

Innovations

A Study on Effects of Teacher Mediation on Students' Writing Skills Performance

Wendu Mesele Abebe^{1*}, Abebe Gebretsadik Woldearegawi^{2*}

^{1*} PhD Candidate, Department of Foreign Language and Literature, College of Humanities, Language Studies, Journalism and Communication, Addis Ababa University, Ethiopia

^{2*} PhD in TEFL, Assistant Professor, Department of Foreign Language and Literature, College of Humanities, Language Studies, Journalism and Communication, Addis Ababa University, Ethiopia

Corresponding Author: **Wendu Mesele Abebe**

Abstract

This study aimed at investigating the effects of teacher mediated instructional approach on student writing skills performance. A quasi-experimental design was employed to conduct the research. The research participants were Hawassa University first-year Natural Sciences students. A simple random sampling technique was applied to select the two compasses and assign groups to the experimental or control groups. Data collecting instruments were writing skills tests and questionnaires. Analysis of the results revealed that there was a statistically significant difference in the experimental group between the pre-test and post-test on the importance and the mediator use of the principles. The independent samples t-test showed that students in the experimental group significantly outperformed the control group in writing content, organization, grammar use, and vocabulary but did not in mechanics usage. The paired samples t-test also showed that the experimental group significantly outperformed in the post-test. Cohen's d test results revealed that the effect of teacher mediation was strong. Overall, there was a statistically significant difference between the experimental and control groups in the performance of writing paragraphs and essays. The findings have implications for teachers, students and writing skills instructional materials designers.

Keywords: 1. Mediation criteria, 2. teacher mediation, 3. performance, 4. mediated learning experience, 5. mediation, 6. writing skills, 7. sociocultural

1. Introduction

1.1 Background of the study

Achieving a sufficient level of writing skills is usually challenging to students due to its complex and dynamic features. It demands bringing hosts of components together and making these components meaningful (MacArthur, Graham & Fitzgerald, 2016; Cheung, 2016; Olive, 2017). Asserting this, Ferris and Hedgcock (2014:24) explain that writing skill requires bringing diversified issues consisting of "semiotic, communicative, cognitive, and creative functions" together. Khojasteh, Hosseini, and Nasiri (2021) further state that writing is the most challenging and complex skill for students as it entails multiple aspects.

This shows that the development of writing skills is ultimately demanding and less likely to be achieved through a conventional teaching approach. This is one of the driving forces that push educators to look for an alternative, rigorous, and effective instructional approach in line with the diversified and challenging natures of the skill. A teacher-mediated instructional model emphasized by the sociocultural learning theory, for example, is among the approaches currently in the teaching of writing skills (Seng, 2003; Seng & Tan, 2008; Sanceverino, 2016; Loewen & Sato, 2017; Mitchell, 2018; Poehner, Infante, & Takamiya, 2018). Particularly, due consideration is given to the teacher's role as a mediator within the theory of mediated learning experience (hereafter MLE) (Kozulin, Gindis, Ageyev, & Miller, 2003; Poehner & Infante, 2022). MLE is an instructional approach in which the teacher places himself between instructional materials and the students (Feuerstein, Rand, & Rynders, 1988). Tzuriel (2001) states MLE is a "Teaching approach that focuses on an intentional intervention, but not directing". Orland-Barak and Maskit (2017) explain that mediation involves selecting and framing authentic experiences, designing problem-solving situations, and handling conceptual confusion.

It is also a part of critical pedagogy in which a mediator supports learners with their diversified academic needs and mediates for knowledge negotiation (Sanceverino, 2016; Mason, 2000). The critical pedagogical features of MLE can be associated with the assumptions that push educators to use the MLE over conventional instruction. According to Tzuriel, cited in Tan and Seng (2008), it is possible to modify cognition regardless of age, aetiology, or severity of a condition. The MLE process addresses it better than direct experience. The MLE function as opposed to the intelligence quotient (IQ) theory. He claims that human cognition skill or IQ is not static; but can be modified using the MLE to shape and mould students' social environment (Vygotsky, 1997).

Employing MLE, therefore, can facilitate the acquisition of a given stimulus (Feuerstines, 1942; Mann & Hinds, 2006). Tzuriel (2013) further states that a stimulus can be more receptive if a mediator exhorts efforts to adjust its frequency, order, intensity, and contexts. Besides, using MLE can make school-based instruction vital and help exploit learners' potential (Piccardo & Piccardo, 2016; Pachler, 2001; Walqui, 2008).

