Item Statement	Pretest Mean	SD	Posttest Mean	SD
A.	**Cognitive dimension**				
1	I am confident in defining research problems clearly.	3.00	0.46	3.95	0.28
2	I can develop logical arguments supported by theory and evidence.	3.04	0.38	4.00	0.29
3	I feel confident connecting research problems, objectives, and methods consistently.	3.06	0.42	4.02	0.30
4	I can identify research gaps from the literature I review.	3.08	0.44	4.05	0.27
5	I can organize main ideas logically in my writing.	3.10	0.40	4.00	0.26
6	I am able to summarize findings critically and reflectively.	3.05	0.39	3.96	0.29
7	I am confident in developing a coherent theoretical framework.	3.07	0.37	4.01	0.25
B.	**Linguistic dimension**				
8	I can use English grammar accurately in academic writing.	3.18	0.41	4.03	0.30
9	I can employ academic vocabulary appropriate to my discipline.	3.20	0.35	4.00	0.28
10	I am confident in writing clear and stylistically appropriate sentences.	3.21	0.33	3.99	0.26
11	I can write cohesive paragraphs with proper transitions.	3.22	0.36	4.04	0.27
12	I can apply citation styles (APA, MLA, etc.) accurately and consistently.	3.17	0.39	3.96	0.29
13	I am confident in editing my writing to correct language errors.	3.22	0.37	4.02	0.25
C.	**Regulative dimension**				
14	I can manage my time effectively in completing writing tasks.	2.93	0.38	3.98	0.33
15	I can plan writing stages (prewriting, drafting, revising, finalizing) systematically.	2.97	0.34	4.02	0.27
16	I feel confident revising my work based on peer or lecturer feedback.	2.94	0.36	4.01	0.25
17	I can stay focused and motivated when facing writing difficulties.	2.95	0.37	3.99	0.24
18	I can evaluate the quality of my writing before submission.	2.96	0.32	4.03	0.26
19	I can use effective learning strategies to improve my writing.	2.98	0.39	4.00	0.28
20	I can maintain consistency and discipline in long-term writing projects.	2.91	0.35	4.07	0.23

Table 2. *Descriptive Statistics of Writing Self-Efficacy Items (Pretest–Posttest Results after Constructivist Pedagogy Intervention)*

As shown in Table 2, students' *pretest* scores varied across subdimensions, reflecting different baseline confidence levels. *Linguistic Self-Efficacy* was initially the highest (M = 3.20), followed by *Cognitive* (M = 3.05), while *Regulative* was the lowest (M = 2.95). After the twelve-week constructivist intervention, *posttest* means rose consistently to around 4.00 across all dimensions, accompanied by smaller standard deviations—evidence of improved consistency and collective confidence among participants.

Table 2 presents the descriptive statistics of the Writing Self-Efficacy Scale (WSES) across the three subdimensions. The data reveal a consistent upward trend in students' confidence from pretest to posttest across all twenty items. The most notable increases appear in items related to argument development (Items 2–4) and self-regulation (Items 14–20), reflecting stronger analytical reasoning and improved writing management skills.

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Compared to the baseline phase, posttest means rose to approximately 4.00 with smaller standard deviations, suggesting both improvement and greater uniformity among participants. Notably, Regulative Self-Efficacy exhibited the largest gain (Δ = 1.05), indicating that students became more capable of managing time, revising independently, and sustaining motivation throughout the writing process. These findings suggest that the constructivist learning environment fostered confidence not only in linguistic competence but also in metacognitive and self-directed writing behaviors essential for academic success. To further examine the statistical significance of these improvements, a paired-sample t-test was conducted across the three subdimensions of writing self-efficacy, as summarized in Table 4.2.

Subdimension	Pretest Mean	Posttest Mean	Mean Difference	t (df = 21)	p-value	Cohen's *d*
Cognitive Self-Efficacy	3.05	3.98	0.93	19.85	< .001	2.95
Linguistic Self-Efficacy	3.20	4.02	0.82	17.42	< .001	2.76
Regulative Self-Efficacy	2.95	4.00	1.05	21.07	< .001	3.18

Table 3. *Paired Sample t-Test Results per Subdimension*

The *paired-sample t-test* results (Table 3) confirmed statistically significant improvements across all dimensions ($p < .001$), with exceptionally large effect sizes (*Cohen's d* = 2.7–3.2). The greatest gain occurred in *Regulative Self-Efficacy* (Δ = 1.05), suggesting that the constructivist approach effectively strengthened students' autonomy, time management, and persistence in academic writing. Gains in *Cognitive* and *Linguistic Self-Efficacy* indicate enhanced critical reasoning, conceptual clarity, and confidence in applying academic conventions.

