An investigation into effects of teacher mediation on students’ writing skills self-efficacy belief

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Abstract
This study investigated the effects of teacher mediation on students' writing skills self-efficacy beliefs. To achieve the purpose of the study, a quasi-experimental research design was used. The research was done at Hawassa University in the Institute of Technology, and Main Campus which were selected using available sampling technique. The research participants were two sections of first-year undergraduate Natural Science students enrolled in the 2022 academic year. Sections 18 (n=31) and 43 (n=31) were chosen at random among the 76 sections. Tests and questionnaires were employed to collect data. The results revealed that the experimental group outperformed the control groups in their levels of mastery experience, adult-based vicarious experience, social persuasion, and physiological and emotional state when they write essays and paragraphs. Cohen’s d test results also showed that teacher mediation affected self-efficacy beliefs sources. The study indicated that employing teacher mediation would enhance students’ writing skills self-efficacy beliefs. Further studies on the applicability of the MLE approach in other language skills are needed.

Introduction
Writing skill seems complex due to its challenging and dynamic linguistic, cognitive and psychological aspects that prevent students from achieving adequate performance. Scholars in the field state that it obliges students to consider these features together and make them meaningful (Cheung, 2016; MacArthur, et al., 2016; Olive, 2017). Ferris and Hedgcock (2014, p.24) describe that to convey a message adequately, a writer needs to bring together multitudes of issues such as “semiotic, communicative, cognitive, and creative functions”. Researchers like Graham (2019) also state that writing is the most rigorous and challenging skill for students to develop as it entails recursive steps. Due to its demanding nature, students struggle to obtain the necessary level of self-efficacy belief that enables them to generate good writing.
In the Ethiopian case, there are broader contexts for using English language writing skills relative to other skills. For example, it is used for business communication, political discourse, international relations, mass media, and education (Ebabu, 2019). Particularly, university students need basic writing skills to complete academic tasks (Geremew, 1999). Given the benefits, it is taught utilizing a traditional approach to instruction from primary through universities to assist students in practicing and achieving the desired level of performance (Zeleke, 2017). However, it appears clear that students seem unable to execute at the desired level. For instance, studies by Zeleke (2017), Ebabu (2018), and Tamiru (2020) revealed that students who finished high school and enrolled in universities had unsatisfactory performance in writing skills. This seems to result in their low level of self-efficacy beliefs to produce commendable writing.

The former university curriculum included a "Basic Writing Skills Course" for first-year undergraduates, now integrated into communicative English skills parts I and II (MOE, 2013; MOE, 2020). However, students struggled with expected performance and self-efficacy due to inadequate teaching approaches by teachers (Mesfin, 2013).

Therefore, it is important to investigate various teaching strategies that might improve students' perceptions of their writing abilities. The use of a Mediated Learning Experience (MLE) is one of the approaches to instruction that is currently promoted to address issues with traditional second language teaching (Poehner & Infante, 2015). MLE is a pedagogical approach that uses a mediator to modify stimuli, enabling students to achieve learning objectives. It involves real-world problem-solving, managing misconceptions, and selecting appropriate experiences. MLE assumes humans possess unique cognitive modifiability, allowing humans to adapt to changing environmental demands, better explaining cognitive modifiability than direct unmediated experiences (Feuerstein, 1980; Sanceverino, 2016; Tzuriel, 2001). Teacher mediators address perceptual gaps in input, elaboration, and output phases, adjusting lesson contexts, intensity, order, and frequency using MLE principles (Feuerstein et al., 2010; Leask, 2001; Tzuriel, 2013).

MLE-based instruction improves writing skills and self-efficacy beliefs of the skill, impacting cognitive transformation and language acquisition potential. It can optimize students' potential for language acquisition, according to Brown (2002).

**Statement of the Problem**

English language writing skill is one of the skills that learners are required to develop as it is becoming increasingly significant in the international and national communication contexts. The need and practices of teaching the skill, thus, are growing in English as a foreign language (EFL) pedagogy (Deane, 2018; Weigle, 2002). Students are expected to develop their writing abilities because it is one of the primary ways of learning and communicating with teachers (Selvaraj & Aziz, 2019). However, foreign language learners usually encounter challenges to becoming proficient enough in the skill (Grab & Kaplan, 1996; Harmer, 1998; Selvaraj & Aziz, 2019). They struggle with skill acquisition and perceive mastery as challenging, leading to reluctance or skepticism when asked to write (Bonyadi & Branch, 2014; Buis, 2007; Raoofi et al., 2012). The hesitation in writing exercises may stem from a lack of motivation and low self-efficacy. Factors like teachers’ instructional approaches that can limit
or access exposure to the target language input, physiological and cognitive aspects, and psychological factors can impact students’ writing skill self-efficacy views (Al-Zoubi, 2018; Graham, 2019; Karafil & Oguz, 2022; Kroll, 1990; Raimes, 1983). Researches also highlight the importance of focusing on these psychological factors for producing high-quality writing (Arslan, 2012; Pajares, et al., 2007; Sophie et al., 2022; Usher & Pajares, 2008).