Vygotsky (1986) views writing skills as a sequence of words linked syntactically to each other to create meaningful thought by transforming inner speech into written form. The transformation undergoes with the help of a human agent. Because, as stated by Brown (2002), mediation can be used to facilitate the acquisition of a second language and bring about cognitive modification. MacArthur, Graham, and Fitzgerald (2016), Butcher and Kintsch (2001) and Olena-Hundarenko (2019) see writing through the lens of a sociocultural learning perspective as developed through social interaction. Winke and Brunfaut (2021) and Walqui (2008) also describe that sociocultural settings contribute rich inputs for writing skills improvement by using teacher mediation and scaffolding of intensive knowledge and challenging academic activities.

1.2 Statement of the problem

Writing is one of the language skills university students need to develop because it is becoming progressively vital in the national and international community. The practices of teaching the skills are, thus, increasing in foreign language pedagogy (Weigle, 2002). Nevertheless, students usually face difficulty in attaining a satisfactory level of performance (Grabe & Kaplan, 1996; Harmer, 1998). They assume writing is difficult skill to acquire and become reluctant when required to compose (Buis, 2007). The problems emanate from various sources. For instance, according to Raimes (1983) and Kroll (1990), cited in Burns and Richards (2012:119), some of the challenges students face in writing skills emerge from the teacher's mode of delivery, the learners' psychological and cognitive factors, and lack of exposure to the target language. They argue that L2 learners lack writing skills due to limited exposure to L2 inputs. The teacher's role in imparting the skills

appears to be the primary area of difficulty among the aforementioned components. According to Buis (2007), teachers' incorrect or ineffective roles in the classroom lead to students' incapacity to write well.

In a similar vein, even though writing proficiency is frequently regarded as the center of students' efforts to express their academic endeavours to Ethiopian universities and the local, national, and international communities, they are less likely to achieve this objective. This might be due to the teacher's use of inappropriate instructional approaches (Tefera, 2019; Delango, 2021). Empirical research findings and the present investigators teaching experiences support the claims. The researchers had given the courses for several years and observed gaps in the learners' performances related to writing relevant content, organizing ideas, and using appropriate vocabulary, grammar, and mechanics. Empirical research findings also confirmed that their writing skills performance was low. The problem can be partly related to the teaching approach pursued by teachers (Rass, 2015; Aberra, 2013; Tefera, 2019).

The researchers, therefore, aimed to conduct MLE-based instruction at Hawassa University first-year students and see its effects on their performance. The MLE-based studies investigated on reading, speaking, and tense aspects revealed significant improvements on learners performances (Yigzaw, 2005; Negari, 2010; Poehner et al., 2018). But little has been done on the effects of teacher mediation on writing skills performance. The present researchers aimed to investigate the effects of a teacher-mediated instructional approach on learners writing skill performance. The following hypotheses were drawn from the intended objective of the research.

Research Hypothesis:

H0: There is no a statistically significant difference between pre-teacher mediation and post-teacher mediation on student writing skills performance.

H1: There is a statistically significant difference between pre-teacher mediation and post-teacher mediation on student writing skills performance.

Research Question

The main research question was:

What are the effects of teacher mediation on student writing skills performance?

The specific research questions were:

- Is there a significant difference between pre-mediation and post-mediation in student writing skills performance?
- Is there a significant difference between pre-mediation and post-mediation in the use and importance of mediation principles?
- What is the degree of influence of teacher mediation on student writing skills performance?

2. Review of related literature

2.1 Mediation.

The conception of mediation was drawn from a sociocultural theory and acquainted with educational psychology due to the pedagogic interest in exploring a complementary instructional approach (Vygotsky, 1978). The theory underlines that a high conceptual process can be gained in the presence of mediating agents. Kozulin, Gindis, Ageyev, and Miller (2003) and as it is further stated in the Common European Framework of Reference (2022) human agent is one of the tools that can mediate students' learning, and this support can be realized as mediation. As a result, human agents are seen as one of the essential components of the learning process that can support a child's learning depending primarily on his cultural environment, as every culture has its own set of suitable tools and circumstances. Writing in its various forms, which

includes symbolic artefacts, signs, texts, formulas, graphic organizers, etc., is one of the most powerful psychological tools. As a result, an individual can grasp his psychological functions of perception, memory, and interest with the assistance of these tools through human agent.

