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P-ISSN 2355-2794
E-ISSN 2461-0275

Effects of Collaborative Assessment on Undergraduate Students' Writing Performance

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Abstract

This study investigates the impact of collaborative assessment on undergraduate students' writing performance in English as a Foreign Language (EFL) courses in Indonesia. Collaborative assessment, which encompasses self-assessment, peer assessment, and teacher assessment, enhances writing proficiency and critical thinking skills. This study exclusively incorporates the field dependence-independence (FDI) cognitive styles to explore how these learning styles interact with collaborative assessment strategies. The research used a quantitative method to involve 120 students from Universitas Pancasakti Tegal, divided into field-independent and field-dependent groups. Over 14 weeks, students participated in collaborative assessment activities within their writing courses. Pre- and post-tests, along with survey questionnaires, measured improvements in writing performance and student attitudes. Results indicated significant improvements in writing skills for both cognitive style groups, with field-independent students showing slightly higher gains. The study concludes that collaborative assessment effectively enhances writing performance and fosters positive learning attitudes, regardless of cognitive style, and recommends integrating this approach into EFL writing instruction. The findings imply that collaborative

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Citation in APA style: Taufiqulloh., Fadhly, F. Z., & Rosdiana, I. (2024). Effects of collaborative assessment on undergraduate students' writing performance. *Studies in English Language and Education*, 11(3).

Received March 6, 2024; Revised June 15, 2024; Accepted August 22, 2024; Published Online 31 September, 2024

<https://doi.org/10.24815/siele.v11i3.37704>

assessment is a valuable tool for accommodating diverse learning styles in EFL education.

Keywords: Cognitive styles, collaborative assessment, EFL writing, field dependence-independence, peer assessment, self-assessment, teacher-assessment, writing performance.

1. INTRODUCTION

In EFL instruction, collaborative assessment—integrating self-, peer-, and teacher assessments—has gained attention for improving writing skills and fostering critical thinking (Fathi & Khodabakhsh, 2019; Meletiadou, 2021). Studies have revealed positive outcomes from collaborative assessment in various contexts. Alqefari (2022) highlighted the benefits of feedback dialogs in collaborative writing courses, while Anđelković (2022) found significant benefits from the correspondence between peer and teacher assessments in academic essay writing. Ayachi (2017) demonstrated improvements in writing composition among advanced EFL students in Tunisia through peer and teacher assessments.

Recent studies have emphasized technology's role in facilitating collaborative assessments, with tools like cloud-based platforms enhancing feedback and engagement (Z. Li et al., 2017; Sun et al., 2022). Kavitha and Anitha (2021) reported higher student engagement and performance with individual assessment methods in collaborative activities. Sun et al. (2022) found that structured peer feedback improved writing abilities and promoted community among learners, which is consistent with Meletiadou's (2021) conclusions on the value of peer assessment in developing critical thinking and writing skills in EFL contexts.

Xiaomeng and Ravindran (2023) investigated the effects of teacher-student collaborative assessment on the writing of Chinese EFL learners. Their study demonstrated that collaborative assessment practices can significantly improve writing proficiency and foster positive learning attitudes. The authors suggested that such assessment strategies should be tailored to accommodate the diverse cognitive styles of learners to enhance the overall effectiveness of EFL instruction. Then, Holman et al. (2021) explored the incorporation of collaborative and therapeutic techniques into school-based assessments to promote equity. Their findings indicate that collaborative assessment can redistribute power and foster a more inclusive learning environment, which is particularly beneficial in diverse educational settings. This study provides further evidence supporting the integration of collaborative assessment practices into EFL writing instruction to address students' varied needs.

Moreover, studies by Brement et al. (2020) demonstrated that collaborative assessments in science education improve not only content knowledge but also collaborative skills and critical thinking. These findings are significant for EFL contexts in which developing communication skills and critical thinking skills are crucial. Integrating collaborative assessment into EFL writing instruction aligns with these broader educational goals. Peloghitis and Ferreira (2018) also emphasized the importance of model texts in writing instruction, suggesting that providing students with examples of high-quality writing can enhance their understanding of literary conventions and improve their writing skills. This approach can be effectively

2 combined with collaborative assessment to provide students with concrete examples and constructive feedback, thus fostering a more comprehensive learning experience. Finally, Siahhaan et al. (2022) examined the impact of collaborative strategic reading on reading comprehension by considering learners' cognitive styles. Their findings suggest that collaborative learning approaches are particularly effective for field-dependent learners who benefit from interactive and cooperative learning environments. This has direct implications for this study because it give emphasis to the need to consider cognitive styles in the design and implementation of collaborative assessment strategies.

