






Navigating Academic Writing Challenges through Peer Review: A High School Student's Perspective

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Abstract. Academic writing contributes to the development of critical, analytical, and systematic thinking skills. However, various studies indicate that students still face serious challenges, ranging from difficulties in organising ideas and constructing coherent arguments to anxiety in writing. This study aims to identify the main difficulties students encounter in academic writing and explore the role of peer review as a pedagogical strategy that can support the learning of scientific writing. The research method used a quantitative approach with a survey design. Data were collected through a Likert scale questionnaire administered to 356 eleventh-grade students from five senior high schools in Bangkalan Regency, Indonesia. Data were analysed using descriptive statistics, normality and homogeneity tests, Spearman's correlation, and instrument reliability tests. The study results showed that 78% of students experienced difficulties in organizing ideas, 65% lacked confidence in revising, 58% were hampered by academic vocabulary, and 62% experienced writing anxiety. Furthermore, only 41% of students considered peer review useful and structured, while the majority considered its implementation shallow due to a lack of pedagogical structure and substantive feedback skills. Spearman's correlation test found a significant positive relationship between writing challenges and peer review ($r = 0.538$; $p < 0.01$). These findings confirm that the effectiveness of peer review depends on explicit, structured learning strategies that guide students to produce truly substantive feedback. Practical implications include the need for teacher training in designing structured peer reviews with rubrics, feedback modeling, and reflective guidance.

Keywords: Academic Writing, Peer Review, Secondary School Students, Writing Difficulties, Pedagogical Strategies.

1 Introduction

Scientific writing is an essential skill in secondary and higher education because it develops students' critical, analytical, and systematic thinking skills. Reflective and collaborative writing activities can improve analytical and critical thinking skills [17]. Critical thinking skills are significantly related to scientific writing skills [6, 41]. Furthermore, scientific writing ability is an important indicator of literacy achievement and students' readiness to participate in a knowledge-based society. Thus, scientific writing instruction is not merely a technical activity focused on the written product but serves as the foundation for higher-order thinking literacy.

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Scientific writing skills are explicitly included in the Merdeka Curriculum, particularly at the Grade XI level, with learning outcomes that require students to produce data-based, argumentative, and academically sound scientific writings. This learning objective requires students to compose texts based on scientific structure, from problem formulation, theoretical framework, to conclusions, using standard, logical, and data-based language. Scientific writing not only trains language skills and knowledge transfer, but is also crucial in developing critical, analytical, and systematic thinking skills among students [51]. Therefore, scientific writing practices in secondary schools require more integrative and strategy-based pedagogical support.

Scientific writing instruction in secondary schools still faces serious challenges. Students often struggle with organising ideas, constructing coherent arguments, using academic vocabulary, and making substantive revisions to their writing [20, 37]. These difficulties are exacerbated by low motivation, limited learning time, minimal modelling of academic genres, and instructional approaches that are still oriented towards the final product [50, 56]. As a result, students often perceive academic writing as merely a technical task rather than a reflective process that builds metacognitive awareness.

Previous research on academic writing difficulties has mostly focused on the context of English as a Foreign Language (EFL) and emphasised student learning outcomes [19, 42, 44]. Studies that specifically investigate the challenges of academic writing in the context of Indonesian language in secondary schools are still relatively limited. Additionally, there is a pedagogical gap where teachers are not always equipped with process-based instructional strategies and formative feedback that can help students develop autonomous writing strategies [30]. This condition underscores the need for alternative learning strategies that can strengthen student engagement and provide continuous instructional support.

One potential strategy is peer review, which is the practice of students providing feedback to one another. Previous research has reinforced the importance of integrating peer review into academic writing instruction. Systematic review found cognitive, social, affective, and metacognitive benefits of peer feedback, while also identifying barriers related to both feedback recipients and providers [53]. Students view peer review as an important tool for critical thinking and self-reflection. The effectiveness of peer feedback in improving the quality of academic review writing in a second language [22], while emphasise the role of the online context in fostering a supportive peer feedback environment.

Peer review has great potential to improve the quality of academic writing, but its implementation in classrooms still shows significant variation and is often inconsistent due to limitations in planning, student readiness, and teacher competence in facilitating it [21]. Formal peer review training remains highly limited, while effective practices require support in the form of rubric guidelines, ongoing dialogue, and clear instructions [29]. Furthermore, most previous studies have emphasised the general effectiveness of peer review, such as improvements in revision quality or student engagement, without directly linking it to the real writing difficulties experienced by students, such as argument development, coherence, and mastery of academic structure. Additionally, the dimension of teachers' perceptions as primary facilitators in the implementation of peer review is often overlooked, despite the importance of teachers' perspectives in understanding pedagogical challenges that arise in real-world practice.

This situation highlights a research gap, namely the lack of quantitative studies that simultaneously map students' academic writing challenges and teachers' perceptions of peer review, necessitating more comprehensive research to address this gap.

The novelty of this study lies in the integration of quantitative analysis that simultaneously explores students' perceptions of scientific writing challenges and the effectiveness of peer review as a pedagogical strategy. Unlike previous studies that have focused more on the context of EFL or only highlighted students' perspectives, this study contributes new insights by mapping the relationship between writing difficulties, peer review practices, instructional support, and the role of technology in scientific writing instruction in Indonesian secondary schools. This study provides a more comprehensive and empirically grounded understanding of how peer review can be optimised to address pedagogical gaps and enhance academic literacy quality at the secondary level.