2.2 Mediated learning experience (MLE).

According to Feuerstein (1979:110), mediated learning experience (MLE) refers to “human interactions that generate the capacity of individuals to change, modify, adaptability, and use of higher mental processes”. In other words, learning through MLE can be realized in the presence a mediator. Feuerstein et al. (2010, p: 24) describe the learning situation where there is mediation as “MLE occurs when a mediator who possesses knowledge, experience, and intention mediates to the world, makes it more understandable and imparts meaning to it by adding to the direct stimuli”. To Brown (2002:3) MLE in foreign language instruction is defined as “Interaction of a learner with the learning environment via the language instructor who assumes the role of a human mediator”. The MLE can contribute to students’ structural cognitive modifiability (SCM).

The purpose of applying MLE, therefore, is to bring about students’ structural cognitive modifiability Feuerstein et al. (1988). The terms in the phrase “structural cognitive modifiability” denote generalizability of change, modification of conscious mental activities, adjustments of personality traits, and capacity (Feuerstein et al. 1988; Tan & Seng, 2008).

2.3 Teacher mediation

Tzuriel (2001) conceptualizes teacher mediation as a purposive instructional approach that helps adjustment of the instructional intensity, order, learning context, and frequency of the stimuli based to learners needs (Tzuriel, 2013). Kelly, Hohmann, Pratt, and Dorf (2013) suggest that the teacher could have a role in modifying stimuli to suit the constraints encountered in the subject matter, classroom, and school culture. Feuerstein et al. (2010: 32) also identify roles possibly played by a mediator that include, “compare, collect, and classify data and to assign significance to the current experience concerning the previous experience”. Moreover, the mediator carefully looks at every event and practice so that he/she can gather and use them for intensifying the schemata of the activities of the mediate (Feuerstein et al. 2010).

In the context of learning a foreign language, MLE, according to Brown (2002:3), refers to a student's engagement with the learning environment via the language instructor, who serves as a human mediator. He contends that because MLE can be beneficial to them in many ways, language teachers and students stand to gain more from it. The following MLE principles were created by Feuerstein et al. (2010) and can be used when using teacher-mediated instruction.

- (A) *Mediation of Intentionality and reciprocity*
- (B) *Mediation of Meaning*
- (C) *Mediation of transcendence*
- (D) *Mediation of feeling competent*
- (E) *Mediation of self-regulation and control of behaviour*
- (F) *Mediation of sharing behaviour*
- (G) *Mediation of individual and psychological differentiation*
- (H) *Mediation of goal-seeking and goal-achieving behaviour*
- (I) *Mediation for a challenge*
- (J) *Mediation of awareness of the human being as a changing entity*
- (K) *Mediation for an optimistic alternative*
- (L) *Mediation for a feeling of belonging (Tzuriel, 2013; Feuerstein et al., 2010; Feuerstein, Feuerstein, & Falik, 2010; Kozulin et al., 2003; Feuerstein et al., 1988).*

2.4 Writing Skills Performance and measuring approaches

Hyland (2004) states that writing skill performance is “...the ability to perform particular writing tasks, usually associated with known academic or workplace requirements”. This definition tells writing skills performance is the accomplishment level of students in writing tasks. Writing performance indicators seem to vary based on the task type, level of education, and genre. For example, Jacob et al. (1981) and Heaton (1991), list text organization, writing relevant content, grammar, vocabulary, and mechanics use as performance indicating aspects. Hyland (2004) identified three things: the discriminating power of the prompts, the ease of the product to be read and evaluated and difficulty level of a task. He further lists issues like contexts, content, genre, activity, response, and language use as evaluating rubrics. IELTS also uses trait-based assessments like organization, cohesion, style, content, grammatical accuracy, sentence structure, vocabulary, and mechanics (Knoch, 2009).

Writing skills performance can be measured using different approaches. Heaton (1990) categorizes these approaches into holistic, analytic, and error counting or mechanical accuracy. Hyland (2004) classifies them into holistic, analytic, and trait-based approaches. The holistic marking approach assumes that a writing task needs to be considered a unit of writing skills and evaluated by allocating a single scale (Hyland, 2004; Fulcher & Davidson, 2012; Weigle, 2002). The Analytic approach, on the contrary, needs sorting out of particular features of constructs of achievement or failure of performance. The aggregate point is computed by summing up each point (Hyland, 2004). Many researchers prefer the analytic approach over others because it has advantages for students and teachers.