40 Despite the substantial body of research on collaborative assessment, there is a notable gap in its application within the Indonesian EFL context, particularly with a focus on cognitive styles such as field dependence independence (FDI). Previous studies have primarily addressed the general efficacy of collaborative assessment without delving into how different cognitive styles interact with this instructional strategy (Guisande et al., 2007; Siahhaan et al., 2022). In addition, the specific impact of collaborative assessment on the writing performance of undergraduate students in Indonesia remains underexplored.

52 3 This study aims to fill this research gap by investigating the effects of collaborative assessment on undergraduate students' writing performance, with a unique focus on FDI cognitive styles. By incorporating this cognitive dimension, the research seeks to provide a deeper understanding of how collaborative assessment strategies can be tailored to meet the diverse needs of students with varying cognitive preferences (Saracho, 2020). The integration of FDI cognitive styles into the study of collaborative assessment is expected to offer novel understandings of personalized instructional strategies that can enhance writing performance in EFL settings.

63 45 12 48 The primary objective of this study was to examine the impact of collaborative assessment on the writing performance of undergraduate Indonesian EFL students. This study aims to: (1) evaluate the overall effectiveness of collaborative assessment in improving writing skills, (2) explore the interaction between collaborative assessment and FDI cognitive styles, and (3) provide practical recommendations for educators and curriculum developers to implement collaborative assessment effectively, considering different cognitive styles. By addressing these objectives, the study contributes to the existing literature on collaborative assessment and offers practical insights for enhancing EFL writing instruction in diverse educational contexts.

2. LITERATURE REVIEW

5 Collaborative assessment, which involves students in peer reviews, group discussions, and reflections, has been recognized for its positive impact on learning outcomes. This method enhances critical thinking, feedback skills, and academic performance. Recent research has underscored the benefits of collaborative learning. De Hei et al. (2019) highlighted the role of fostering intercultural competence by leveraging diverse perspectives. Kezar and Holcombe (2020) demonstrated that collaboration supports the success of underrepresented students in Science, Technology, Engineering, and Mathematics (STEM) fields by promoting critical thinking and improved learning outcomes. These findings suggest that integrating

collaborative assessment in EFL writing instruction can significantly enhance writing proficiency and critical thinking, making it a valuable teaching approach.

2.1 Collaborative Assessment Enhances Writing Skills

Collaborative assessment is a significant strategy for enhancing student writing skills. Villarreal and Gil-Sarratea (2020) found that students engaged in collaborative writing activities showed marked improvements, benefiting from peer interaction and feedback. Similarly, Moonma and Kaweera (2021) demonstrated that group and pair writing activities led to high-quality essays, highlighting the effectiveness of collaborative assessment.

Assessment of literacy is crucial for effective writing instruction. Meijer et al. (2020) emphasized developing assessment literacy among students and educators and highlighted the need for collaborative assessment integrated with reflective practices to enhance students' understanding of assessment criteria and feedback. Alqefari (2022) introduced feedback dialogs in collaborative writing to improve students' understanding of writing conventions through interactive feedback.

Technological tools enhance the benefits of collaborative assessment. Zhu et al. (2020) demonstrated that automated feedback systems significantly enhance writing by encouraging revisions and promoting learning gains. Z. Li et al. (2017) found that a cloud-based tool for collaborative reading-to-write activities improved writing performance by facilitating seamless collaboration and resource sharing.

The motivational aspect of collaborative assessment is also important. Qureshi et al. (2023) noted that collaborative learning and engagement boost students' performance by creating a motivating environment. McConnell (2023) highlighted the effectiveness of collaborative assessment in e-learning and stressed that online tools facilitate collaboration and engagement, making it a versatile strategy across various learning contexts.

2.2 Pleasures and Perils of Collaborative Assessment

Despite its benefits, collaborative assessment also presents challenges. Cotterill and Letherby (2020) discussed the 'pleasures and perils' of collaborative writing, noting issues such as interpersonal conflicts and unequal participation. To mitigate these challenges, Kavitha and Anitha (2021) emphasized the need for structured individual assessments within collaborative activities to ensure fair contribution and accountability.

Collaborative assessment also has broad implications for educational equity and inclusion. Holman et al. (2023) advocated incorporating collaborative and therapeutic techniques into school-based assessments to promote equity and redistribute power. By allowing all students to voice their opinions in the assessment process, collaborative assessment can help address systemic inequities in education. Yang and Chen (2023) provided a historical review of collaborative and cooperative learning, highlighting their enduring relevance in the development of deep learning and critical thinking. The ability of collaborative assessments to engage students in meaningful dialog and reflection makes them powerful tools for enhancing writing skills and overall academic performance.