Based on this context, this study focuses on two main questions: What are the main difficulties students face in scientific writing? How do students perceive the role of peer review in overcoming these challenges? This article aims to quantitatively analyse students' perceptions of academic writing challenges and the role of peer review in overcoming them. By integrating these two perspectives, this study not only maps the difficulties of academic writing but also assesses peer review as an effective pedagogical strategy. The main contribution of this study lies in providing more comprehensive empirical evidence to support the development of a more contextualised, student-centred, and adaptive model of academic writing instruction in secondary schools.

2 Literature Review

2.1 Writing Difficulties of Students in High Schools Context

Writing difficulties among high school students are a significant obstacle that affects academic success. Students' difficulties range from problems with grammar and mechanics to difficulties in articulating complex ideas and synthesising information from various sources, which affects the quality of their writing. Students struggle to organise their thoughts, adhere to grammatical conventions, and develop cohesive arguments in their writing [9]. This study shows that students have difficulty using cohesive devices and producing grammatically complex sentences due to a lack of advanced writing skills among typical high school students. Additionally, students struggle to integrate school-based writing with real-life contexts, thereby reducing motivation and engagement [3]. Writing anxiety is common among high school students and can impact self-confidence and academic outcomes.

The role and involvement of teachers play an important role in this context. Research shows that teachers who demonstrate positive mindsets and implement effective writing teaching strategies can significantly improve students' writing performance [4, 16]. Appropriate learning strategies can encourage engagement by leveraging students' metacognitive awareness [8, 26]. Learning that emphasizes the writing process can improve students' writing skills in a secondary school setting [33, 45]. In terms of curriculum development, writing tasks need to be integrated with the needs and skills required by students to navigate the complexities of academic writing. Overall, a multi-faceted approach that includes skill development, appropriate feedback, and sustained practice is essential to address these writing difficulties.

2.2 Peer Review and Dialogic Feedback

In the context of the writing difficulties faced by students, peer review and feedback are important teaching tools. Peer feedback not only helps improve students' writing skills but also fosters a collaborative learning environment [5, 7, 28]. Research indicates that students involved in peer review activities tend to have better writing performance, as they actively participate in the feedback process, which fosters critical and analytical reading skills [28, 15, 18, 28, 32, 55].

In addition, certain peer feedback methods have been shown to be effective in producing higher quality drafts. Structured peer feedback sessions combined with teacher intervention can significantly improve students' writing skills and confidence [12, 40, 47]. [49] highlights the need for a dialogic feedback approach—that is, feedback that allows for two-way dialogue and reflection between the giver and receiver. In other words, reflective interaction should be encouraged to achieve substantive improvement in the text. Additionally, to maximise the effectiveness of peer feedback, explicit instructions on providing constructive criticism are necessary. This underscores the importance of preparing students to give and receive feedback in a way that is beneficial for the development of their writing. Overall, integrating peer feedback into writing instruction appears to be a promising strategy for addressing writing difficulties and improving students' academic writing skills.

3 Method

3.1 Research Design

This study used a quantitative approach with a survey design. This design was chosen to obtain a systematic and measurable picture of students' perceptions of academic writing challenges and the role of peer review. According to [10], careful research design is important because it determines the consistency between research questions, methods, and interpretation of results. A survey was chosen because it allows for the efficient and representative collection of a large amount of data [1]. Additionally, this approach is relevant in an educational context as it can identify common patterns of writing difficulties and perceptions of peer review-based pedagogical strategies [2]. A structured questionnaire was administered to collect data on students' difficulties in scientific writing and their experiences with peer review.

3.2 Research Design

Participants were selected through purposive sampling to ensure alignment with the research objectives and unit of analysis, consistent with qualitative research principles and mixed methods [11]. The selection process prioritised individuals with direct experience of academic writing instruction and practice, which is central to the phenomenon under investigation. Students in grade XI were selected because they had participated in scientific writing lessons as part of the national curriculum, were willing and able to complete the questionnaire independently, and were selected from schools with diverse backgrounds to complete a structured questionnaire about the challenges of academic writing and their experiences with peer review. Students are expected to provide reflective feedback on the challenges they face in organising arguments, applying academic conventions, and engaging in peer review.

Table 1. Demographic profile of student participants

School	Code School Type	Number of Students
S01	Private	68
S02	Public	76
S03	Public	71
S04	Private	72
S05	Public	69
Total		356

The research instrument was a structured questionnaire with a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The Likert scale was chosen because it is able to measure the intensity of respondents' attitudes and perceptions in more detail and is considered effective in revealing latent dimensions of attitude [24, 46]. To ensure content validity, the draft instrument was evaluated by three experts in writing instruction and educational measurement. Expert input included clarity of language,

appropriateness of indicators, construct representativeness, and appropriateness of items for measuring higher-order writing skills and students' perceptions of peer feedback. Several items were revised to improve readability and conceptual accuracy. The instrument was then piloted with 25 eleventh-grade students from non-participating schools to establish face validity and ensure that each item was clearly understood, given the students' literacy levels. Feedback from this pilot test led to simplifying several academic terms to make them more accessible to respondents.