2.5 Conceptual Framework

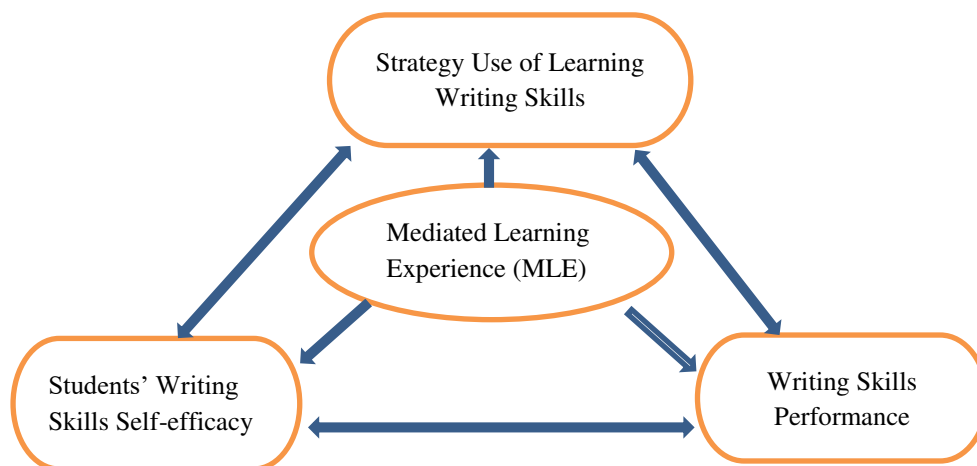


Figure 2.1 Conceptual framework

Figure 2.1 above shows the conceptual framework of the research that was designed based on the constructivism and (MLE) theories. The MLE is in the middle and associated with three variables in two-directional arrows that show the three variables are interrelated. That means the cognitive modification in one variable results in the other two variables. The straight lines between the three variables indicate that there are reciprocal effects between the variables. The one-directional arrows forwarded from MLE toward the three variables imply the effects that the MLE can bring on the variables.

3. Materials and methods

3.1 Study setting

The study examined the effect of teacher mediation on students' writing skills performance. A quasi-experimental design was employed because it gives chances to use intact groups without random allotment of participants in a treatment or control group (Cresswell, 2014; Johnson & Christensen, 2017). The study was conducted at Hawassa University, Ethiopia. The main campus and the Institute of Technology (IoT) were randomly selected using an available sampling technique because all first-year students were allotted to these campuses.

3.2 Population and Sampling

The participants were first-year undergraduate Natural Sciences Education Department students enrolled in 2022. There were 76 natural science sections, consisting of 30-33 students in each group, out of which section 18 was allocated as an experimental and section 43 for a control group using a random sampling method. There were 32 students in each group. Two students, one from each group, were rejected because they missed the performance tests and the questionnaire. As a result, the number of participants in each group was 31.

3.3 Writing Skills and performance indicators under investigation

Paragraph and essay-level writings focused on the study for both writing skills are highly interrelated, and the learners lack sufficient skill in these areas. Feuerstein et al. (2010) recommend that a base for a mediator to select and emphasize a stimulus is what he or she assumes significant based on his analysis of learners academic needs. Heaton's (1991) paragraph and essay performance writing measuring rubrics were employed. The indicators were: writing relevant content, organizing a text, and grammar, vocabulary, and mechanics use.

3.4 Data gathering instruments and Methods of Analysis

Data gathering instruments were tests and questionnaires. A writing skills performance test was taken from the International English Language Testing System (IELTS) online source designed for practising purposes because it is a standardized test. It consists of 3 parts: part-I paragraph writing, part-II essay writing, and part III interpreting table. A Statistical Package for Social Sciences (SPSS) version 24 was used to analyze the data. The statistical tests applied to analyze the data were Pearson Product moment correlation coefficient(r), paired sample t-test, independent samples t-test, and Cohen's d.

3.5 Mediators Selection

Two English language lecturers were selected and took training on the purposes and procedures of investigation based on the MLE theory and Walqui's (2008) model for writing skills scaffolding. In addition, it focused on the techniques mediator varies the frequency, order, intensity, and instructional contexts of a stimuli (Tzuriel, 2013:61).

