

# The Effect of Brainstorming and Free Writing on Writing Skill Development: Teachers' Feedback as a Mediator

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**Abstract**—This paper explores the effect of brainstorming and free writing methods on improving students' writing skills by considering the role of teacher feedback as a mediator. It used the descriptive quantitative method. Respondents were 86 college students from the English Department in Makassar City. Questionnaires were used to obtain the data, distributed online to respondents by Email and WhatsApp. The data were analyzed using path analysis with the SPSS software program. The research results proved that brainstorming and free writing methods have a significant effect both directly and indirectly through teachers' feedback on students' writing skill improvement. Teachers' feedback effectively mediates the relationship between brainstorming and free writing methods, leading to improved students' writing skills. It means that if the brainstorming and free writing methods are used in combination to teach the English writing skill, the students have the opportunity to improve their writing skill, and teachers' feedback is helpful for students to identify their mistakes and make corrections related to the use of grammar, structure, and the writing composition.

**Index Terms**—brainstorming, free writing, teachers' feedback, writing skill improvement

## I. INTRODUCTION

To become proficient in English, students must master listening, speaking, writing, and reading (Kaharuddin et al., 2025). Writing, however, is particularly challenging (Arnawa & Arafah, 2023; Kaharuddin et al., 2024). Students need not only vocabulary mastery and creative thinking skills but also a solid understanding of English grammar and sentence structure (Iksora et al., 2022; Kuswanty et al., 2023). Common challenges in learning English writing include limited vocabulary, grammar knowledge, and metacognitive skills, as well as inadequate writing practice and exposure to various genres (Mardiana et al., 2023; Kaharuddin et al., 2022). Studies in Thailand and Vietnam show the need for focused interventions in English writing for second-language learners (Kongsuebchart & Suppasetseree, 2016). In Indonesia, creative teaching methods are essential to help students explore and develop their English writing skills (Arafah et al., 2024b). Teachers' creativity plays a vital role in motivating students to enhance their writing abilities (Ismail et al., 2020; Kaharuddin et al., 2022).

To motivate students' creative thinking and develop their English writing skills, methods such as brainstorming, free writing, and teacher feedback can be effectively combined (Arafah et al., 2023b; Karamoy et al., 2024). Brainstorming encourages idea generation, and free writing allows students to express those ideas freely in writing. Teacher feedback helps students identify and understand mistakes in grammar and sentence structure (Arafah et al., 2025). However, many teachers still use traditional methods that focus mainly on grammar tasks, without engaging students' creative thinking skills (Kaharuddin et al., 2021; Arafah et al., 2023c). This limits students' ability to generate ideas

independently, despite their knowledge of grammar and structure, making free writing tasks challenging for them (Mokoginta & Arafah, 2022; Lestari et al., 2025; Yulianti et al., 2022; Yudith et al., 2023).

This research focuses on the use of brainstorming and free writing methods in teaching writing, with teachers' feedback serving as a mediator to enhance students' writing skills. Brainstorming and free writing allow students to freely jot down ideas on a topic, which they then organize narratively to form a coherent piece of writing (Takwa et al., 2024; Takwa et al., 2025). To receive corrective feedback on content, organization, diction, grammar, and structure, students can use technology to send their work to knowledgeable English lecturers (Kaharuddin et al., 2023). Technology offers students a chance to receive feedback from proficient readers. Feedback has been shown to improve critical thinking, a key aspect of enhancing English writing skills (Irgin & Bilki, 2024; Halidin et al., 2025). Therefore, the brainstorming method is valuable in the prewriting phase of teaching writing.

The brainstorming method motivates students to generate as many ideas as possible within a set time, allowing them to write down unorganized ideas (Purwaningsih et al., 2020). Free writing helps students express these ideas without worrying about grammar or structure, allowing them to focus on content (Sunyoto et al., 2022; Jusdalyana et al., 2024). While not all ideas may be used, the initial ones serve as references for further development. Teachers play a role by providing feedback and corrections, especially on grammar and structure. Students should actively participate in the learning process and engage in writing practice (Unin & Bearing, 2015; Suhadi et al., 2022). Brainstorming, free writing, and teachers' feedback work together to enhance both the process and product of writing (Hasyim & Arafah, 2023b). This paper explores how these methods combine to support writing skills development.

## II. REVIEW OF RELATED LITERATURE

Writing skills are essential for university English students, but many struggle with writing, despite having ideas. Before writing, generating ideas is crucial, and the brainstorming method helps motivate this process (Hasyim & Arafah, 2023a). Once ideas are formed, free writing allows students to express them freely, without worrying about grammatical or structural accuracy (Kaharuddin, 2024). English teachers provide feedback to address grammar and structure, offering students guidance on improving accuracy, coherence, and organization in their writing (Baa et al., 2023).