Ethiopian university students’ writing skills self-efficacy belief is less than standard due to the instructional approaches pursued by the teachers, indicating they may not produce effective writing. Empirical research and teaching experiences reveal this issue. The present researchers taught a Basic Writing Skill course for years, identifying gaps in students’ self-efficacy beliefs and confirming that their writing skills are not satisfactory. Empirical research findings also confirmed that students’ writing skill self-efficacy beliefs are not satisfactory (Dawit, 2011; Ebabu, 2018; Ebabu, 2019; Mesfin, 2013; Zeleke, 2017).

Therefore, the researchers tested whether teaching writing skills at Hawassa University using MLE theory would increase students’ self-efficacy views in their ability to write essays and paragraphs. Based on the presumptions, the following hypotheses were formed.

Null hypothesis (Ho): There is no statistically significant difference between the students who received teacher mediation and those who did not receive in paragraph and essay writing skill self-efficacy belief sources of mastery experience, vicarious experience, Social persuasion, and physiological and emotional state.

Alternative hypothesis (H1): There is a statistically significant difference between the students who received teacher mediation and those who did not receive in paragraph and essay writing skill self-efficacy belief sources of mastery experience, vicarious experience, social persuasion, and physiological and emotional state.

The following were the research questions posed: (1) Are there statistically significant differences in students’ self-efficacy beliefs sources about their paragraph and essay writing skills before and after mediation? (2) Is there a statistically significant difference in students writing skills performance between pre-mediation and post-mediation as a result of the enhancement of self-efficacy belief? (3) What are the degrees of influence of teacher mediation on students’ writing skill performance self-efficacy beliefs?

**Review of Related Literature**

The concept of mediation emerged from Vygotsky's sociocultural learning theory, which critiqued behaviorist and innatist learning theories. Behaviourists believe that learning occurs in the presence of a stimulus and response while innatists emphasize learning as the acquisition of knowledge. Both theories failed to address the need for a human mediator to facilitate learning. Vygotsky and his supporters explored alternative learning theories, leading to the development of mediation (Kozulin, et al., 2003; Vygotsky, 1978). A human mediator assists learners in their environment, using tools and conditions tailored to their needs. This human agent helps them master psychological functions like perception, memory, and attention, providing informed support through literacy tools like artefacts, signs, texts, and graphic organizers (Kozulin, et al. 2003; Vygotsky, 1978).
Mediated Learning Experience (MLE)

MLE theory is designed by Feuerstein, one of the advocates of Vygotsky. According to Tzuriel (2013, p. 60), MLE refers to “a special quality of interaction between a mediator and a learner”. In other words, learning through MLE can be realized where there is a mediator. Feuerstein et al. (2010) state the learning situation where there is mediated learning experience as follows: “MLE occurs when a person (mediator) who possesses the knowledge, experience, and an intention mediates to the world, makes it more understandable and imparts meaning to it by adding to the direct stimuli” (Feuerstein et al., 2010, p. 24).

According to Brown (2002), MLE in the context of foreign language learning refers to students' interactions with the learning environment through the language teacher, who acts as a human mediator. He argues that MLE serves them in different ways students stand to gain more benefits from it. Feuerstein et al. (1988) designed the parameters that can be applied when employing MLE. The parameters include:

- Mediation of intentionality and reciprocity
- Meaning, transcendence, feeling competent, self-regulation and control of behaviour, sharing behaviour, individual and psychological differentiation, goal-seeking and goal-achieving
- Challenge, awareness of the human being as a changing entity, an optimistic alternative, and feelings of belonging. (Brown, 2002, pp. 2-8; Feuerstein et al., 1988, p. 61).

The theory suggests that using MLE principles in the classroom improves students' cognitive functioning regardless of age, aetiology, or severity of conditions. These principles aim to dispel the myth surrounding the intelligence quotient (IQ) and facilitate structural cognitive modification (SCM), which involves meaningful changes in human cognition. Structural modifiability involves generalizability, while cognitive actions involve conscious psychological actions. Changes are limited, specific, and local, with poor durability compared to SCM (Feuerstein et al., 1988).