3.6 Material

The investigators developed new teaching materials for writing skills based on the theories and guidelines of teacher mediation. The material was created with the intention of aligning instruction with student writing skill performance, strategy use and self-efficacy belief. Besides, it aspires giving students linguistically rich input. It was divided into six units, including "Managing Learning," "Culture," "Environment," "Technology and Human Life," "Health," and "Peace, the Only Way to Peace," in which paragraphs, essays, and interpretations of tables were integrated. Before it was employed, the opinions of two associate professors and an MA holder who had reviewed it were taken into consideration.

3.7 Ethical considerations

The researchers gave due attention to issues related to ethical considerations. We took a legal letter of cooperation from Addis Ababa University. We communicated with the Hawassa University Department of Natural Sciences Education about the purpose of the investigation. Then we discussed with the participants, principal mediator, and assistant the purpose and procedure of the study. We conducted the research after these parties gave us their consent.

3.8 Research Procedures

An interactionist mediation approach was employed over the interventionist, because in the former case, the mediator can identify the learners' cognitive problems during mediation in progress and simultaneously adjusts the mediation moves to cope with the learners' actual difficulties (Poehner & Lantolf, 2008:43-44).

The investigation conducted for 14 weeks from May 4, 2022, to September 7, 2022. Pre-mediation, while-mediation, and post-mediation stages were all applied to the entire inquiry. The pre-mediation time stage was (May 4, 2022) used to collect pre-test data by employing pre-test and questionnaires to measure participants current performance and keeping the records for comparisons. The tests scored by two raters to examine inter-rater reliability using an analytic scoring approach. Heaton (1990) recommends that to mark students' composition we have to sort out the salient components that include relevance (30%), organization (20%), grammar (25%), vocabulary (20%), and mechanics (5%) (Kroll, 1990; Cushing, 2002). Then both groups filled out the questionnaire in the presence of the investigator.

In the mediation stage, participants were provided with a copy of the newly designed material. The lesson presentation was run using Walqui's (2008) six models of instructional scaffolding for writing skills consisting of modelling, bridging, contextualizing, schema building, representing a text, and developing metacognition. The MLE principles were applied through interactions between the mediator and the students while the instruction was in progress (Poehner & Infante2022). The mediator employed the MLE principle by continuously modifying the frequency, order, intensity, and contexts of the writing lesson based on his assessment of students' gaps (Tzuriel, 2013). This helped to use the newly designed materials and activities and directed the students to novel ways of thinking. Hence, they were exposed to the mediation and remediation instructional processes in which the mediator evaluated students' work and identified their difficulties related to writing relevant content, organization, and usage of grammar, vocabulary, and mechanics and ran remediation moves in the areas of students' failure. The mediator employed the MLE principles by adapting to the contexts of writing skills instruction. For instance, he adapted the criteria of mediation for *intentionality* and *reciprocity* to "Making the intention of the writing lesson clear and requiring students to involve". He adapted the remaining principles in the same way. The post-mediation was the 14th week of investigation in which the post-mediation writing test was administered.

In contrast, the conventional instructional procedure was employed in the control groups. The group did not receive mediation and re-mediation based instruction based on the 12 mediation principles and Walqui's (2008) model of instructional scaffolding for writing skills. Instead, they were exposed to the introduction and presentation, which usually focus on the conceptual explanations of the writing skills contents. And the practices and evaluation schemes were not adequately employed on the spot as they were in the teacher-mediated class.

4. Result

The data gathered through tests and questionnaires were computed to see students writing skills performance in the pre-test and post-test presented below.

Analysis of pre-test inter-rater reliability

Table 1. Overall Pre-test Correlation Coefficient

Overall correlations	1	2
1. Control group	--	.878**
2. Treatment group	.917**	--

Note. 1= the experimental group (n=31). 2= the control group (n=31). * $P < .05$, ** $p < .01$, (2-tailed).

A Pearson correlation coefficient was computed to assess the relationship between the overall pre-mediation performance scores. The test showed that there was a strong correlation between the two raters. The control group $r = .878$ and the experimental group $r = .917$, $p < .01$.

Analysis of independent samples t-test scores

Tests for data normality and outliers

During the pre-mediation students took the writing skills meant for checking homogeneity in their ability of writing skills. A Shapiro-Wilk test was computed to see if the data distributed normally. The test result revealed that $W(62) = (.976), (.277), p > 0.05$. It showed the data distributed normally. The test computed to see if there were outliers revealed no outliers.