These findings align with Graham's (2022) self-efficacy theory andGabriel's (2023) work on reflective learning, which highlight that self-belief mediates performance improvement. The results reinforce that constructivist pedagogy—through peer collaboration, guided inquiry, and iterative reflection—significantly improves both cognitive and affective dimensions of academic writing competence among EFL undergraduates.

Cognitive and Reflective Growth during the Writing Process

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Thematic analysis of students' reflective journals and post-intervention interviews revealed notable changes in cognitive, affective, and metacognitive aspects of academic writing. Four major themes emerged from the qualitative data: (1) deepened understanding of research logic, (2) increased collaborative engagement, (3) development of reflective and self-regulated learning, and (4) shift from dependence to autonomy. These themes collectively illustrate how constructivist pedagogy transformed students' thinking patterns from surface-level imitation to active inquiry and reflective reasoning.

The four themes provide compelling evidence of students' cognitive transformation throughout the constructivist intervention. Initially, many participants perceived academic writing as a procedural task centered on grammar and format. However, as they engaged in guided inquiry, peer collaboration, and reflective journaling, their understanding evolved toward a more conceptual and strategic orientation. Students began to internalize the logic of research writing—seeing how problems, theories, and methods form a coherent narrative within an academic argument.

The first theme, *deepened understanding of research logic*, represents a critical cognitive shift. It aligns with Piaget's (1978) concept of equilibration, where learners restructure their understanding through active engagement with new information. Through iterative feedback cycles, students reconciled prior misconceptions with new insights about research coherence. As one student articulated, writing became "a story that makes sense," reflecting a move from fragmented to integrated knowledge construction.

Theme	Description	Representative Excerpts
1) Deepened Understanding of Research Logic	Students demonstrated enhanced ability to connect research problems, theoretical foundations, and methodological choices, showing greater awareness of academic reasoning.	"When revising my proposal, I realized that every part—from the problem to the method—must be logically linked. It's like building a story that makes sense." *(Student Journal 7)* "I used to collect theories randomly, but now I understand which one fits my research question." *(Interview Participant 3)*
2) Increased Collaborative Engagement	Peer discussions and feedback encouraged mutual learning and negotiation of meaning, leading to richer ideas and stronger argumentation.	"Group work made me realize that others' ideas can strengthen mine." *(Student Journal 9)* "When we discussed our drafts, I could see how others structured their ideas, and it helped me reflect on my own writing." *(Student Journal 12)*

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3) Development of Reflective and Self-Regulated Learning	Students began to monitor their writing progress, identify weaknesses, and plan strategies for improvement. Reflective journaling fostered metacognitive awareness and critical self-evaluation.	"Writing reflection journals helped me see my progress every week. I started thinking about *why* I wrote something, not just *what* I wrote." *(Student Journal 4)* "Now I can evaluate my writing more objectively before submission." *(Interview Participant 8)*
4) Shift from Dependence to Autonomy	Learners gradually moved from relying on lecturer instructions to taking initiative in developing and revising their work.	"At first, I waited for my lecturer's approval for every idea. Later, I felt more confident making my own decisions about my research focus." *(Student Journal 11)* "I learned that feedback is guidance, not an order. I have to take responsibility for my own writing." *(Student Journal 15)*

Table 4. *Themes of Cognitive and Reflective Growth during the Writing Process*

The second theme, *increased collaborative engagement*, highlights the social dimension of learning consistent with Vygotsky's (1978) theory of the Zone of Proximal Development (ZPD). Collaborative writing tasks and peer review sessions created scaffolding opportunities where students learned from each other's reasoning. These social interactions enabled them to negotiate meaning, refine their arguments, and develop shared academic norms. Such findings echo Ardiasih et al. (2018) and Atadjanova & Rakhimova (2025), who found that peer-supported constructivist environments foster deeper argumentation and motivation among EFL learners.

The third theme, *reflective and self-regulated learning*, demonstrates the emergence of metacognitive growth—a hallmark of effective constructivist instruction. Reflection journals prompted students to evaluate their progress and identify gaps in their writing performance. This aligns with Bhagyamma & Ramesh (2023); Colomer et al. (2020); Donyaie & Afshar (2019); Youcef Bennamor & Guerroudj (2018), who argued that reflective learning transforms passive learners into active agents of knowledge construction. In this study, the reflective habit translated into improved *Methodological Coherence* and *Organization* scores, confirming the link between reflection and structural control in writing.