Teachers are the adults who can act as mediators employing the MLE principles, so teacher mediation is the support provided through social interaction between the instructor and the student to enhance the student's learning experience. According to Tzuriel (2001), teacher mediation is an instructional technique that emphasizes thoughtful didactical intervention, focusing on intentional education (Brown, 2002; Mason, 2000; Poehner & Infante, 2015; Tan & Seng, 2008; Tzuriel, 2001; Tzuriel, 2013). The role of the mediator is to adjust the instruction based on the dynamic instructional needs for cognitive modifiability. A mediator can improve the overall instructions by adjusting the intensity, order, context, and frequency of stimuli (Tzuriel, 2013). Furthermore, Feuerstein et al. (2010, p. 32) state that the role played by the mediator is encouraging students to “compare, collect, and classify data and to assign significance to the current experience concerning the previous experience”.

Teachers can effectively mediate students’ language use through the appropriate use of language forms for communication and the transformation of communicative abilities and mental functioning utilizing psychological tools. Gaining control of language’s forms, patterns, and meanings can help with this (Lantolf, 2012). Students' writing abilities and self-efficacy views can be improved with MLE-based help. The idea that students with low self-efficacy
continue to struggle even after getting assistance is refuted by this strategy. As it has been
demonstrated to be effective in diverse circumstances, MLE-based instruction tackles this
perplexing issue.

Self-Efficacy Belief

Self-efficacy belief is one of the psychological constructs that determine how much
effort students are willing to put into a certain task. Bandura (1997) defines self-efficacy belief
as the belief that one pertains to his capacity to organize and carry out the course of actions
expected to accomplish forthcoming situations. The theory is grounded on the perspective that
says human beings have traits that mediate their activities and help involve proactively in the
direction of their progress (Arslan, 2012; Pajares et al., 2007; Usher & Pajares, 2008;). Bandura
(1997) highlights self-belief as a personal factor enabling individuals to evaluate their control
over “thought, feeling and actions”. He further stressed the determinant nature of self-efficacy
belief and explains that “what people think, believe, and feel affects how they behave” (p. 25).

Bandura (1997) also argues that self-efficacy belief differs according to the task he/she
has at hand. He affirms that self-efficacy differs “across the realms of activities under different
levels of task demands within a given activity domain, and under different circumstances”. Self-efficacy views vary, impacting students’ task performance and engagement in classroom
settings when faced with challenges in tasks, such as writing assessments or reading to
classmates (Limpo & Alves, 2017; MacArthur et al., 2016).

Self-efficacy belief mediates writing skill performance, affecting learners’
achievements by facilitating or debilitating their abilities based on appropriate or inappropriate
beliefs. (Limpo & Alves, 2017). Pajares and Valiante (1996, p. 4) state that “self-efficacy belief affects what students do by influencing the choices they make, the efforts they extend,
the persistence and perseverance they exert in the face of adversity, and the anxiety they experience”. Additionally, results of empirical investigations support the need to increase
students’ self-efficacy because it affects their level of concentration, perseverance, and effort
in the classroom (Bandura, 1997; Limpo & Alves, 2017; Raoofí, Tan, & Chan, 2012;).
Furthermore, it is the main factor that consistently predicts students’ writing skill performances
(Bonyadi & Branch, 2014; Pajares et al., 2007; Raoofí et al., 2012; Usher & Pajares, 2008).

Researchers are focusing not only on how students’ self-efficacy beliefs affect the
quality of their compositions but also on the origins of those beliefs. This enables them to
channel their support through that source. Bandura (1997) divides the sources into four.
Mastery experience involves students analyzing academic outcomes, forming aptitude views,
and acting accordingly. Effective efforts increase self-efficacy, while unsuccessful efforts
decrease it. Students should analyze their work to form beliefs about their aptitude for other
tasks (Pajares et al., 2007). Cited in Pajares et al. (2007) and Calkins (1994), students believe
their work is effective if they perceive its significance. The vicarious experience involves
learning from others’ efficient task completion, improving views, and mediating through
modelling successes (Bandura, 1997). Pajares et al. (2007), however, claim that these types of
sources are not strong enough compared to mastery experience. They believe that modelling
has strategies to develop students’ self-efficacy beliefs (Bandura, 1997; Pajares et al., 2007).
Social persuasion impacts students’ capabilities and perceptions, with positive influence
inspiring and empowering, while negative can undermine self-efficacy (Pajares et al., 2007). Students assess skills based on physiological and emotional states, revealing mental and emotional moods (Bandura, 1997). Pajares et al. (2007) explain that negative ideas and fears in students reduce self-efficacy perceptions, causing stress, agitation, and subpar performance.