### A. Students' Writing Competence

Writing is a form of communication where ideas, thoughts, and events are expressed in written form. In English language learning, students' writing skills need development to express their thoughts effectively. Mastery of vocabulary, grammar, and structure is essential for students to write correctly (Arifin et al., 2022). Writing competence is vital not only for language learning and academic success but also for job requirements, such as in positions that demand writing documents in English. This competence involves producing written texts that are grammatically accurate, coherent, purposeful, and contextually appropriate. However, writing skill development remains challenging for English as a second language learners.

Writing competence involves mastery of grammar, vocabulary, spelling, punctuation, sentence structure, and composition (Arifuddin et al., 2024; Nurcahyadi et al., 2025). However, it also requires the organization of ideas, logical argument development, and the use of cohesive devices for textual coherence. Effective writing combines technical proficiency, creative expression, and strategic thinking. In Thailand and Vietnam, university students find academic writing tasks challenging due to limited English proficiency, especially in expressing their thoughts. They must learn both linguistic and rhetorical features of English, which may be absent in their first language (Faris, 2015). Additionally, students need to develop skills in organizing ideas, expanding vocabulary and grammar, and translating thoughts from their native language to English (Khemanuwong et al., 2021). Indonesian students face similar challenges in developing English writing skills, lacking strategies to compose texts freely due to insufficient writing instruction.

### B. Brainstorming as a Method

The brainstorming method is a technique to encourage creative thinking and problem-solving. It has been adopted in education to help students generate ideas and solutions. Unin and Bearing (2015) note that brainstorming enhances students' productivity in writing tasks. This method helps students quickly generate ideas and develop a topic without worrying about mistakes in diction or grammar. The focus is on improving writing fluency. Teacher feedback, both oral and written, helps students identify weaknesses and make corrections (Fadillah et al., 2022). The brainstorming learning model is student-centered and often used in small groups to encourage students to present their ideas in writing. However, students are sometimes hesitant to write in English. A study by Unin and Bearing (2015) found that using brainstorming techniques such as word lists, word mapping, and pictures can boost students' motivation, confidence, and participation. This method led to increased confidence and motivation, as observed through positive student behavior during classroom activities.

The Brainstorming method in English writing includes activities like free writing, mind mapping, and idea listing to encourage diverse thinking. However, challenges exist, such as students focusing on familiar ideas, limiting creativity (Karanjakwut & Charunsri, 2025). This can hinder the exploration of new ideas and creative thinking (Oliva & Elaziz, 2020; Arafah et al., 2023a). Despite this, the Brainstorming model motivates students to generate, organize, and structure their ideas for writing assignments. Research by Ramadhanti and Mana (2018) found that using Brainstorming

in English learning significantly improved students' ability to write narrative essays and positively impacted their writing performance.

### C. *Free Writing as a Method*

English writing is a vital skill in global education (Goshu & Gebremariam, 2024), yet students often struggle due to a lack of ideas, fear of mistakes, or difficulty starting. Writing is especially challenging for EFL learners as it requires grammar, diction, structure, coherence, and creativity (Alfalagg, 2020). Creative activities are needed to help students generate ideas. Writing skills also boost students' motivation and interest in writing tasks (Göçen, 2019). Free writing is an effective method to overcome these challenges and support writing development (Arafah et al., 2024b).

Writers often face challenges like running out of ideas, fear of mistakes, or difficulty getting started. Alfalagg (2020) notes that writing is particularly difficult for English Foreign Language students because it requires various sub-skills, including grammar, vocabulary, structure, and coherence. Creative activities are needed to help students generate ideas and improve writing skills. Göçen (2019) found that writing skills play a significant role in motivating students to engage in writing tasks, fostering a sense of importance and interest in writing. One effective method to address writing challenges is free writing (Arafah et al., 2024b).

Free writing encourages students to write continuously without focusing on grammar, spelling, or structure, allowing thoughts to flow freely without judgment or self-editing. It helps overcome writer's block, develop ideas, and explore feelings. There are no right or wrong answers, and the goal is to keep writing, even if it means repeating words. Sinaga et al. (2022) found that using Free Writing significantly improved students' ability to write narrative texts. This method proves beneficial for teaching English writing and fosters an understanding of its key characteristics (Arafah et al., 2020). Free writing is characterized by a lack of structure, focusing on quantity rather than quality, and avoiding editing during the process. This method stimulates creativity, writing fluency, reduces anxiety, and provides raw material for writing. Although students may struggle with ideas, they eventually find new inspiration. The process ends by reviewing interesting parts for further development. Free writing is used in classrooms, creative writing, and personal journals to enhance writing quality (Alharthi, 2021). The four stages of free writing—prewriting, drafting, revising, and editing—are key to improving English competence. Each stage plays a crucial role in the writing process.