The questionnaire consists of 20 statements grouped into three main dimensions:

1. Cognitive-linguistic challenges – statements assessing students' difficulties in organising ideas, constructing arguments, using academic vocabulary, and grammatical accuracy [20].
2. Affective-motivational factors – items describing writing anxiety, confidence in revision, and motivation to complete academic writing tasks [26, 38].
3. Pedagogical experience related to peer review – items that evaluate the extent to which students benefit from peer feedback, the clarity of instructions, and the role of teachers in facilitating peer review activities [49, 55].

Before use, the instrument was pilot-tested on 25 students to ensure clarity of wording, readability, and item discrimination.

Table 2. Reliability Test results

Cronbach's Alpha	Number of Items
.86	4

The reliability test showed a Cronbach's Alpha value of 0.868, which exceeds the minimum threshold of 0.60 and even exceeds the standard for good reliability, which is >0.80 . This means that the questionnaire used in this study has very good internal consistency, so that each statement item in the instrument is able to measure the same construct consistently. The responses provided by participants on each item tend to be stable and consistent, indicating that the questionnaire can be trusted as a measurement tool. Therefore, this questionnaire is suitable for measuring students' perceptions consistently and is methodologically sound.

To ensure construct reliability, an internal consistency analysis using Cronbach's alpha coefficient was conducted, yielding a value of 0.868 (Table 2), exceeding the minimum threshold of 0.60 and even exceeding the criteria for good reliability (>0.80). This indicates that the questionnaire used in this study has excellent internal consistency. This value indicates that all items in the instrument have excellent internal consistency in measuring the same construct. In other words, participant responses tend to be stable and do not exhibit random variability, making this instrument reliable as a measurement tool in educational research. This reliability finding aligns with the instrument quality standards recommended in contemporary measurement literature. Therefore, this questionnaire is suitable for measuring student perceptions consistently and is methodologically sound.

In addition to content validity and reliability, construct validity was also examined through inter-item correlation analysis and conceptual domain grouping. The results indicated that items within a single dimension measured consistent aspects, thus strengthening the claim that the Likert-based instrument used has adequate

psychometric qualities and is capable of producing valid and scientifically reliable data. Overall, the systematic instrument development process, from the formulation of theory-based indicators, expert evaluation, pilot testing on real respondents, to reliability and validity analysis ensures that this questionnaire is suitable for accurately measuring students' perceptions in the context of research on academic writing difficulties and peer review.

After revisions based on expert input, the instrument was piloted on 25 students to establish face validity and ensure readability. Several academic terms were simplified to better suit the context of secondary school literacy. Reliability testing using Cronbach's alpha was then conducted, yielding a value of 0.88, indicating very high internal consistency and supporting the stability of the constructs. This value meets the quality standards for educational and psychological research instruments as recommended by contemporary measurement literature. Therefore, the Likert-scale instrument used in this study has undergone validation and reliability testing, ensuring the reliability of the data obtained for further quantitative analysis.

3.3 Data Analysis

Displayed equation Quantitative data were analysed using SPSS version 25 with several stages of analysis. First, descriptive statistics (mean, standard deviation, and frequency distribution) were used to describe the general response patterns of students and teachers to academic writing challenges and peer review experiences. Descriptive analysis provides an initial understanding of data variability and main trends [27].

Second, Pearson correlation analysis (r) was conducted to test the relationship between the main constructs, namely academic writing challenges, peer review, and technology use. Correlation analysis was chosen to identify the strength and direction of linear relationships between variables [43]. The statistical significance threshold was set at $p < 0.05$. Additionally, effect sizes (Cohen's d for t-tests, η^2 for ANOVA, and standard β for regression) were reported to strengthen the interpretation of results and provide a more comprehensive overview of the practical relevance of the study findings.

3.4 Ethical Considerations

All participants were informed about the purpose and procedures of the study before data collection. Written consent was obtained from students and faculty members. Data confidentiality was maintained through anonymisation, and responses were stored securely to ensure ethical compliance.

4 Result

4.1 Descriptive Analysis

Table 3. Normality test results

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Writing_Challenge	.069	356	.368	.969	356	.543
Peer Review	.150	356	.389	.877	356	.242

Lilliefors Significance Correction

Based on the results of the normality test using the Kolmogorov-Smirnov and Shapiro-Wilk methods, the significance values (p-values) for the writing challenge variable were 0.368 and 0.543, and for the peer review variable were 0.389 and 0.242. All significance values were above the threshold of 0.05. This means that the research data does not reject the null hypothesis (H_0) which states that the data is normally distributed. Normal data distribution strengthens the validity of the research findings, because the analysis results will not be biased due to deviating distribution. Data normality also indicates that students' perceptions of writing challenges and peer review implementation are distributed proportionally in the sample.