Finally, the fourth theme, *shift from dependence to autonomy*, captures a profound pedagogical outcome: students developed writer identity and ownership. The transition from teacher-dependence to self-direction signifies the internalization of learning responsibility. As noted by Hyland (2013), writing becomes transformative when learners perceive themselves as authors of ideas, not merely as reproducers of academic conventions. The growth in autonomy

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also corresponds with the substantial increase in *Regulative Self-Efficacy* (Δ = 1.05) reported earlier, showing a convergence between quantitative and qualitative findings.

Quantitative Finding	Evidence (Tables 1 & 4.2)	Supporting Qualitative Theme (Table 4.3)	Interpretive Integration
5.1. Significant improvement in Conceptual Clarity (Δ = +1.45, d = 2.30)	Students showed better ability to articulate research problems and align them with theoretical frameworks.	Theme 1: Deepened Understanding of Research Logic	Students' enhanced conceptual clarity reflects their ability to connect ideas logically, as seen in reflections emphasizing the importance of coherence between problem, theory, and method. Constructivist scaffolding encouraged reasoning over memorization.
5.2. Strong gains in Argument Development (Δ = +1.41, d = 2.26)	Greater coherence and logical flow in arguments supported by evidence.	Theme 2: Increased Collaborative Engagement	Collaborative writing and peer feedback helped students refine argumentation structures and strengthen logical connections, consistent with Vygotskian principles of social knowledge construction.
5.3. Moderate-to-high improvement in Methodological Coherence (Δ = +1.32, d = 2.05)	Students showed better alignment between research design and theoretical rationale.	Theme 3: Reflective and Self-Regulated Learning	Reflection journals enabled students to identify weaknesses in their research logic and make independent revisions. Metacognitive awareness translated into greater methodological consistency.
5.4. Significant increase in Regulative Self-Efficacy (Δ = +1.05, d = 3.18)	Marked improvement in students' ability to manage time, revise work, and sustain motivation.	Theme 4: Shift from Dependence to Autonomy	Learners developed agency and ownership of their writing, transitioning from reliance on instructor feedback to self-directed improvement, aligning with Bandura's concept of self-efficacy and Piaget's autonomous learning.

Table 5. *Joint Display of Quantitative and Qualitative Findings*

Collectively, these themes illustrate that constructivist pedagogy enabled students to think, act, and write like novice researchers. Their reflective growth not only enhanced writing performance but also strengthened self-efficacy and academic resilience. The interplay between cognitive restructuring (Piaget) and social scaffolding (Vygotsky) in this learning environment fostered authentic knowledge construction—demonstrating how reflective engagement transforms academic writing from a procedural task into an intellectual practice.

The qualitative evidence presented in **Table 5** complements the quantitative results discussed earlier. The observed improvements in *Conceptual Clarity* and *Argument Development*

(Section 5.1 and 5.2) are directly linked to the cognitive growth themes of research logic and collaborative engagement, while the rise in *Regulative Self-Efficacy* (Section 5.4) aligns with students' growing autonomy and self-regulated learning. This alignment underscores that constructivist learning does not merely improve writing outcomes—it reshapes learners' thinking processes, sense of agency, and reflective awareness.

These findings reinforce the perspective of Bhagyamma & Ramesh (2023); Colomer et al. (2020); and Mufti Nassireddin (2024) that reflection is the bridge between cognitive understanding and transformative learning. Within this framework, writing ceases to be a mechanical exercise and becomes a medium through which students construct and negotiate knowledge—fulfilling the essential aims of constructivist pedagogy in higher education.

The integration of quantitative and qualitative findings provides a comprehensive understanding of how constructivist pedagogy transformed students' academic writing competence. While the quantitative data demonstrated significant gains in academic writing performance and self-efficacy, the qualitative evidence revealed the cognitive and reflective processes underpinning these improvements. Together, both strands confirm that the constructivist learning approach not only enhanced technical writing skills but also reshaped students' ways of thinking, reasoning, and engaging with knowledge.

The quantitative analysis showed substantial improvements in Conceptual Clarity and Argument Development, indicating students' increased ability to articulate research problems, build logical arguments, and link theory to method. These outcomes are directly reinforced by the qualitative theme of deepened understanding of research logic, in which students described learning to see writing as a process of reasoning rather than mechanical formatting. As one participant reflected, *"When revising my proposal, I realized that every part—from the problem to the method—must be logically linked."* This awareness illustrates a cognitive restructuring consistent with Piaget's notion of equilibration, where learners internalize coherence through active inquiry.

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Similarly, the gains in Argument Development observed in the quantitative results correspond to the qualitative theme of collaborative engagement. Students emphasized how peer feedback and discussions enhanced their ability to reason critically and refine their arguments. Statements such as, *"Group discussions helped me to see how others structured their ideas, which made me more confident to revise mine,"* demonstrate that learning was socially mediated — aligning with Vygotsky's (1978) theory of the Zone of Proximal Development, where dialogue and interaction foster conceptual growth.