**Prewriting.** In the prewriting stage, the goal is to enhance students' creativity around the chosen topic. Teachers should remind students of the purpose and audience for their writing (Asraf et al., 2018). Understanding this helps students create outlines. Activities like brainstorming, listening, grouping, reading, and skimming support idea generation. These techniques are easy to apply, require minimal preparation, and take little time (Kroll, 2013). Teachers should let students try all methods and encourage them to choose the most effective one.

**Drafting.** Several activities can help students transition from idea creation to drafting. Mohan et al. (2015) suggest activities such as relating the theme to other concepts, defining the theme, applying ideas, describing them, comparing ideas, arguing for or against ideas, and discussing the subject's history. At this stage, students focus on writing their ideas without worrying about grammatical mistakes. Teachers and students should prioritize the main issues, such as the subject, evidence, and organization, rather than focusing on word usage, punctuation, or spelling in the first draft.

**Revising.** Students need to approach writing revision by considering grammar, organization, and content. Mannes and Kintsch (1987) noted that students often lack opportunities to improve their texts during revision, missing the chance to develop and integrate new ideas. English teachers should guide revisions by providing feedback on the first draft, focusing on content-related errors rather than only grammar. Teachers should also comment on the text's organization, thesis, awkward word choices, and suggest better expressions to improve the overall writing.

**Editing.** At the editing stage, students proofread their work to fix grammatical and technical errors based on the teacher's instructions. Prior to this, the focus is on content. Students revise, correct spelling, and fix specific mistakes. Checklists, tailored to students' needs and abilities, help guide the editing process (Mort, 2017). Editing is the final step in free writing, where students address local errors. To improve accuracy, students should be allowed to write freely first, then receive mini grammar lessons during editing (Alharthi, 2021; Arafah et al., 2024a). Free writing encourages creativity, which can later be refined into structured writing (Arafah & Hasyim, 2023b).

### D. *Teachers' Feedback*

Teachers' feedback involves providing corrections on students' writing, covering grammar, vocabulary, sentences, and other aspects to improve understanding. It is a powerful instructional tool, though not always fully understood in design (Abbas et al., 2024). Especially in formative learning, feedback offers detailed insights into individual progress (Shute, 2008). Corrective feedback is vital for improving writing skills, guiding students through grammar, structure, coherence, and composition (Zahari et al., 2025; Arafah et al., 2023d; Arafah et al., 2025). Teachers' feedback on writing helps students improve their skills by guiding them in revising drafts and understanding effective writing practices (Arafah & Hasyim, 2023a). Effective feedback is timely, specific, formative, and tailored to students' needs. Feedback types include formative, summative, written, and oral, each serving a different purpose. Formative feedback supports writing development during the learning process, while summative feedback assesses final assignments. Written feedback offers detailed comments, and oral feedback provides personal insights (Gan et al., 2021; Kaharuddin, 2025). Corrective feedback addresses mistakes, while descriptive feedback highlights strengths and areas for improvement. Proper feedback use significantly boosts students' writing ability and classroom dynamics.

### III. METHODOLOGY

This study used a quantitative method to analyze the effect of independent variables on a dependent variable, with a mediator variable also considered (Abidin & Kaharuddin, 2021). Brainstorming and Free Writing (X1, X2) were the independent variables; Writing Skill Development (Y2) was the dependent variable; and Teachers' Feedback (Y1) was the mediator. Data were collected via online questionnaires from 86 English Department students in Makassar. Responses were rated using a five-point Likert scale and analyzed through path analysis. Before that, validity and reliability tests were conducted using Pearson Correlation (r) and Cronbach's Alpha. A coefficient above 0.6 indicated reliability. Classical assumption tests, including normality (Kolmogorov-Smirnov) and multicollinearity (VIF and tolerance values), ensured the data met statistical assumptions.