Table 4. Results of the Homogeneity Test

		Levene Statistic	df1	df2	Sig.
Writing_Challenge	Based on Mean	.005	1	3	.945
	Based on Median	.004	1	354	.948
	Based on median and with adjusted df	.004	1	346.567	.948
	Based on trimmed mean	.004	1	354	.951
Peer Review	Based on Mean	.321	1	354	.572
	Based on Median	.295	1	354	.588
	Based on median and with adjusted df	.295	1	315.816	.588
	Based on trimmed mean	.424	1	354	.516

The results of the homogeneity test using Levene's Test show that the significance value (Sig.) for the *writing challenge* variable is in the range of 0.945 – 0.951, while for the peer review variable it is in the range of 0.516 – 0.588. All of these values are greater than 0.05, which means that the null hypothesis (H_0) is not rejected. Therefore, it can be concluded that the variance of the data in both variables is homogeneous or has the same variance across groups. Students' responses to writing challenges and peer review are relatively consistent across groups in the research sample. The absence of significant variance differences indicates that the research instrument measurements

have good stability across different respondent groups, both in terms of school differences and individual characteristics.

Table 5. Descriptive Analysis

	Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	204	57.3	60.7	60.7
	Male	132	37.1	39.3	100.0
	Total	336	94.4	100.0	
Missing	System	20	5.6		
Total		356	100.0		

In terms of gender, there were 204 female respondents (57.3%), while male respondents numbered 132 (37.1%), with 20 respondents (5.6%) not providing information. Based on valid data, the proportion of female respondents reached 60.7%, while male respondents accounted for 39.3%. This finding indicates that the distribution of respondents is relatively dominated by female students, so the interpretation of the research results will more closely reflect the perceptions of this group in the context of academic writing challenges and the implementation of peer review.

The research results show that the majority of students face difficulties in the cognitive-linguistic aspects of academic writing. As many as 78% of students admitted to experiencing obstacles in organising ideas and constructing coherent arguments. This difficulty is one of the indicators of low critical thinking skills in writing, as students are not yet able to systematically connect ideas into an academic structure. In addition, 65% of students stated that they lacked confidence in revising their writing. This indicates weak metacognitive abilities, particularly in identifying weaknesses in the text and making the necessary substantive improvements.

From a linguistic and affective perspective, 58% of students were constrained by their use of academic vocabulary and grammar, resulting in their writing lacking scientific precision. In addition, 62% of students experienced writing anxiety, which implied low motivation to engage in the writing process more deeply. In line with this, 55% of students stated that they did not clearly understand academic structure, making it difficult for them to follow scientific writing conventions. Regarding pedagogical strategies, only 41% of students considered peer review to be useful and structured. Conversely, the majority (59%) considered its implementation to be superficial and lacking instructional guidance from teachers. These findings indicate that although peer review has potential as a collaborative learning strategy, its implementation in the classroom is not yet optimal due to a lack of systematic design and pedagogical support.

4.2 Correlation Analysis

Table 6. Correlation Analysis

		Writing Challenges	Peer Review
Spearman's Rho	Writing_Challenge	Correlation Coefficient	1.0
		Sig. (Two-Tailed)	.538**
		N	356
	Peer_Review	Correlation Coefficient	.538**
		Sig. (Two-Tailed)	1
		N	356

** Correlation Is Significant At The 0.01 Level (Two-Tailed).

The Spearman correlation test results indicate a significant positive relationship between the writing challenge variable and peer review, with a correlation coefficient of 0.538 ($p = 0.000$ & 0.05). This value indicates that the higher the writing challenges experienced by students, the greater the role of peer review in helping them overcome these difficulties. A correlation of 0.538 is classified as moderate to strong, so the relationship found can be considered substantial in the context of educational research. This shows that peer review is not just an additional activity, but has the potential to be an important factor in improving students' writing skills. This significant relationship reinforces the argument that students facing cognitive-linguistic and affective difficulties can benefit significantly from peer feedback, both in terms of increased self-confidence and improved writing quality.

5 Discussion

The results of this study indicate that most students face serious challenges in academic writing, particularly in the areas of organising ideas (78%), revising text (65%), and limited academic vocabulary and grammar (58%). Affectively, many students experience writing anxiety (62%) and feel that they do not clearly understand academic structures (55%). These findings also show that the implementation of peer review in the classroom is not yet optimal, as only 41% of students consider the activity to be useful and structured, while the majority (59%) consider its implementation to be superficial and lacking in guidance. Spearman's correlation analysis reinforced these results by showing a significant positive relationship between writing challenges and peer review ($r = 0.538$; $p < 0.01$), meaning that the higher the writing challenges, the greater the need for peer review as a pedagogical strategy.

In addition to the main findings, the quality of the instruments used to measure writing perceptions and difficulties also provides important methodological contributions to this study. The Likert-scale instruments used to measure writing anxiety, cognitive-linguistic difficulties, and peer review experiences were validated through expert assessment and field trials and demonstrated a high reliability coefficient ($\alpha = 0.88$). Thus, the interpretation of the quantitative results is supported

by a strong methodological foundation, ensuring that the analyzed data accurately capture the psychological and pedagogical dimensions intended to be uncovered. This methodological strengthening enhances the credibility of the findings and strengthens the study's contribution to the development of writing instruction in secondary schools.

These results support the cognitive process model of writing proposed by Flower & Hayes, particularly the importance of the planning and revision stages as students' most significant challenges emerged during idea organisation and draft revision. Recent evidence indicates that teaching metacognitive strategies and collaborative writing improves the quality of planning, monitoring, and self-evaluation among young writers, which in turn enhances coherence and revision quality [23, 52]. Our findings are also consistent with studies of secondary students who exhibit weaknesses in argument construction and text organisation, indicators that pre-writing and revision cognitive processes are not yet functioning optimally [34]. Furthermore, classroom context (time, support, writing climate) has been shown to influence motivation and the sustainability of process strategies, explaining why some practices do not yield consistent improvements without adequate instructional design [48].