2.3 Revisiting Classroom Assessment in EFL Writing

The classroom assessment in EFL writing has evolved to enhance student learning and motivation. Bui and Nguyen (2024) emphasized that formative assessments boost learning motivation in secondary school EFL classrooms by providing continuous feedback and support. J. Li (2024) highlighted the integration of Criterion-Referenced Self-Evaluation (CSE) and Assessment for Learning (AfL) in Chinese EFL classrooms, which improves writing skills and understanding.

Teachers' perceptions and emotional aspects significantly impact assessment effectiveness. Nguyen and Truong (2021) reported that EFL teachers in Vietnam viewed writing assessments as essential for tracking progress and guiding instruction. Su and Lee (2024) highlighted the importance of emotion regulation for teachers in blended classrooms in maintaining supportive learning environments and handling assessment-related stress.

Innovative strategies using technology and collaborative learning are becoming increasingly prevalent. Zhang (2024) presented a MOOC-based, AI-powered flipped teaching and assessment model that enhances teacher and student growth. Hedayati and Khoorsand (2024) and X. Liu (2024) advocated for formative writing assessments and assessment literacy to improve writing development, emphasizing continuous reflective practices that support student learning in EFL writing classrooms.

2.4. Essay Writing and Writing Process

Recent studies have highlighted innovative approaches to enhance EFL essay writing. Graham and Harris (1994) demonstrated that fostering self-regulation skills significantly improves writing performance, while Latifi et al. (2023) found that providing structured guidance enhances peer feedback quality and overall essay composition. Kormos (2023) further emphasized the crucial role of cognitive skills in second-language writing proficiency. These findings reveal the multifaceted nature of effective EFL writing instruction, suggesting that a comprehensive approach that incorporates self-regulation, structured peer feedback, and cognitive skill development may lead to the best results.

Collaborative approaches have proven highly effective in enhancing EFL writing skills. Yulitriana et al. (2023) demonstrated that fostering community dialog significantly improves critical thinking abilities and overall writing quality. Complementing this, Daud et al. (2023) clarified the crucial role of grammatical cohesion in crafting coherent essays. Building on these findings, Kerman et al. (2024) identified successful strategies for implementing online peer feedback specifically tailored to argumentative writing. Collectively, these studies highlighted the power of collaborative learning environments in developing writing competencies. Technological tools play a significant role in enhancing writing development. Q. Liu et al. (2024) demonstrated that argument mapping software can effectively improve writing skills by facilitating thought organization and logical flow. In conjunction with this, Deane et al. (2024) offered a comprehensive framework for assessing various writing traits, enabling more targeted instruction. Considering cognitive aspects, Andong et al. (2024) revealed the critical influence of psychological factors on writing performance, while Aguilar et al. (2024) emphasized the importance of tailored methodologies for individual learners. These findings noted the necessity for diverse,

integrated approaches in EFL writing instruction that employ technology, address cognitive processes, and accommodate individual differences.

2.5 Collaborative Assessment in EFL Essay Writing

Field dependence independence is a cognitive style that reflects how individuals perceive, process, and organize information, particularly in terms of their reliance on external cues versus internal frames of reference. Vecchione et al. (2023) identified field dependence-independence as a key mediator between visual perception and mathematical ability, emphasizing its influence on cognitive performance, especially in children and preadolescents. These findings suggest that field-independent individuals may outperform tasks requiring abstract thinking, whereas field-dependent individuals often perform better in social or collaborative settings. This distinction highlights the importance of considering cognitive styles when designing educational interventions. According to Yang and Chen (2023), this construct influences students' online learning behaviors by distinguishing between those who rely heavily on external structures (field-dependent) and those who prefer to rely on internal cues and self-structuring (field-independent). Jing et al. (2023) examined how this cognitive style affects experiences in virtual reality, noting that field-independent individuals better adapt owing to their reliance on internal spatial frameworks. Idris et al. (2023) highlighted the importance of understanding field dependence-independence in STEM education, suggesting that recognizing these cognitive styles can enhance educational strategies by adapting to specific needs and improving learning outcomes.

In the context of EFL writing, collaborative assessment—encompassing self-, peer-, and teacher-assessment—can significantly enhance student learning. Self-assessment allows students to evaluate their writing across various aspects, such as format, mechanics, organization, grammar, and sentence structure, while addressing both cognitive and metacognitive dimensions (De Hei et al., 2019; Sun et al., 2022; Taufiqulloh, 2014). Peer assessment, on the other hand, encourages students to engage in constructive feedback, fostering a deeper understanding of writing conventions. Combined, these forms of assessment help students become more reflective writers and take greater ownership of their learning process. Peer assessment allows students to evaluate and provide feedback on each other's work, which has been shown to have significant effects, although it also presents some drawbacks (Dar et al., 2014; Meletiadou, 2021; Quynh, 2021; Sun et al., 2022). Teacher feedback, on the other hand, is particularly beneficial because it not only identifies linguistic mistakes but also provides solutions for improving various aspects of writing (Sun et al., 2022). By combining these different sources of feedback, this comprehensive approach supports the development of writing skills and encourages reflective learning.