Path analysis was used to examine causal relationships in multiple regression, showing direct and indirect effects through a mediator. Regression determined effect values, with path diagrams illustrating variable links. Direct effects used standardized beta coefficients. The coefficient of determination ( $R^2$ ) measures how much the independent variables explain the dependent variable, using a specific formula.

$$r^2 Y_i (X_1, X_2) = (\rho_{Y_i X_1} \rho_{Y_i X_2}) \begin{bmatrix} r_{Y_i X_1} \\ r_{Y_i X_2} \end{bmatrix}$$

The correlation coefficient value is calculated using the Pearson product-moment correlation with the following formula:

$$r = \frac{n \sum_{i=1}^n X_i Y_i - (\sum_{i=1}^n X_i)(\sum_{i=1}^n Y_i)}{\sqrt{n(\sum_{i=1}^n X_i^2) - (\sum_{i=1}^n X_i)^2} \sqrt{n(\sum_{i=1}^n Y_i^2) - (\sum_{i=1}^n Y_i)^2}}$$

Before analysis, data were tested for validity and reliability using SPSS. Validity was confirmed if the r-statistic (corrected item-total correlation) exceeded the r-table at  $\alpha = 0.05$ . Reliability was measured using Cronbach's Alpha, with values  $\geq 0.6$  indicating consistency. Classical assumption tests included normality, linearity, heteroscedasticity, and multicollinearity.

The path coefficient obtained is then tested partially and simultaneously with the following hypothesis:

H0: Variables X1, Y1 have no simultaneous and partial effect on variable Y2.

Ha: Variables X1 and Y1 simultaneously and partially affect variable Y2.

Simultaneously, the statistical test uses the F-test. The value of F-count is compared with the value of F-table. The degree of freedom is k and n-k-1. If F-count  $\geq$  F-table or Sig  $\leq$  0.05, then Ha is accepted and H0 is rejected, which means that there is a simultaneous significant effect of independent variables on the dependent variable. At the same time, the partial effect is tested by R-squared correlation.

### IV. RESULT AND DISCUSSION

#### A. Result

##### (a). Validity Test

The validity test was conducted to assess whether the research instrument was valid. The questionnaire items were analyzed by correlating the score of each item with the total variable score. With 86 respondents and a significance level of 5%, the r-table value is 0.213. If the correlation value (r-count) is greater than 0.213, the statement is considered valid. If the correlation value is below 0.213, the statement is invalid. The validity test results compare the r-count for each variable with the r-table value, as shown in the table below.

TABLE 1  
THE RESULTS OF THE VALIDITY TEST

Indicators	Variables								Validity
	Brainstorming		Free Writing		Teachers' feedback		Writing skill development		
	r-count	r-table	r-count	r-table	r-count	r-table	r-count	r-table	
Identifying topic	0.504	0.213							Valid
Dare to express ideas	0.595	0.213							Valid
Uses vocabulary and simple sentence structures	0.833	0.213							Valid
Spontaneously express ideas			0.881	0.213					Valid
Enthusiasm when writing			0.880	0.213					Valid
Writing continuity			0.915	0.213					Valid
Clarity of feedback					0.888	0.213			Valid
Constructiveness					0.823	0.213			Valid
Encouragement					0.832	0.213			Valid
Content							0.778	0.213	Valid
Organization							0.750	0.213	Valid
Grammar and structure							0.673	0.213	Valid
Vocabulary							0.608	0.213	Valid

The validity test results confirmed that each item of the research instrument was valid, as the  $r_{\text{count}}$  value for each questionnaire item exceeded the  $r_{\text{table}}$  value, thereby satisfying the criteria for the questionnaires to be valid.

(b). *Reliability Test*

The reliability test was carried out by comparing the value of Cronbach's Alpha with the  $r_{\text{table}}$  value. The results of the reliability test in this study are shown in the following table.

TABLE 2  
THE RESULTS OF RELIABILITY TEST

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.955	.954	39

The reliability coefficient (Cronbach's alpha), as shown in the table above, is 0.955, which is greater than the  $r_{\text{table}}$  value of 0.213. Thus, each statement item in the research questionnaire is considered reliable so that it can be used in this study.

(c). *Test of Classical Assumption*

1. *Normality Test*

The normality test was conducted by applying the Kolmogorov-Smirnov test. This test reveals that data is said to be normally distributed if the Asymp. Sig value (2-tailed) and Kolmogorov-Smirnov  $Z > 0.05$ . The result of the normality test is shown below.

TABLE 3  
RESULT OF NORMALITY TEST

One-Sample Kolmogorov-Smirnov Test		
N		Unstandardized Residual
		86
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	1.56785719
Most Extreme Differences	Absolute	.122
	Positive	.047
	Negative	-.104
Kolmogorov-Smirnov Z		1.125
Asymp. Sig. (2-tailed)		.324
a. Test distribution is Normal.		
b. Calculated from data.		

In the normality test, the Kolmogorov-Smirnov  $Z$  value is  $1.125 > 0.05$  and Asymp. Sig. (2-tailed) of  $0.324 > 0.05$ . Therefore, it can be concluded that the data analyzed in this study are normally distributed.