Table 2. The Independent-samples t-test results in the pre-test

	Experimental			Control		<i>t</i>	<i>DF</i>	<i>P</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Content relevance	62	7.42	3.61	7.11	4.80	0.288	61	.775
Organization	62	5.93	2.98	5.54	4.03	0.430	61	.669
Grammar	62	6.48	3.19	6.28	4.45	0.205	61	.838
Vocabulary	62	5.41	2.66	5.09	3.42	0.420	61	.676
Mechanics	62	1.53	0.82	1.43	1.24	0.378	61	.707
Overall performance	62	26.77	12.70	25.44	17.56	0.341	61	.734

** P is significant at 0.01 level (2-tailed).

The independent samples t-test was conducted to determine if there were significant differences between the experimental and control groups regarding writing relevant content, organizing ideas, and using the appropriate vocabulary, grammar, and mechanics. There was not a significant difference regarding writing relevant content between the experimental ($M = 7.42, SD = 3.61$) and control groups ($M = 7.11, SD = 4.80$), $t(61) = 0.288, p = .775$. $P > .05$. Concerning idea organization, there was not a statistically significant difference between the experimental ($M = 5.93, SD = 2.98$) and control groups ($M = 5.54, SD = 4.03, t(61) = 0.43, p = .669$). Regarding grammar use, the test showed that there was not a statistically significant difference between the groups, the experimental ($M = 6.48, SD = 3.19$) and control groups ($M = 6.28, SD = 4.45, t(61) = 0.205, p = .838$). Concerning vocabulary usage, the test revealed that there was not a statistically significant difference between the experimental ($M = 5.41, SD = 2.66$) and the control groups ($M = 5.09, SD = 3.42, t(61) = 0.420, p = .676$). Finally, the test computed to see the use of mechanics revealed that there was not a statistically significant difference between the experimental ($M = 1.53, SD = 0.821$) and control groups ($M = 1.43, SD = 1.24, t(61) = 0.378, p = .707$). The overall performance showed that there was not a statistically significant difference between the experimental ($M = 26.77, SD = 12.70$) and control groups ($M = 25.44, SD =$

17.55, $t(61) = .341, p = .734$). Thus, it could be concluded that the experimental and control groups were at the same performance level at the pre-test stage.

Analysis of results of the Post-test

Table 3. Paired sample t-test for the experimental group on the importance and use of teacher mediation principles

Importance and use of MLE principles		<i>N</i>	<i>M</i>	<i>SD</i>	<i>T</i>	<i>DF</i>	<i>P</i>	<i>Cohen's d</i>
Piar1	Pre-importance	62	2.70	.279				
	Post-importance	62	3.74	.655	-12.63	61	.000	2.22
Pair2	Pre-use	62	2.80	.330				
	Post-use	62	3.82	.590	-11.81	61	.000	2.22

Note: ** p significant at 0.01 (2-tailed).

A paired sample t-test computed to investigate participants' reflections on the importance and the teacher use of mediation principles revealed that there was a statistically significant difference in the mean scores between the pre-test ($M = 2.70, SD = .28$) and post-test ($M = 3.74, SD = .66, t(61) = -12.63, p = .000$). Cohen's $d = 2.22$, which shows the strong effect of the importance of the criteria. As to the teacher's use of mediation principles, there was also a statistically significant difference between the pre-test ($M = 2.80, SD = .330$) and post-test ($M = 3.82$ and $SD = .590; t(61) = -11.81, p = .000$). Cohen's $d = 2.22$, which indicates the strong effect of the teacher use of mediation criteria.

Results of the inter-rater reliability score

Table 4. Overall Pearson Correlation Coefficient of Rater 1 and 2

Correlations	1	2
1. Rater 1 experimental group	--	.956**
2. Rater 2 Control group	.989**	--

Note.1= the experimental group (n=31), 2 = the control group (n=31). ** $p < .01, (2tailed)$. $r_1 = \text{Rater 1}, r_2 = \text{Rater 2}$.

A Pearson correlation coefficient computed to assess the relationship between the overall post-teacher mediation performance of raters 1 and 2 showed that there are strong correlations between the two raters. The experimental group $r = .956$ and the control group $r = .989, p = <.01$.