Collaborative assessment, which includes self-, peer-, and teacher-assessment, significantly improves undergraduate writing performance by enhancing critical thinking and feedback skills. Studies by De Hei et al. (2019) and Kezar and Holcombe (2020) highlighted the benefits of collaborative writing activities for intercultural competence and supporting underrepresented students, while Villarreal and Gil-Sarratea (2020) and Moonma and Kaweera (2021) showed that collaborative writing activities boost writing quality through peer interaction. Technological tools further enhance these benefits, with Z. Li et al. (2017) and Zhu et al. (2020) found that automated feedback systems and cloud-based tools improve writing and facilitate

collaboration. Additionally, McConnell (2023) and Qureshi et al. (2023) noted that these tools also boost student motivation and engagement.

Despite its advantages, collaborative assessment faces challenges such as interpersonal conflicts. To address these issues, structured individual assessments are crucial to ensure fair participation (Cotterill & Letherby, 2020; Kavitha & Anitha, 2021). Holman et al. (2021) and Yang and Chen (2023) supported the use of collaborative techniques to foster equity and facilitate deep learning, affirming that, when managed effectively, collaborative assessment remains a valuable approach for enhancing writing performance.

3. METHODS

This study employed a quantitative approach to assess the impact of collaborative assessment on student writing performance. A pre-experimental design, utilizing pre-and post-tests, was used to measure performance within a single group. Additionally, a factorial design was used to compare the writing performance of students who experienced collaborative assessment with that of students who did not, taking their learning styles into account (Ghufron & Suminta, 2020). The students were categorized into field-independent and field-dependent groups to explore how collaborative assessment affected different cognitive styles. Field-independent students tend to favor individual learning and exhibit more analytical skills, whereas field-dependent students are generally more sociable and actively seek feedback (Febrina et al., 2022). This study evaluated how collaborative assessment influences the writing performance of the two groups, providing insights into its effectiveness across various cognitive styles.

3.1 Population and Sampling

The study involved 120 undergraduate students from the English Study Program at Universitas Pancasakti Tegal (UPS) in Indonesia. Ethical standards including informed consent and confidentiality were maintained. Participants were fully briefed on the study objectives, and their participation was voluntary. Data were handled with strict confidentiality, and ethical approval was granted by UPS's institutional review board (IRB).

3.2 Data Collection

Data were collected over 14 weeks during a writing course at Universitas Pancasakti Tegal. Students participated in weekly 100-minute sessions, which began with a reflection phase to gain insight into their learning strategies and establish course objectives. The initial sessions introduced essay concepts, types, and structures through a review of model essays. Following this, students wrote their own essays, covering various stages such as topic selection, idea generation, and outlining. The collaborative assessment phase incorporated self-, peer-, and teacher assessments using a structured checklist to guide students in revising their drafts. This process was repeated across different essay types, including comparison/contrast, cause/effect, and

argumentative essays, allowing for a thorough evaluation of writing performance and improvement.

3.3 Instruments

The study employed a pre-test, post-test, and survey questionnaire to gather data. For both the pre-test and post-test, the students were required to write 500-800 word essays on selected topics within a 100-minute timeframe. The survey questionnaire included 10 Likert Scale statements designed to assess the effectiveness of collaborative assessment on writing performance and students' attitudes. Content validity for the essay tests was ensured by aligning them with established course objectives, while face validity was confirmed through the provision of clear and organized instructions. The validity of the questionnaire was evaluated using Pearson's product-moment correlation, yielding p-values between .5 and .8. Reliability was assessed using Cronbach's alpha, which resulted in a score of .650, indicating acceptable internal consistency.

3.4 Data Analysis

The data analysis for this study followed a structured approach, beginning with preliminary tests to ensure data validity. Normality was assessed using the Kolmogorov-Smirnov test to confirm the data distribution and homogeneity of variances was evaluated using Levene's Test to verify equal variances across groups (Creswell & Creswell, 2019; Pallant, 2010). For the primary statistical analysis, a paired sample t-test was used to examine the improvement in writing performance of each group before and after the intervention. Additionally, an ANOVA test was conducted to compare the performance between the experimental and control groups (Field, 2009). Supplementary analysis involved descriptive statistics to examine the questionnaire results, including means, standard deviations, and frequency distributions, to measure students' attitudes toward collaborative assessment (Pallant, 2010). Pearson correlation analysis was employed to validate the reliability and consistency of the questionnaire items (Cohen et al., 2000). These methods collectively addressed the research questions by evaluating both the impact of collaborative assessment on writing performance and students' attitudes.