This study found that peer review in the classroom is suboptimal: only 41% of students perceived it as useful and structured, while the majority (59%) found it shallow and lacking guidance. Students' perception of peer review as a "shallow" activity highlights a fundamental gap between its pedagogical potential and its classroom implementation. This perception reflects a global pattern also found in recent studies, which indicate that many students view peer feedback as insufficiently helpful for revision because the comments provided tend to be superficial and lack rhetorical analysis [30, 31]. Recent studies confirm that the shallowness of peer feedback is generally driven by a lack of explicit training in evaluating arguments, coherence, and deeper meaning structures in academic texts [2, 33]. In other words, students often lack the heuristic frameworks necessary to generate high-quality feedback.

The findings of this study indicate that the shallowness of peer feedback is primarily rooted in students' cognitive and metacognitive limitations, which tend to produce surface-level editing comments rather than idea-based analysis, as demonstrated by [18, 29, 56]. This condition is exacerbated by instructional designs that lack scaffolding, analytical rubrics, or examples of effective comments, resulting in peer review functioning more as an administrative ritual than a collaborative process that supports writing learning [26, 28]. Social and affective factors, such as students' reluctance to offer in-depth criticism due to concerns about damaging interpersonal relationships, contribute to interactions that are "socially polite but academically poor" [25], further reinforcing the perception that peer review offers little substantive benefit. Overall, these findings confirm that the primary problem lies not with the peer review strategy itself, but rather with weaknesses in its design and implementation; therefore, improving the quality of peer review requires explicit training, robust commenting models, analytical rubrics, and dialogic feedback mechanisms, ultimately making important contributions to more systematic and evidence-based pedagogical reform.

From a pedagogical perspective, peer review is effective when positioned as structured formative feedback with rubrics, modelling, and follow-up space because the mode and quality of its implementation directly influence revision outcomes [13, 14]. Recent syntheses also confirm that integrating *peer feedback* strengthens the cognitive, social, and metacognitive dimensions of academic writing to address the planning and

revision difficulties we encounter [54]. On the other hand, the enhancement of metacognitive writing strategies has been validated instrumentally and correlated with improved writing performance, providing concrete intervention pathways for instructors [48]. Thus, these findings are not only consistent with cognitive process theory but also add empirical evidence that well-designed peer review and metacognitive strategy training are key levers for converting “planning–revision difficulties” into text quality improvements at the intermediate level.

Unlike the findings of Wu & Schunn (2021), which highlighted the effectiveness of peer review in improving writing quality through reflective feedback, this study found that the effectiveness of peer review was still low—possibly due to a lack of structured design (rubrics, modelling, and follow-up) [55]. A recent synthesis indicates that peer feedback works optimally only when its components (content, function, student characteristics, presentation, and source) are clearly designed from the outset; otherwise, the quality of feedback and revision tends to be superficial [22]. Other reviews confirm that successful online peer feedback implementation almost always involves task phasing, role rules, and rubric-based assessment; without these, engagement and feedback quality decline [7]. Even when peer feedback has been shown to improve writing quality, recent systematic studies emphasise the need for explicit guidance to ensure that revision changes are actually incorporated into the final draft [54]. These findings suggest that “*structure is the key lever*”: feedback scripts/templates and self-monitoring mechanisms at the interface level have been shown to enhance engagement and the quality of peer feedback compared to implementation without such supports.

In terms of student and teacher capacity, feedback literacy is a prerequisite: without adequate feedback literacy, students find it difficult to produce specific and actionable comments, thereby weakening the impact of peer review on revision. These results support the theory that peer review should be combined with scaffolding, especially for low-ability writers [7]. Additionally, the use of student-understood analytical rubrics correlates with clarity of expectations and revision quality; recent research shows that how rubrics are presented and organised influences how students use them for writing and assessment [3, 35]. Overall, our findings are consistent with the literature from the past five years: peer review is effective when supported by design, rubrics, and feedback literacy; conversely, minimally structured implementation—as in the context of this study—is likely to yield lower impacts than those reported in well-designed and well-scripted studies (review 2023–2025).

Although this study provides important insights into the challenges of academic writing and the role of peer review in secondary schools, several limitations should be noted. First, the sample size was limited to Grade XI students and Indonesian language teachers in a specific region, so the results cannot be generalised to the entire secondary education context in Indonesia. Second, the instruments used—questionnaires and semi-structured interviews—only captured the perceptions of students and teachers, without directly observing writing practices or the peer review process in the classroom, so there is a possibility of perceptual bias. Third, this study is cross-sectional in nature, so it cannot explain long-term changes in writing skills or the effectiveness of peer review. Therefore, further research is recommended to use a longitudinal design, involving more diverse school contexts, and combining classroom observation data and analysis of students' writing products to gain a more comprehensive understanding.

These findings indicate that peer review has great potential as a collaborative learning strategy, but it will only be effective if supported by adequate pedagogical scaffolding. The implications of these results are the need for training for teachers to integrate peer review into academic writing instruction using clear rubrics, modelling feedback practices, and reflective guidance. Thus, this study contributes to the development of language education science by emphasising that peer review is not merely an additional strategy but an essential component for building academic literacy in secondary schools.