Results of paired-sample t-test of students performance

Shapiro-Wilk test computed to see the normality of data distribution revealed that $W(62) = (.969), (.121) p > 0.05$. This shows the normal distribution of the data. Regarding outliers, the test showed that there were no outliers.

Table 5. Paired sample t-test of the experimental group on writing skills performance indicators

MLE Principles	Performance Indicators							
		<i>N</i>	<i>M</i>	<i>SD</i>	<i>T</i>	<i>DF</i>	<i>P</i>	<i>Cohen's d</i>
Piar1	Pre-content	31	7.42	3.61				
	Post-content	31	17.87	5.67	-11.86	30	.000	2.25
Pair2	Pre-organization	31	5.93	2.98				
	Post-organization	31	15.96	4.49	-13.53	30	.000	2.68
Pair3	Pre-grammar	31	6.48	3.19				
	Post-grammar	31	15.17	4.99	-12.47	30	.000	2.12
Pair4	Pre-vocabulary	31	6.50	3.33				
	Post-vocabulary	31	12.90	3.74	-9.07	30	.000	1.81
Pair5	Pre-mechanics	31	1.53	0.82				
	Post-mechanics	31	1.69	0.65	-0.915	30	.506	.22
Pair6	Pre-overall	31	26.77	12.70				
	Post-overall	31	61.36	17.20	-12.60	30	.000	2.31

***P* is significant at 0.01 level (2-tailed).

A paired-sample t-test computed to compare the performance of the experimental group in writing relevant content under the pre-mediation and post-mediation conditions indicated a statistically significant difference between pre-test ($M = 7.42, SD = 3.61$) post-test ($M = 17.87, SD = 5.67$), $t(30) = -11.86, p = .000$. *Cohen's d* = 2.25, which indicates a strong effect of teacher mediation. As with the idea organization, there was also a statistically significant difference between the pre-test ($M = 5.93, SD = 2.98$) and the post-test ($M = 15.96, SD = 4.49$), $t(30) = -13.53, p = .000$. *Cohen's d* = 2.68. This shows the strong effect of teacher mediation. Regarding performance in grammar usage, there is a statistically significant difference between the pre-test ($M = 6.48, SD = 3.19$) and the post-test ($M = 15.17, SD = 4.99$), $t(30) = -12.47, p = .000$. *Cohen's d* = 2.12, which shows that the effect size is modest. Concerning the use of appropriate vocabulary, the test showed a statistically significant difference in the pre-test ($M = 6.50, SD = 3.33$) and the post-test ($M = 12.90, SD = 3.73$), $t(30) = -9.07, p = .000$. *Cohen's d* = 1.81, indicating that the effect size is strong. However, there was statistically no significant difference in scores using mechanics in the pre-test ($M = 1.53, SD = 0.82$) and post-test ($M = 1.69, SD = 0.65$), $t(30) = -0.915, p = .506$. The overall performance showed a statistically significant difference between the pre-test ($M = 26.77, SD = 12.70$) and the post-test ($M = 61.36, SD = 17.20, t(30) = -12.60, p = .000$). *Cohen's d* = 2.31 indicates that the effect size is strong.

Table 6. Results of independent samples t-test of students' performance

	<i>N</i>	Experimental		Control		<i>T</i>	<i>D</i>	<i>P</i>	<i>Cohen's d</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Content Relevance	62	17.87	5.67	8.77	5.18	6.60	61	.000	1.68
Organization	62	15.96	4.49	7.59	4.41	7.40	61	.000	1.88
Grammar	62	15.17	4.99	6.99	4.31	6.91	61	.000	1.76

vocabulary	62	12.10	3.74	6.08	3.81	7.11	61	.000	1.60
Mechanics	62	1.69	0.65	1.63	1.00	.261	61	0.793	.07
Overall	62	61.36	17.20	30.00	17.72	6.92	61	.000	1.80