2. *Multicollinearity Test*

A good regression model does not show a correlation between the independent variables. This relationship is detected using the Variance Inflation Factor (VIF) value. If the Variance Inflation Factor value is smaller than 10.00, then there is no multicollinearity in the model, and if the Tolerance value is greater than 0.10, then there is no multicollinearity.

TABLE 4  
RESULT OF MULTICOLLINEARITY TEST

Model		Coefficients <sup>a</sup>			t	Sig.	Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients			Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	14.087	1.532		9.193	.000		
	Brainstorming	.147	.097	.185	2.883	.005	.378	3.752
	Free Writing	.175	.077	.151	2.300	.024	.417	3.163
	Teachers' Feedback	.696	.089	.655	10.096	.000	.456	3.675

a. Dependent Variable: Writing Skill Development  
b. Source: Output SPSS 21.0 for Windows

The tolerance value for the Brainstorming variable is 0.298 (> 0.10), and the VIF value is 3.752 (< 10.00). For the Free Writing variable, the tolerance value is 0.417 (> 0.10) and the VIF value is 3.163 (< 10.00). For the Teachers' Feedback variable, the tolerance value is 0.456 (> 0.10) and the VIF value is 3.675 (< 10.00). These results from the multicollinearity test indicate that the tolerance values for all variables are greater than 0.10 and the VIF values are all smaller than 10.00. Therefore, the regression equation model does not exhibit any multicollinearity issues and can be used in this study.

(d). Path Analysis

In this path analysis, two analyses were carried out, and model 1 was produced with the dependent variable Teachers' Feedback (Y<sub>1</sub>) and model 2 with the dependent variable Students' Writing Skill Development (Y<sub>2</sub>).

1. Model 1

In this model 1, Teachers' Feedback is the dependent variable. The Brainstorming and Free Writing are the independent variables. The path analysis of Model 1 shows the results as presented in the table below:

TABLE 5  
RESULTS OF PATH ANALYSIS OF MODEL 1

Model		Coefficients <sup>a</sup>			t	Sig.	Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients			Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	-3.347	2.625		-1.431	.130		
	Brainstorming	.437	.087	.574	4.843	.000	.476	3.660
	Free Writing	.376	.101	.473	3.952	.000	.396	2.870

a. Dependent Variable: Teachers' Feedback

The value of standardized coefficients is the path coefficient of the Brainstorming variable (X<sub>1</sub>) and Free Writing (X<sub>2</sub>). The matrix of the path coefficient is:

$$\begin{pmatrix} \rho_{y_1x_1} \\ \rho_{y_1x_2} \end{pmatrix} = \begin{pmatrix} 0.574 \\ 0.473 \end{pmatrix}$$

TABLE 6  
DETERMINANT COEFFICIENT (R<sup>2</sup>)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.721 <sup>a</sup>	.784	.687	3.02479

a. Predictors: (Constant), Brainstorming, Free Writing  
b. Dependent Variable: Teachers' Feedback

The R Square or determinant coefficient is 0.784. Manually, the R Square is calculated by altering the path coefficient matrix X<sub>1</sub> and X<sub>2</sub> to a line matrix and then multiplying by the column matrix Y<sub>1</sub>. The path coefficient of the outside variables is calculated, namely ρY<sub>1E</sub>, with the formulation:

$$\rho_{Y_1E} = \sqrt{1 - 0.784} = 0.216$$

The path coefficient of ρY<sub>1</sub>X<sub>1</sub>

$$H_0 : \rho_{Y_1X_1} = 0$$

$$H_1 : \rho_{Y_1X_1} \neq 0$$

The path coefficient of X<sub>1</sub> to Y<sub>1</sub>, sig. Column is 0.000 smaller than 0.05. It means that the hypothesis H<sub>0</sub> is rejected and H<sub>1</sub> is accepted. Thus, the path coefficient of X<sub>1</sub> to Y<sub>1</sub> is significant.

The path coefficient of  $\rho Y_1 X_2$

$$H_0 : \rho Y_1 X_2 = 0$$

$$H_1 : \rho Y_1 X_2 \neq 0$$

The path coefficient of  $X_2$  to  $Y_1$  is 0.000, with a column sign, indicating it is smaller than 0.05. Thus, the hypothesis  $H_0$  is rejected and  $H_1$  is accepted, so the path coefficient of  $X_2$  to  $Y_1$  is statistically significant.