The selection of statistical tests was aligned with the study's objectives: the paired sample t-test was used to compare means within related groups, and ANOVA was applied to assess performance differences between multiple groups (Field, 2009). Descriptive statistics and correlation analysis provided detailed insights and ensured the reliability of the responses (Cohen et al., 2000; Pallant, 2010). This comprehensive analytical approach guaranteed valid and replicable findings on the effectiveness of collaborative assessment in EFL writing instruction.

4. RESULTS

The objective of this study was to evaluate the effectiveness of collaborative assessment in enhancing the writing performances of EFL undergraduate students. This section presents the results of the inferential statistics on the pre-test and post-test

scores and the descriptive statistics from the survey questionnaire. Inferential statistics revealed significant improvements in students' writing performance, with increased grammatical and lexical accuracy and overall essay quality after the collaborative assessment.

The descriptive statistics highlighted students' positive perceptions, with both field-independent and field-dependent students finding collaborative activities and feedback beneficial for their learning attitudes and writing skills. The interactive learning environment also enhanced the participants' critical thinking and communication abilities, supporting the study's objective of demonstrating the impact of collaborative assessment on EFL writing performance.

4.1 Effects of Collaborative Assessment on Field-Independent Students' Writing Performance

The Shapiro-Wilk normality test was administered because the sample of this group was 20 (less than 50). Using the SPSS program, it was found that the significance values (sig.) of pre-test scores were .203 and .122 for post-test scores. As both p-values were greater than .05., the research data had a normal distribution, so a paired sample t-test was conducted.

Table 1. The results of the paired sample t-test of field-independent students' pre- and post-test scores.

	N	Mean	Mean dif.	SD	SD dif.	Std. error mean	T	df	Sig.
Pre-test	20	61.25	-18.250	7.048	5.447	1.218	-	19	.000
Post-test	20	79.50		6.048			14.983		

Table 1 shows that the difference between the two mean scores was -18.250, while the standard deviation was 5.447. The t value falls between the upper and lower bounds of the 95% confidence interval of the difference, -14.983. With the degree of freedom 19, the significance value (sig.2 tailed) was .000, which was far below the significance level of 0.05. Consequently, collaborative assessment was effective in improving the field-independent students' writing performance, as evidenced by the average mean score of the post-test, which was greater than that of the pre-test (79.50>61.25).

4.2 Effects of Collaborative Assessment on Field-Dependent Students' Writing Performance

The research data were normally distributed with significance values of pre-test scores of 0.138 and post-test scores of 0.290, which were greater than .05. The results of the paired sample t-test for this group are presented in Table 2.

Table 2 shows that the mean scores of the pre-test and post-test were 61 and 77, respectively, with a mean difference of -16. The standard deviation difference was 6.609. With a degree of freedom of 19 and a statistic value of -10.826, it was found that the significance value was .000, lower than the .005 level, so the second null hypothesis was rejected. Due to the enhancement of the writing performance of the group of field-dependent students, the collaborative assessment was effective in

improving the field-dependent students' writing performance as the mean score of the post-test was greater than that of the pre-test (77.00>61.00).

Table 2. The results of the paired sample t-test of field-dependent students' pre- and post-test scores.

	N	Mean	Mean dif.	SD	SD dif.	Std. error mean	t	df	Sig.
Pre-test	20	61.00	-16.000	6.996	6.609	1.478	-	19	.000
Post-test	20	77.00		7.145					

4.3 Comparisons of the Writing Performance of FI Students and FD Students in the Experimental and Control Groups

Normality and homogeneity tests were previously administered. Kolmogorov-Smirnov test was used because the sample was >50. As the p-values of post-test scores were .134 and .091 for the experimental and control groups, which were greater than the .05 level, the data were normally distributed. Meanwhile, using Lavene's Test, it was also found that the research data were homogeneous, as a gained significance value of .396, which is greater than .05. The research data were normally distributed and homogeneous; thus, the F-test was performed.

Table 3. Test of between-subject effects.

Dependent variable: Post-test					
Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected Model	938.650a	3	312.883	5.982	.001
Intercept	450300.050	1	450300.050	8608.861	.000
Learning Method	832.050	1	832.050	15.907	.000
Learning Style	105.800	1	105.800	2.023	.159
Learning Method * Learning Style	.800	1	.800	.015	.902
Error	3975.300	76	52.307		
Total	455214.000	80			
Corrected Total	4913.950	79			

a. R Squared = ,191 (Adjusted R Squared = ,159)

As presented in Table 3, the gained significance value was .000 in the learning method, which was lower than .05, meaning that there was a significant difference in writing achievement between the experimental and control groups. The experimental group outperformed the control group. However, based on the learning style variable, the p-value of .159 was greater than .05, indicating that there was no significant difference in the writing performance of the field-independent students and the field-dependent students in both groups.