The main contribution of this study is the provision of empirical evidence on the relationship between academic writing difficulties and the effectiveness of peer review in the context of secondary education in Indonesia—an area that has been rarely studied. The validity of the findings is strengthened through the triangulation of quantitative and qualitative data, which provides a comprehensive picture of students' perceptions and teachers' pedagogical strategies. Future research could focus on longitudinal studies to assess the sustained impact of peer review, or on controlled experiments comparing the effectiveness of structured peer review models with traditional writing instruction approaches. Thus, this study not only underscores the urgency of appropriate pedagogical design but also opens opportunities for more contextual, adaptive, and sustainable instructional strategies in academic writing instruction.s are centered and set on a separate line.

6 Conclusion

This study confirms that difficulties in academic writing among secondary school students lie mainly in the aspects of organising ideas, revising texts, using academic vocabulary, and affective factors such as writing anxiety. These findings are relevant in the broader context of secondary education, as academic writing skills are not only related to school performance but also to students' literacy readiness to participate in a knowledge-based society. Peer review has proven to have great potential as an effective collaborative learning strategy, but its effectiveness is highly dependent on pedagogical scaffolding in the form of clear rubrics, feedback modelling, and teacher support.

The practical implications of this study are the need for teacher training programs that emphasize structured, peer-review-based instructional design, so that students not only receive feedback but also learn to provide reflective and constructive evaluations. While this study provides a comprehensive overview of the challenges of academic writing and the pedagogical dynamics between students and teachers, further research is recommended, including longitudinal studies to assess the long-term impact of peer review on writing skill development, as well as controlled experiments to compare the effectiveness of various peer review models with traditional writing instruction strategies. Data on students' perceptions of peer review effectiveness were primarily collected through questionnaires; thus, researchers have not fully captured the underlying reasons for some students' dissatisfaction with the practice. Therefore, future research should integrate methodological triangulation, particularly through follow-up semi-structured interviews or focus group discussions (FGDs), to further explore the psychological, social, and pedagogical factors that influence students' acceptance or rejection of peer feedback. The findings of this study can be useful not

only for the development of writing instructional theory but also for educational practice in secondary schools.

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References

1. Aarons, H.: *A Practical Introduction to Survey Design: A Beginner's Guide*. SAGE Publications (2020)
2. Abrar, M.M., Hussain, S.J., Naveeduddin, M., Karche, M.M.: *Research Design*. RK Publication (2024)
3. Amelia, F., Novitasari, N.F., Firdaus, A.Y.: Bridging The Gaps In Curriculum To Students Through English Club. In: *International Seminar on Language, Education, and Culture* (2017)
4. Bhandari, B.L., Bhandari, S.: Exploring Reflective Practices for In-service English Language Teachers' Professional Development. *J. Res. Educ.* **1** (2024)
5. Bolourchi, A., Soleimani, M.: The Impact of Peer Feedback on EFL Learners' Writing Performance and Writing Anxiety. *Int. J. Res. Engl. Educ.* **6**(1), 1–15 (2021) doi: 10.52547/ijree.6.1.1.
6. Borbon, D.J.A., et al.: Critical Thinking Skills and Study Skills as the Determining Factors in Academic Success of Senior High School Students. *Int. J. Res. Innov. Soc. Sci.* **9**(3), 1555–1570 (2025) doi: 10.47772/IJRISS.
7. Casinto, C.D.: Scaffolded Peer Feedback and Second Language Writing Proficiency: Implications for Inclusive ESL Teaching Practice. *TESL-EJ* **26**(4), 1–17 (2023) doi: 10.55593/ej.26104a8
8. Cer, E.: The Instruction of Writing Strategies: The Effect of the Metacognitive Strategy on the Writing Skills of Pupils in Secondary Education. *Sage Open* **9**(2) (2019) doi: 10.1177/2158244019842681
9. Chan, C.K.Y., Lee, K.K.W.: Reflection literacy: A multilevel perspective on the challenges of using reflections in higher education through a comprehensive literature review. *Educ. Res. Rev.* **34**, 100411 (2021) doi: 10.1016/j.edurev.2020.100376
10. Cheek, J.E.: *Research Design: Why Thinking About Design Matters*. SAGE Publications (2023)
11. Creswell, J.W., Clark, V.L.P.: *Designing and Conducting Mixed Methods Research*. SAGE Publications, United Kingdom (2018)
12. Farahian, M., Noori, T.: The Effectiveness of Peer Feedback through Google Docs for Improving EFL Students' Classroom Engagement and Writing Achievement. *Int. J. Res. Engl. Educ.* **8**(1), 1–106 (2023) doi.org/20.1001.1.25384015.2023.8.1.7.3
13. Fleckney, P., Thompson, J., Vaz-Serra, P.: Designing effective peer assessment processes in higher education: a systematic review. *High. Educ. Res. Dev.* **44**(2), 386–401 (2025) doi: 10.1080/07294360.2024.2407083
14. Gao, X., Noroozi, O., Gulikers, J., Biemans, H.J.A., Banihashem, S.K.: A systematic review of the key components of online peer feedback practices in higher education. *Educ. Res. Rev.* **42**, 1–27 (2024) doi: 10.1016/j.edurev.2023.100588
15. Ghane, M.H., Razmi, M.H., Dehghanpoor, F., Nematollahi, R.: The impact of written corrective feedback on students' writing performance, self-efficacy, and anxiety. *J. Writ. Res.* **16**(2), 271–321 (2024) <https://doi.org/10.17239/jowr-2024.16.02.04>