2. Model 2

In model 2, the Writing Skill Development variable is the dependent variable, while Brainstorming, Free Writing, and Teachers' Feedback variables are independent. The results of the path analysis are shown below:

TABLE 7  
RESULTS OF MODEL 2 PATH ANALYSIS

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	13.098	1.532		8.187	.000		
	Brainstorming	.147	.058	.187	2.763	.006	.278	3.371
	Free Writing	.147	.069	.261	2.510	.014	.328	3.145
	Teachers' Feedback	.563	.067	.523	10.087	.000	.346	3.081

a. Dependent Variable: Writing Skill Development

The table above shows the standardized coefficients, which are the path coefficients of Brainstorming ( $X_1$ ), Free Writing ( $X_2$ ), and Teachers' Feedback ( $Y_1$ ) variables. Furthermore, the path coefficient matrix is arranged:

$$\begin{pmatrix} \rho y_2 x_1 \\ \rho y_2 x_2 \\ \rho y_2 y_1 \end{pmatrix} = \begin{pmatrix} 0.187 \\ 0.261 \\ 0.523 \end{pmatrix}$$

TABLE 8  
DETERMINATION COEFFICIENT ( $R^2$ )

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.953 <sup>a</sup>	.897	.857	1.52685

a. Predictors: (Constant), Brainstorming, Free Writing, Teachers' Feedback  
b. Dependent Variable: Writing Skill Development

The determination coefficient (R Square value) is 0.897, which can be calculated manually by converting the variables of  $X_1$ ,  $X_2$ , and  $Y_1$  path coefficient matrix into a row matrix and then multiplying it by the  $Y_2$  column matrix. From the R Square, the path coefficient of other variables outside the model can be calculated, namely  $\rho Y_2 \epsilon$ , with the formula:

$$\rho Y_2 \epsilon = \sqrt{1 - 0.897} = 0.103$$

The path coefficient for  $X_1$  (Brainstorming) to  $Y_2$  (Writing Skill Development) is 0.006, which is smaller than 0.05, indicating that the hypothesis  $H_1$  is accepted, and  $H_0$  is rejected. Similarly, the path coefficient for  $X_2$  (Free Writing) to  $Y_2$  is 0.014, also smaller than 0.05, meaning hypothesis  $H_1$  is accepted, and  $H_0$  is rejected. For  $Y_1$  (Teachers' Feedback) to  $Y_2$ , the path coefficient is 0.000, which is smaller than 0.05, indicating that hypothesis  $H_1$  is accepted, and  $H_0$  is rejected. Based on these results, a path diagram with path coefficient values and the structural equation is created.

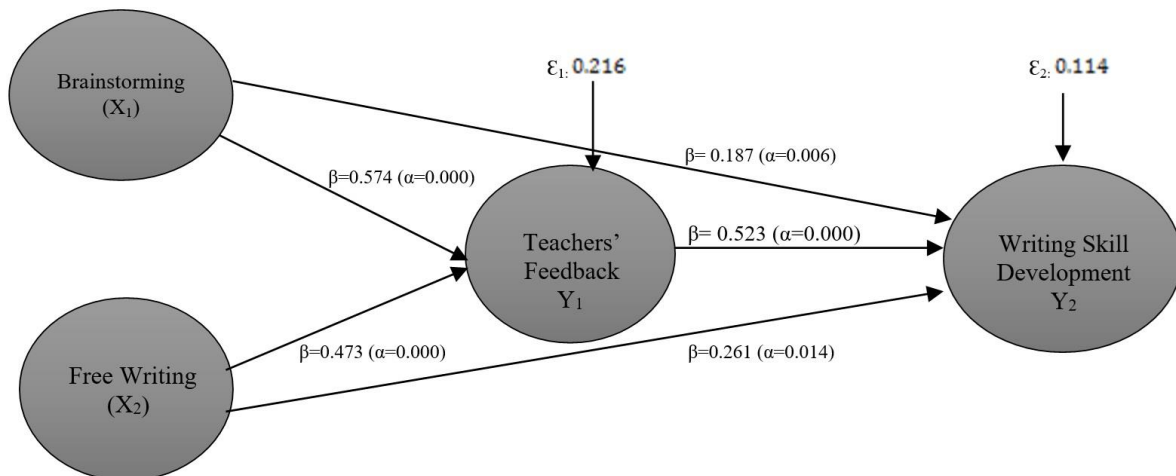


Figure 1. Path Diagram

*(e). Hypothesis Test**1. Brainstorming (X<sub>1</sub>) on Teachers' Feedback (Y<sub>1</sub>)*

The analysis of the effect of X<sub>1</sub> on Y<sub>1</sub> reveals a significant value of X<sub>1</sub> of 0.000, which is less than 0.05. Furthermore, the t<sub>count</sub> value (4.843) exceeds the t<sub>table</sub> value (1.990). It means that hypothesis 01, "Brainstorming affects Teachers' Feedback," is accepted. The conclusion is that Brainstorming has a direct significant effect on Teachers' Feedback.