Table 4. Estimated marginal means.

Post-test scores	Mean	Std. error	Post-test scores	Mean	Std. error
Learning Method			Learning Style		
Collaborative Assessment	78.250	1.144	Field-Independent Students	76.175	1.144
Non-Collaborative Assessment	71.800	1.144	Field-Dependent Students	73.873	1.144

The improvement in students' writing performance was indicated by the mean post-test score of the experimental group, 78.250, which was greater than that of the control group, 71.88. The mean difference between the two post-test scores of the two groups was considered significant. However, the mean of the writing scores of the field-independent students (76.175) was slightly higher than that of the field-dependent students, 73.873, indicating that the learning style did not affect the students' writing achievement when learning to write essays through collaborative assessment.

4.4 Results from the Survey Questionnaire

The results of students' responses from field-independent and field-dependent students on their writing skills and interest in the implementation of collaborative assessment are presented below.

Table 5. Descriptive statistics of field-independent students' responses on collaborative assessment.

	N	Mean	Std. deviation
Writing skills			
Statement 1	20	4.40	.503
Statement 2	20	4.25	.444
Statement 3	20	4.05	.510
Statement 4	20	4.25	.639
Statement 5	20	4.10	.716
Average mean		4.26	
Students' attitudes			
Statement 6	20	3.80	.696
Statement 7	20	4.10	.641
Statement 8	20	3.65	.988
Statement 9	20	3.95	.686
Statement 10	20	4.00	.562
Average mean		3.90	

Table 5 illustrates the field-independent students' responses on the use of collaborative assessment as a method of instruction in an essay writing course integrated into the steps of the writing process. The results showed that the participants had positive responses that collaborative assessment was considered effective and enabled them to improve their writing skills, as evidenced by their average mean score of 4.26, and to enhance their positive attitudes in learning, as evidenced by their average mean score of 3.90.

Table 6. Descriptive statistics on field-dependent students' responses on collaborative assessment.

	N	Mean	Std. deviation
Writing skills			
Statement 1	20	4.40	.821
Statement 2	20	4.45	.510
Statement 3	20	4.30	.470
Statement 4	20	4.20	.696
Statement 5	20	3.75	.910
Average mean		4.22	

Table 6 continued...

Students' attitudes			
Statement 6	20	4.20	.834
Statement 7	20	4.10	.641
Statement 8	20	3.60	1.095
Statement 9	20	4.45	.510
Statement 10	20	4.10	.553
Average mean		4.09	

As shown in Table 6, the results of the questionnaire to field-dependent students were not significantly different from those of field-independent students, as indicated by the average mean score of 4.22 for writing skills and 4.09 for students' attitudes in learning. In conclusion, the findings of these descriptive statistics support those of the inferential statistics as previously presented.

5. DISCUSSION

This study demonstrated that collaborative assessment effectively enhances student writing abilities and interests. Conducted over 14 sessions in an undergraduate writing course, it incorporates the field dependence-independence (FDI) cognitive style, recognizing distinct modes of information processing. Field-independent (FI) students prefer autonomous information selection while field-dependent (FD) students rely on external input (Guisande et al., 2007). By catering to both FI and FD learners, the study supports *Tulbure's (2011)* assertion that adapting instructional methods to learning styles enhances outcomes. The strategy integrated self-, peer-, and teacher evaluations, promoting learner autonomy, feedback value, and critical thinking skills.

The collaborative assessment strategy promoted learner autonomy, which is consistent with *Fahim et al. (2014)*, who found that such assessments encourage active student participation. This study confirms that self- and peer assessments foster responsibility and improve self-regulation in students. The value of feedback, emphasized in previous research by *Meletiadou (2021)* research, was also evident in this study. These studies demonstrated that peer feedback is particularly effective in enhancing writing performance and fostering critical thinking. The current findings are in line with these studies, indicating that students valued the feedback received from their peers and teachers, which helped them refine their writing skills and think more critically about their work.

Moreover, the development of communication and critical thinking skills, as highlighted by *Jafari and Ansari (2012)* and *Kiasi and Rezaie (2021)*, was another significant outcome of this study. Students reported improvements in their ability to articulate their ideas and provide constructive feedback, thus reflecting enhanced communication and critical thinking abilities. Additionally, the focus on comparison/contrast, cause/effect, and argumentative essays within a single semester offers insights into how collaborative assessment can be effectively integrated into these specific types. This provides a more focused examination of its impacts, which differs from studies like those by *Soleimani and Rahmanian (2014)* and *Zarei and Mahdavi (2014)* which examined a variety of essay types.