***p* is significant at 0.01 level (2-tailed).

Table 6 indicates the independent samples t-tests computed to determine if there are differences between the mean scores of the experimental and control groups post-mediation performance indicators. The mean score for the experimental group on writing relevance content ($M = 17.87, SD = 5.67$) is significantly higher than the control group ($M = 8.77, SD = 5.18$), $t(61) = 6.60, p = .000$. Cohen's $d = 1.68$. This shows that the effect of teacher mediation is strong. Regarding ideas organization, the experimental group ($M = 15.96, SD = 4.49$) is significantly greater than the control group ($M = 7.59, SD = 4.41$), $t(61) = 7.40, p = .000$. Cohen's $d = 1.88$. This indicates that the effect of teacher mediation is strong. As to the mean scores of grammar usage, the experimental group post-mediation ($M = 15.17, SD = 4.99$) is significantly greater than the control ($M = 6.99, SD = 4.31$), $t(61) = 6.91, p = .000$. Cohen's $d = 1.76$. This shows that the effect of teacher mediation is strong. The post-mediation mean score of the experimental group vocabulary usage ($M = 12.10, SD = 3.74$) was significantly higher than that of the control group ($M = 6.08, SD = 3.81$), $t(61) = 7.11, p = .000$. Cohen's $d = 1.60$. This reveals that the effect of teacher mediation is strong. But in the case of the appropriate use of mechanics, there is not a statistically significant difference between the experimental group ($M = 1.69, SD = 0.65$) and the control group ($M = 1.63, SD = 1.00, t(61) = .261, p = .793$). Cohen's $d = 0.07$. This reveals that the effect of teacher mediation is weak. Overall, the score of the experimental group ($M = 61.36, SD = 17.20$) was significantly greater than the control group ($M = 30.00, SD = 17.72, t(61) = 6.92, p = .000$) which shows $p < 0.05$ significance level. Cohen's $d = 1.80$. This reveals that the effect of teacher mediation is strong.

Discussion

The objective of this research was to look into how student writing performance was affected by teacher mediation. As a result, the study demonstrated that applying mediation principles and instructional scaffolding to develop writing abilities significantly improved students' ability to write essays and paragraphs. The results showed that the students who received teacher mediation significantly improved their writing of relevant content, organizing text, and grammar and vocabulary use than those who did not. However, students did not show progress in using mechanics. The finding further revealed that the effects of teacher mediation were strong on the mentioned performance constructs. It is also found that there was a statistically significant difference in the mean scores of the experimental group between pre-mediation and post-mediation on the importance of mediation principles and the teacher's use of the principles. The findings agree with earlier studies made by different investigators. Tüm, (2020), for example, drew similar results that indicated foreign language learners could overcome writing difficulties through mediating strategies, mediating texts, and concepts. Tesfie, Teka, and Asrade, (2021) findings that asserted using of teacher mediation with corpus-based instruction improved EFL students' academic writing skills in content, organization, grammar, and vocabulary agree with the present one. The findings are also consistent with Khojasteh, Hosseini, & Nasiri (2021) that asserted students who received flipped-based mediation outperformed the control group in writing content, organization, vocabulary, language use, and mechanics. The findings are further in accord with Poehner and Infante (2017) who revealed that the mediator guidance and support provided to tertiary level English as Second Language students helped to acquire the tense aspects system of the writing program. Alcaraz-Marmol (2021) came across a similar conclusion that student who engaged in mediation activities on receptive knowledge of vocabulary improved their receptive vocabulary. Vargas, Quesada, Vasquez, and Rojas's (2020) findings disclosed a similar conclusion that mediation of text structure, cohesion, and coherence through the consciousness-raising tasks of an essay writing improved experimental group performance more than the control group.

Conclusion

The writing instruction run through teacher mediation using mediation principles, and writing skills instructional scaffolding were worthwhile instructional approaches to improve the learners' performance of paragraphs and essay writing skills. Particularly, the experimental group enhanced their skills in writing relevant content, organizing texts, grammar, and vocabulary use. The effect of teacher mediation was also found stronger. As mentioned earlier, the findings and the literature revealed the effectiveness of teacher-mediated learning experiences for the development of students writing skills performance. Hence, the results drawn from the investigation have pedagogic implications. Achieving effective paragraph and essay writing skills is demanding for students. For this, the teacher mediation approach plays a vital role in solving students' problems as it requires the mediator's design and implements writing activities and makes rigorous and dynamic adjustments through interactions. Writing is a socially constructed skill in which students can get a considerable amount of input and strategies from the mediator, peer, and other knowledgeable individuals. Besides, writing skills materials developers, policymakers, and other potential stakeholders would find the results significant in producing effective material in line with the skills demanding features.

Declaration of conflict of interest

The authors declare that there is no conflict of interest

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Corresponding Email: wendumesele@gmail.com