16. Graham, S., Kiuahara, S., McKeown, D., Harris, K.R.: Supplemental Material for A Meta-Analysis of Writing Instruction for Students in the Elementary Grades. *J. Educ. Psychol.* **104**, 879–896 (2012) doi: 10.1037/a0029185.supp
17. Guo, J., Asmawi, A.: Exploring Foreign Teachers' Perceptions of Communication with Students in Online Learning in China: A Case Study. *Int. J. Learn. Teach. Educ. Res.* **22**(1), 228–246 (2023) doi: 10.26803/ijlter.22.1.13
18. Hamad, H., Albelihi, M., Mohammed, A.A., Al-Ahdal, H.: EFL students' writing performance: A study of the role of peer and small-group feedback. *J. Lang. Linguist. Stud.* **17**(4), 2224 (2021)
19. Handayani, R.: Exploring EFL Learners' Difficulties in Academic Writing: Problems and Solutions. *J. Linguist. Lit. Pedagog.* **2**(1), 59–69 (2023)
20. Harshalatha, S., Sreenivasulu, Y.: Exploring Academic Writing Needs and Challenges Experienced by ESL Learners: A Literature Review. *World J. Engl. Lang.* **14**(3), 406–412 (2024) doi: 10.5430/wjel.v14n3p406
21. He, W., Gao, Y.: Explicating peer feedback quality and its impact on feedback implementation in EFL writing. *Front. Psychol.* **14**, 177094 (2023) doi: 10.3389/fpsyg.2023.1177094
22. Hsieh, Y.-C., et al.: Does the peer review mode make a difference? An exploratory look at undergraduates' performances and preferences in a writing course. *Comput. Compos.* **72**, 102854 (2024) doi: <https://doi.org/10.1016/j.compcom.2024.102854>
23. Huang, Y., Zhang, L.J.: Facilitating L2 writers' metacognitive strategy use in argumentative writing using a process-genre approach. *Front. Psychol.* **13**, 1036831 (2022) doi: 10.3389/fpsyg.2022.1036831
24. Joshi, A., Kale, S., Chandel, S., Pal, D.: Likert Scale: Explored and Explained. *Br. J. Appl. Sci. Technol.* **7**(4), 396–403 (2015) doi: 10.9734/bjast/2015/14975
25. Kerman, N.T., Banihashem, S.K., Karami, M., Er, E., van Ginkel, S., Noroozi, O.: Online peer feedback in higher education: A synthesis of the literature. *Educ. Inf. Technol.* **29**(1), 763–813 (2024) doi: 10.1007/s10639-023-12273-8
26. Khosravi, R., Dastgoshadeh, A., Jalilzadeh, K.: Writing metacognitive strategy-based instruction through flipped classroom: an investigation of writing performance, anxiety, and self-efficacy. *Smart Learn. Environ.* **10**(1) (2023) doi: 10.1186/s40561-023-00264-8
27. Kumar, R.: *Research Methodology*. APH Publishing (2018)
28. Kustati, M., Yuhardi, Y.: The Effect of the Peer-Review Technique on Students' Writing Ability. *Stud. Engl. Lang. Educ.* **1**(2), 71–80 (2014) doi: 10.24815/siele.v1i2.2671
29. Lahza, H.F., et al.: Enhancing peer feedback provision through user interface scaffolding: A comparative examination of scripting and self-monitoring techniques. *Comput. Educ.* **230**, 105269 (2025) doi: 10.1016/j.compedu.2025.105260
30. Lee, I.: *Classroom writing assessment and feedback in L2 school contexts*. Springer, Singapore (2017) doi: 10.1007/978-981-10-3924-9
31. Lahza, H.F., Demartini, G., Noroozi, O., Gašević, D., Sadiq, S., Khosravi, H.: Enhancing peer feedback provision through user interface scaffolding: A comparative examination of scripting and self-monitoring techniques. *Comput. Educ.* **230**, 105260 (2025) doi: 10.1016/j.compedu.2025.105260
32. Meighan, P.J.: An 'educator's' perspective: How heritage language pedagogy and technology can decolonize the English classroom. *TESOL J.* **11**(2) (2020) doi: 10.1002/tesj.483.
33. Montague, N.: *New York State Association for Bilingual: The Process Oriented Approach to Teaching Writing to Second Language Learners* (1995)
34. Morawski, M., Budke, A.: *Teaching Written Argumentation to High School Students Using Peer Feedback Methods—Case Studies on the Effectiveness of Digital Learning Units in*