Several factors explain these differences. The Indonesian cultural context, emphasizing communal values and collaborative learning, likely influenced the

positive reception and effectiveness of peer assessments, in line with [Lacaste et al. \(2022\)](#). In addition, the university setting and the higher motivation and metacognitive skills of undergraduate students contributed to successful outcomes. For educators and curriculum developers, the study suggests incorporating cognitive styles to benefit all learners, allowing adequate time for self-, peer-, and teacher-assessment, and providing structured guidance with detailed rubrics. Regular reflection activities help students internalize feedback and develop metacognitive skills. These strategies enhance learning outcomes, foster autonomy, and develop critical thinking skills through collaborative assessment.

56 The outcomes of the paired sample t-test indicated the effectiveness of collaborative assessment in bolstering the writing prowess of both FI and FD learners in the experimental group, with FI students displaying superior performance. This result echoes prior research suggesting that FI learners generally achieve higher levels in educational settings ([Febrina et al., 2022](#); [Guisande et al., 2007](#); [Nosratinia & Adibifar, 2014](#)), which can be attributed to several factors. First, FI students independently expended considerable effort in developing and refining their essay ideas before seeking feedback for their initial drafts. Additionally, during the revision phase, FI students meticulously self-assessed their drafts before undergoing peer and teacher evaluations, carefully selecting which feedback to apply for accuracy. Conversely, FD students relied more on peer and teacher input from the outset of the draft. Despite the learning style differences, the disparity in final performance between the FI and FD students through the collaborative assessment was marginal.

33 The F-test results showed that the experimental group outperformed the control group, confirming previous research ([Jafari & Ansari, 2012](#); [Kiasi & Rezaie, 2021](#); [Xiaomeng & Ravindran, 2023](#)). Collaborative assessment was integrated into the writing phases through collective activities like discussing essay topics, developing ideas, and drafting outlines. However, challenges include differentiating individual and group performance, resistance from students who are used to traditional methods, and the need for technology and resources that may not be accessible to all students, thus limiting inclusivity and participation ([Huri et al., 2024](#)).

11 Feedback on grammar and sentence structure ranged from simple to complex issues, with peer and teacher assessments significantly improving grammatical and lexical accuracy ([Zarei & Mahdavi, 2014](#)). Mechanical errors such as capitalization, punctuation, and spelling were consistently corrected, with teacher feedback enhancing punctuation understanding and word processing checks minimizing spelling errors. Collaborative assessment, integrated through activities such as discussing essay topics, developing ideas, and drafting outlines, faces challenges like differentiating individual and group performance, student resistance to nontraditional methods, and the need for accessible resources ([Huri et al., 2024](#)). The survey responses indicated that both the FI and FD students found the integrated collaborative assessment beneficial for enhancing their writing skills and learning attitudes, thus valuing the interactive learning environment it fostered. This approach also honed their critical thinking and communication skills through extensive discussions, as noted by [Fahim et al. \(2014\)](#).

69 The findings suggest that collaborative assessment effectively promotes students' deeper understanding of course content. To implement it effectively, educators and curriculum developers should incorporate technology by using online platforms and webinars for professional development ([Saleem et al., 2021](#)). They

should also emphasize reflection by encouraging teachers to identify areas for improvement and develop strategies accordingly (Ong et al., 2021). Fostering collaboration among teachers to share knowledge and best practices is crucial (Imants & Van der Wal, 2020). Tailoring assessments to diverse student needs by considering different cognitive styles and learning preferences (Sanger, 2020) and regularly monitoring progress to identify areas for growth (Banilower et al., 2007) are also important.

Integrating self-, peer-, and teacher assessment in EFL essay writing is time-consuming because of metacognitive processes but can be managed by phasing assessments to avoid overwhelming students. Educators should focus on comparison/contrast, cause/effect, and argumentative essays, provide differentiated feedback, and use detailed rubrics. Regular peer reviews, collaborative writing projects, and reflection activities enhance learning and metacognitive skills. Teacher training on diverse cognitive styles and the use of online platforms for peer review are essential. Curriculum adjustments should include various essay types and integrated skills for comprehensive writing practice to foster an inclusive and effective learning environment.