*2. Free Writing (X<sub>2</sub>) on Teachers' Feedback (Y<sub>1</sub>)*

From the analysis of the effect of X<sub>2</sub> on Y<sub>1</sub>, the significant value of X<sub>1</sub> is 0.000 which is smaller than 0.05, with a t<sub>count</sub> value (3.953) > t<sub>table</sub> value (1.990). Thus, the research hypothesis 02 "Free Writing affects Teachers' Feedback" is accepted. The conclusion from the results of this analysis is that Free Writing has a direct, significant effect on Teachers' Feedback.

*3. Brainstorming (X<sub>1</sub>) on Writing Skill Development (Y<sub>2</sub>)*

From the analysis of the effect of X<sub>1</sub> on Y<sub>2</sub>, the significant value of X<sub>1</sub> is 0.005, which is smaller than 0.05, with a t<sub>count</sub> value (2.763) > t<sub>table</sub> value (1.990). Thus, the research hypothesis 03 "Brainstorming affects Writing Skill Development" is accepted. The conclusion from the results of this analysis is that Brainstorming has a partial direct effect on Writing Skill Development.

*4. Free Writing (X<sub>2</sub>) on Writing Skill Development (Y<sub>2</sub>)*

The analysis of the effect of X<sub>2</sub> on Y<sub>2</sub> reveals a significant value of 0.024, which is less than 0.05, and a t<sub>count</sub> value (2.510) exceeds the t<sub>table</sub> value (1.990). It means that the research hypothesis 04 "Free Writing affects Writing Skill Development" is accepted. The conclusion is that Free Writing has a partial direct effect on Writing Skill Development.

*5. Teachers' Feedback (Y<sub>1</sub>) on Writing Skill Development (Y<sub>2</sub>)*

From the analysis of the effect of Y<sub>1</sub> on Y<sub>2</sub>, the significance value of Y<sub>1</sub> is 0.000, which is smaller than 0.05, with a t<sub>count</sub> value (10.087) > t<sub>table</sub> value (1.990). Thus, the research hypothesis 05 "Teachers' Feedback affects Writing Skill Development" is accepted. The conclusion is that Free Writing has a partial direct effect on Writing Skill Development.

*6. Brainstorming (X<sub>1</sub>) on Writing Skill Development (Y<sub>2</sub>) Through Teachers' Feedback (Y<sub>1</sub>)*

The direct effect of X<sub>1</sub> (Brainstorming) on Y<sub>2</sub> (Writing Skill Development) is 0.187, while the indirect effect through Y<sub>1</sub> (Teachers' Feedback) is calculated by multiplying the beta values:  $0.574 \times 0.523 = 0.300$ . The total effect of X<sub>1</sub> on Y<sub>2</sub> is the sum of the direct and indirect effects:  $0.574 + 0.300 = 0.874$ . The direct effect value is 0.574, and the indirect effect is 0.428, showing that the direct effect is greater than the indirect effect. These results confirm that the hypothesis "Brainstorming has a significant effect through Teachers' Feedback on Writing Skill Development" is accepted, indicating that Brainstorming can indirectly influence students' writing skill development with Teachers' Feedback serving as a moderator.

*7. Free Writing (X<sub>2</sub>) on Writing Skill Development (Y<sub>2</sub>) Through Teachers' Feedback (Y<sub>1</sub>)*

The direct effect of X<sub>2</sub> (Free Writing) on Y<sub>2</sub> (Writing Skill Development) is 0.261, while the indirect effect through Y<sub>1</sub> (Teachers' Feedback) is calculated by multiplying the beta values:  $0.473 \times 0.745 = 0.352$ . The total effect of X<sub>2</sub> on Y<sub>2</sub> is the sum of the direct and indirect effects:  $0.473 + 0.352 = 0.825$ . The direct effect value is 0.473, and the indirect effect is 0.825, indicating that the indirect effect is greater than the direct effect. These results confirm that the hypothesis "Free Writing has a significant effect through Teachers' Feedback on Writing Skill Development" is accepted.

*B. Discussion**(a). Effect of Brainstorming on Teachers' Feedback*

Creative thinking is essential for generating ideas (Arafah et al., 2021). Even if the ideas may seem insignificant, they demonstrate that students are engaging with a specific topic. These ideas can serve as stepping stones to more practical solutions to simple problems. The brainstorming method in English learning aims to stimulate students' thinking and motivation, supported by English teachers. In this study, Brainstorming is the independent variable, and Teachers' Feedback is the moderator. The path analysis model shows that Brainstorming has a significant direct effect on Teachers' Feedback, with a standardized regression coefficient of 0.574. The higher the coefficient, the greater the impact Brainstorming has on teachers' feedback.