- Teacher Professionalization. *Educ. Sci.* **13**(268), 1–25 (2023) doi: 10.3390/educsci13030268
35. Morgan, M.M., Murray, G.V., Sala, A.J., Johnson, E., Wagner, E.P.: Cultivating Undergraduate Scientific Writing Proficiency through Interactive Video Workshops. *J. Chem. Educ.* **102**(2), 630–638 (2025) doi: 10.1021/acs.jchemed.4c01099
 36. Myhill, D., Cremin, T., Oliver, L.: The impact of a changed writing environment on students' motivation to write. *Front. Psychol.* **14**, 1212940 (2023) doi: 10.3389/fpsyg.2023.1212940
 37. Ningrum, R.W., et al.: Academic Writing Difficulties For Indonesian Students In Pursuing Postgraduate Studies Abroad. *Premise: J. Engl. Educ.* **12**(1), 93–109 (2023) doi: 10.24127/pj.v12i1.5271.
 38. Pajares, F.: Self-efficacy beliefs, motivation, and achievement in writing: A review of the literature. *Read. Writ. Q.* **19**(2), 139–158 (2003) doi: 10.1080/10573560308222
 39. Panadero, E., Delgado, P., Zamorano, D., Pinedo, L., Fernández-Ortuba, A., Barrenetxea-Mínguez, L.: Putting excellence first: How rubric performance level order and feedback type influence students' reading patterns and task performance. *Learn. Instr.* **99**, 102168 (2025) doi: 10.1016/j.learninstruc.2025.102168
 40. Peungcharoenkun, T., Waluyo, B.: Students' affective engagements in peer feedback across offline and online English learning environments in Thai higher education. *Asian-Pacific J. Second Foreign Lang. Educ.* **9**(1) (2024) doi: 10.1186/s40862-024-00286-w
 41. Rahman, A., Masitoh, S., Mariono, A.: Collaborative Learning to Improve Creative and Critical Thinking Skills: From Research Design to Data Analysis (2022)
 42. Rahmatunisa, W.: Problems faced by EFL learners in writing argumentative essay. *Engl. Rev.: J. Engl. Educ.* **3**(1), 41–49 (2014)
 43. Remler, D.K., Van Ryzin, G.G.: *Research Methods in Practice: Strategies for Description and Causation.* SAGE Publications (2021)
 44. Septyana, Y., Wardani, I.: The Difficulties Of Argumentative Essay Writing Experienced By Undergraduate Students Of English Department Mulawarman University. *E3L: J. Engl. Teach. Linguist. Lit.* **4**(1), 33–45 (2021) <https://doi.org/10.30872/e3l.v4i1.1906>
 45. Stanton, J.D., Sebesta, A.J., Dunlosky, J.: Fostering metacognition to support student learning and performance. *CBE Life Sci. Educ.* **20**(2) (2021) doi: 10.1187/cbe.20-12-0289
 46. Taherdoost, H.: "What Is the Best Response Scale for Survey and Questionnaire Design; Review of Different Lengths of Rating Scale / Attitude Scale / Likert Scale," *International Journal of Academic Research in Management (IJARM)*, vol. 8, no. 1, pp. 2296–1747, 2019.
 47. Tai, H.C., Lin, W.C., Yang, S.C.: Exploring the effects of peer review and teachers' corrective feedback on EFL students' online writing performance. *J. Educ. Comput. Res.* **53**(2), 284–309 (2015) doi: 10.1177/0735633115597490
 48. Teng, M.F., Ying, Z.: Assessing self-regulated writing strategies, self-efficacy, task complexity, and performance in English academic writing. *Assess. Writ.* **57**, 100728 (2023) doi: 10.1016/j.asw.2023.100728
 49. Topping, K.J.: Peer assessment. *Theory Pract.* **48**(1), 20–27 (2009) doi: 10.1080/00405840802577569
 50. Ulfa, S.M., Wahyudi, M.A.: Students' difficulties in writing an argumentative essay: a qualitative study of EFL learners in a writing class. *Engl. Teach. J.* **11**(1), 1–7 (2023) doi: 10.25273/etj.v11i1.15814
 51. Urch, G., Carpenter, Y.-Y.: Conversations and Perspectives On Peer Feedback For Problem-Solving. In: *Papers on Postsecondary Learning and Teaching*, pp. 81–86 (2019) <https://doi.org/10.11575/pplt.v3i1.53146>

52. Wang, Y.: Cognitive and sociocultural dynamics of self-regulated use of machine translation and generative AI tools in academic EFL writing. *System* **126**, 103505 (2024) doi: 10.1016/j.system.2024.103505
53. Wei, W., Cao, Y.: Written Corrective Feedback Strategies Employed by University English Lecturers: A Teacher Cognition Perspective. *SAGE Open* **10**(3) (2020) doi: 10.1177/2158244020934886
54. Wei, Y., Liu, D.: Incorporating peer feedback in academic writing: a systematic review of benefits and challenges. *Front. Psychol.* **15** (2024) doi: 10.3389/fpsyg.2024.1506725
55. Wu, Y., Schunn, C.D.: The Effects of Providing and Receiving Peer Feedback on Writing Performance and Learning of Secondary School Students. *Am. Educ. Res. J.* **58**(3), 492–526 (2021) doi: 10.3102/0002831220945266
56. Zeng, X., Ravindran, L.: Design, implementation, and evaluation of peer feedback to develop students' critical thinking: A systematic review from 2010 to 2023. *Think Ski. Creat.* **55**, 101691 (2025) doi: 10.1016/j.tsc.2024.101691
57. Zhang, X., McEneaney, J.E.: What Is the Influence of Peer Feedback and Author Response on Chinese University Students' English Writing Performance? *Read. Res. Q.* **55**(1), 123–146 (2020) doi: 10.1002/rrq.259

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