6. CONCLUSION

This study investigates the impact of collaborative assessment on the writing skills of Indonesian university students enrolled in essay writing courses. Collaborative assessment, which incorporates self-assessment, peer assessment, and teacher assessment, significantly enhances students' writing abilities regardless of their cognitive styles—Field-Independent (FI) and Field-Dependent (FD). Results indicated that FI students, who exhibit self-directed learning and selective feedback, performed better, with an average score of 76.175 compared to 73.873 for FD students, although the difference was not substantial.

The student surveys revealed widespread appreciation for collaborative assessment, highlighting increased enthusiasm and interest in writing activities. Feedback emphasized that collaborative assessment fosters a more engaging and interactive learning environment, thus enhancing both performance and engagement. This approach supports the development of critical thinking, reduces test anxiety, and promotes positive interactions among students.

Educators can implement collaborative assessment by setting clear objectives, encouraging open collaboration, using technology, and creating inclusive environments. This study suggests that educational policies should emphasize collaboration in learning, provide professional development for educators, and support diverse learning needs. Future research should further explore the nuances of collaborative assessment's impact on learning outcomes by employing qualitative and quantitative methodologies to optimize practices across different contexts and demographics.

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APPENDIX A

Survey Questionnaire on Students' Learning Styles

The following items describe your learning experiences in the academic writing class. Please indicate your response by placing a cross (x) on the following scale.

1=always 2= usually, 3= rarely and 4=never

No.	Statements	Responses			
		1	2	3	4
Motoric Behavior					
1	I set my own learning goals at the beginning of the lesson.				
2	I selected course materials based on my interests.				
3	I have gathered a lot of new ideas.				
4	I studied other courses on the basis of the previous one.				
5	I made notes of any necessary things I learned in the classroom.				
6	I practiced talking over and over about things I had learned in the classroom to thoroughly understand them.				
Perception					
7	I was interested in studying this course.				
8	I found no difficulties in learning this course.				
9	I could write a lot on the course.				
10	Learning this course enhanced my knowledge.				
11	I obtained good grades on this course.				
12	I was well motivated to learn this course.				
Memory					
13	I recalled the content materials to deepen my understanding.				
14	I memorized all the key words to improve my understanding.				
15	I concentrated seriously when learning this course.				
16	I have reflected on how far I have learned this course subject.				
17	I discussed materials I did not understand with my friends.				
Self-Regulation					
18	I went back to the previous lessons when I did not understand the new ones.				
19	I changed my learning style for difficult course subjects.				
20	I performed skimming on the organization of course materials.				
21	I sought feedback from others.				
22	Problems were solved on my own based on others' feedback.				

APPENDIX B

Collaborative Assessment Checklist for Essay Writing

Title of the essay: Editor:			
DIMENSIONS	Place a tick on each criterion if you find any in the essay	Score	Feedback/ comments
Format			
The title is centered.			
The first line of each paragraph is indented.			
The essay has margins on the left and right sides.			
Mechanical aspects			
The essay includes proper capitalization.			
The essay has proper punctuation.			
All words are correctly written (proper spelling).			
Introduction			
The essay has a clear and interesting background.			
The essay has an unambiguous thesis statement that drives the issues to the body.			
Body			
Each body paragraph includes a topic sentence or discusses one issue.			
Each body paragraph contains sufficient controlling ideas.			
Each body controlling its ideas using sufficient supporting details (data, facts, etc.).			
Conclusion			
The conclusion summarizes the ideas from the beginning to the end.			
The conclusion has the recommendation of the writer.			
Coherence and Unity			
The essay has a clear and interesting background.			
The essay has an unambiguous thesis statement that drives the issues to the body.			
Body			
Each body paragraph includes a topic sentence or discusses one issue.			
Each body paragraph contains sufficient controlling ideas.			
Each body controlling its ideas using sufficient supporting details (data, facts, etc.).			

Grammar and Sentence Structures		
	Score	Feedback/comments
Identify improper use of grammar features and list them.		
Identify improper use of sentence structures and list them here.		

APPENDIX C
Survey Questionnaire on Students' Collaborative Assessment Responses

No.	Statements	Responses				
		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Writing skills						
1	I thoroughly comprehended the concepts of academic essay. thoroughly through collaborative assessment.					
2	I could generate and elaborate on the topics of my essays with feedback from others in collaborative assessment practices.					
3	I could easily edit my essays regarding their format and mechanical skills with collaborative assessment.					
4	I could use grammar and sentence structures appropriately in collaborative assessment.					
5	I could make my essays for coherence and unity through collaborative assessment.					
Students' attitudes						
6	I enjoyed learning to write through collaborative assessment.					
7	I became more critical after learning through collaborative assessment.					
8	I could improve my communication skills since I share a lot with others in writing.					
9	I could easily identify my weaknesses in writing through the help or feedback of others.					
10	I could solve my problems easily and plan my future learning goals.					