*(b). Effect of Free Writing on Teachers' Feedback*

Free Writing is a learning method that can be applied, especially in teaching English writing skills (Asriyanti et al., 2022). With this method, students can present their ideas in written form freely without being bound by the rules and systematics of correct writing, including grammar and sentence structure in English. Teachers' Feedback can help students identify errors, which can then be corrected, especially those related to grammar and sentence structure. In this study, Free Writing is an independent variable, and Teachers' Feedback is a moderator variable in explaining the effect

of Free Writing on Writing Skill Development in English. The results of the data analysis show that the Free Writing variable affects Teachers' Feedback with a standardized regression coefficient value of 0.473. The higher the standardized regression coefficient value, the greater the influence of Free Writing on Teachers' Feedback.

(c). *Effect of Brainstorming on Writing Skill Development*

Written work represents thoughts in the form of ideas organized coherently for clarity and ease of understanding (Asri et al., 2023). In scientific writing, coherence ensures a logical connection between ideas, sentences, and paragraphs, making the text easier to follow. The study found that Brainstorming has a significant effect on Writing Skill Development in English, with a standardized regression coefficient of 0.187. This means the higher the coefficient, the greater the impact Brainstorming has on writing skill development. Amoush (2015) found that Brainstorming positively affected the writing performance of English major students at Balqa Applied University in Jordan. Therefore, students are encouraged to regularly practice generating ideas, even if those ideas initially seem unimportant.

(d). *Effect of Free Writing on Writing Skill Development*

Free Writing in English learning encourages students to write freely, aiming to improve their writing skills without worrying about grammar, vocabulary, or sentence structure (Afiah et al., 2022). Research shows that Free Writing has a partially significant effect on students' Writing Skill Development, contributing 26.1% directly to it. The higher the standardized regression coefficient, the greater the contribution Free Writing makes to skill development. Puengpipattrakul (2014) noted that in Thailand, students' English competence is often measured by objective tests like multiple-choice, limiting their opportunities to write in English. This impacts their writing skill development. Sinaga et al. (2022) found that Free Writing significantly improves students' ability to produce narrative texts.

(e). *Effect of Teachers' Feedback on Writing Skill Development*

Teachers' Feedback is a form of teacher-student interaction that aims to help students recognize their competence. In the context of writing skills, teachers provide responses, corrections, or suggestions, especially those related to grammar, sentence structure, and vocabulary selection (Arafah & Kaharuddin, 2019). This research proves that Teachers' Feedback has a direct significant effect on the development of students' writing skills with a standardized regression coefficient value of 0.745. In this case, Teachers' Feedback contributes 74.5% to Students' Writing Skill Development.

(f). *Effect of Brainstorming Through Teachers' Feedback on Writing Skill Development*

To analyze the indirect effect of Brainstorming on Writing Skill Development, Teachers' Feedback is used as a moderator. First, the direct effect of Brainstorming on Writing Skill Development is analyzed. The beta value for Brainstorming's effect on writing skill development is 0.574, and the beta value for the effect of Teachers' Feedback as a moderator is 0.523. The direct and indirect effects are summed:  $0.574 + 0.300 = 0.874$ , indicating that Brainstorming contributes 87.4% to the development of students' writing skills. The mediating effect of Teachers' Feedback is calculated as follows:  $0.574 \times 0.523 \times 0.187 = 0.056$ . Therefore, the mediating effect of Teachers' Feedback in explaining the impact of Brainstorming on Writing Skill Development is 0.056, confirming that feedback is an effective mediator in this process.

(g). *Effect of Free Writing Through Teachers' Feedback on Writing Skill Development*

The direct effect of the Free Writing variable on Writing Skill Development is 0.261, while the indirect effect through Teachers' Feedback is 0.247. Therefore, the total effect of Free Writing on Writing Skill Development is 0.508, meaning that 50.8% of the improvement in students' writing skills is contributed by Free Writing, both directly and indirectly via teachers' feedback. The mediating effect of teachers' feedback is calculated as follows:  $0.473 \times 0.523 \times 0.261 = 0.064$ . Thus, the mediating effect of Teachers' Feedback in the relationship between Free Writing and Writing Skill Development is 0.064, confirming that feedback is an effective mediator in this process.

## V. CONCLUSION

The results of this study concluded that combining brainstorming and free writing with teacher feedback has a positive influence on improving students' writing skills in English. Partially, the use of the brainstorming method has an influence both directly and indirectly through teacher feedback on improving students' writing skills in English. Similarly, the use of the free writing method has both direct and indirect effects through teacher feedback on the improvement of students' writing skills in English. Thus, the use of teacher feedback as a mediator in the relationship between brainstorming and free writing with students' writing skill improvement can strengthen the relationship.

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