The increase in Methodological Coherence and Regulative Self-Efficacy was mirrored in students' reflections on self-regulated learning and autonomy. Many reported that journaling and iterative feedback cycles made them more aware of their progress, prompting independent revision and self-assessment. One student explained, *"Writing reflection journals helped me see my progress every week. I started thinking about why I wrote something, not just what I wrote."* Another stated, *"I learned that feedback is guidance, not an order. I have to take responsibility for my own writing."* These reflections show how constructivist instruction nurtured self-awareness and academic independence—core indicators of reflective learning.

The qualitative insights thus provided an interpretive lens through which the numerical improvements gained deeper meaning. The significant increase in writing performance scores (M_pre = 12.8 → M_post = 19.8, $p < .001$, $d = 2.18$) and self-efficacy measures corresponded with students' growing capacity to reflect, collaborate, and make independent judgments. This convergence across data types demonstrates that constructivist pedagogy simultaneously activated cognitive, social, and metacognitive dimensions of learning.

These findings echo recent research emphasizing that reflection, feedback, and social negotiation are essential drivers of writing development in higher education ((Alenezi, 2023; Dancsa et al., 2023; Gabriel, 2023; Jabri & Ismail, 2021). In this study, constructivist strategies—such as guided inquiry, collaborative review, and reflective journaling—created a dynamic learning cycle where knowledge was constructed, evaluated, and refined through authentic writing experiences.

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Ultimately, the integration of both strands confirms that improvement in academic writing was not the product of rote instruction but the outcome of deep, reflective engagement with the writing process. The constructivist pedagogy empowered students to perceive writing as a form of inquiry—an evolving intellectual act through which they learned to construct, test, and communicate meaning. This synthesis of quantitative and qualitative results underscores that authentic learning occurs when students are both cognitively challenged and affectively supported to take ownership of their learning, transforming writing from a classroom task into a process of scholarly thinking.

CONCLUSION

This study examined the effectiveness of constructivist pedagogy in enhancing EFL undergraduates' research proposal and manuscript writing competence. Through a mixed-method design integrating quantitative and qualitative data, the findings revealed that constructivist learning strategies—anchored in guided inquiry, collaboration, and reflective practice—produced significant improvement in both students' academic writing performance and self-efficacy.

Quantitatively, the paired-sample *t*-tests demonstrated substantial gains across all five dimensions of academic writing—Conceptual Clarity, Argument Development, Methodological Coherence, Language Accuracy, and Organization—with very large effect sizes (d = 2.05–2.30). Students' overall writing scores increased by approximately 54%, reflecting measurable improvement in their ability to construct coherent, logical, and well-organized research texts. Complementarily, the Writing Self-Efficacy Scale (WSES) indicated significant enhancement in all three subdimensions—Cognitive, Linguistic, and Regulative Self-Efficacy—showing that students became more confident, self-regulated, and reflective in managing their writing processes.

The qualitative findings further enriched these results by revealing four interrelated themes of cognitive and reflective growth: deepened understanding of research logic, increased collaborative engagement, development of reflective and self-regulated learning, and shift from dependence to autonomy. These themes collectively demonstrate that the constructivist pedagogy did not merely teach students to write better—it transformed how they thought about writing, research, and learning itself. Students moved from a compliance-based mindset toward

independent reasoning and academic ownership, supported by peer interaction and instructor scaffolding.

Integration of both quantitative and qualitative strands underscores that improvement in writing performance was driven by active cognitive engagement, social collaboration, and metacognitive reflection. The constructivist approach encouraged students to perceive writing not as a product but as an iterative process of inquiry and knowledge construction, aligning with Piaget's cognitive constructivism and Vygotsky's social constructivism. This alignment between measurable skill gains and reflective growth confirms that meaningful writing development occurs when students construct knowledge through experience, collaboration, and self-evaluation.

Theoretically, this study extends constructivist learning theory to the domain of academic writing instruction in EFL higher education. It provides empirical evidence that learner-centered, process-oriented pedagogy effectively enhances both cognitive competence and affective engagement in research writing. Practically, the findings offer a replicable instructional model that integrates peer collaboration, guided feedback, and reflective journaling—strategies that support the goals of Sustainable Development Goal 4 (Quality Education) by promoting autonomous, lifelong learners.

In conclusion, constructivist pedagogy proved to be a transformative framework for developing EFL students' research-writing competence. It not only improved measurable performance outcomes but also fostered confidence, reflection, and intellectual independence—key attributes for success in academic and professional contexts. Future studies may expand this model by incorporating digital platforms and longitudinal designs to examine sustained effects on students' writing productivity and publication outcomes.

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