**Methods**

**Research Design**

The study investigated the effects of teacher mediation on students writing skill self-efficacy belief. To achieve this, a quasi-experimental design was employed. This design was used because it provides chances of using intact groups without random assignment of the study participants (Creswell, 2014; Mujis, 2004). This is because, in the case of Ethiopian higher education institutions, students are pre-assigned to their various groups, making it impossible to reassign them at random.

**Research Setting and Participants**

The study was done at Hawassa University’s main and IoT campuses. Participants of the study were the University’s first-year undergraduate Natural Sciences Education Department students, enrolled in the 2022 academic year and assigned to the main campus and Institute of Technology (IoT). The two campuses were selected because all first-year undergraduate students of the university were allocated to these campuses. An availability sampling technique was used to choose the two campuses because as of the implementation of the new university curriculum, all first-year undergraduate students were assigned to these campuses. The Natural Science Stream had 76 sections, with 43 and 18 chosen randomly as control and experimental groups respectively. Each group had 32 students, but one student did not complete surveys or take tests, resulting in 31 members in each group.

**Instruments and Methods of Data Analysis**

This investigation utilized two instruments: a writing skill test from IELTS, frequently used by language testers to assess students’ writing efficacy and a practice writing skill test. This study specifically used the test to evaluate students’ levels of writing efficacy. The test consists of four items: 20-minute paragraphs on deforestation’s effects on the environment, process analysis on the water cycle, 40-minute essays on university study cost sharing or government full cost covering and table interpretation. Students were required to discuss relevant content, organize ideas, and use mechanics, grammar, and vocabulary. The test assessed learners’ self-efficacy beliefs.

A questionnaire was used to prompt learners’ self-reported data about their efficacious beliefs in the targeted skills (Petric & Czal, 2003). It consists of four parts. The first was a five-point Likert scale inventory used to prompt the importance of the mediation principles with possible answers (ranging from ‘very important’ to ‘not at all’). The second part of the questionnaire was a five-point Likert scale inventory on the teachers’ use of mediation principles with five possible answers (ranging from ‘very often’ to ‘not at all’). The two
questionnaires were taken and adapted from (Abiy, 2005; Wogari, 2010). The adaptation includes changing ‘Tell you the meaning of the lesson and why a particular speaking activity is important’ to ‘Tell you the meaning of the lesson and why a particular writing skill activity is important’. The third and fourth parts of the questionnaires were adapted from Pajares (1997), Dawit (2008), and Anteneh (2005), focusing on students' confidence in their writing skills and sources of self-efficacy belief. The third part used a scale from 0 to 100, while the fourth part used a Likert scale.

A Statistical Package for Social Sciences (SPSS) version 24 was used to analyze data from writing performance tests, teacher mediation principles inventory, and self-efficacy belief. Statistical tests included Pearson Product moment correlation coefficient, paired sample t-test, independent samples t-test, and Cohen's d. Heaton's (1990) rubrics were used to score the test. Ratters divided points further, and the normality of data distribution was checked during pre- and post-mediation.

Preparation of New Writing Skills Material

The researchers designed a new writing skill teaching material based on the theoretical assumptions and principles of teacher mediation set by Feuerstein MLE and Walqui's (2008) writing skill instructional scaffolding model. Besides, the guidelines for designing instructional materials provided by EFL instructional materials development researchers were used (Cunningsworth, 1995). New material aims to improve students' writing skills and self-efficacy by providing linguistically rich input. The study considered both paragraph and essay writing due to their close ties and students' gaps in skills. Self-belief in one can influence the other, either positively or negatively. Feuerstein et al. (2010) suggest mediators improve foundations to identify stimuli based on learner needs, focusing on skills needed to meet students' demands. It is divided into six thematic units, including Managing Learning, Culture, Environment, Technology and Human Life, Health, and Peace, the Only Way to Peace. It was reviewed and validated by two associate professors and two MA holders before the investigation.

Procedures of the Study

Two English language lecturers were selected based on their academic specializations and teaching experience. They took a three-day, 12-hour training on the investigation's goals and methods. Teacher 01 was the main mediator, while Teacher 02 assisted with test scoring.

The mediation approach was interactionist allowing mediators to identify cognitive difficulties and modify activities to address students' real misunderstandings. In the interventionist case, predesigned moves, hints, and prompts can be used, with minimal chance of employing extra mediational activities (Poehner, 2008).

The mediator applied MLE (an independent variable) to improve students' writing skill self-efficacy belief sources, focusing on mastery experience, vicarious experience, social persuasion, physiological and emotional status and their writing skills performance which are the dependent variables.
The study lasted 16 weeks from May 9-15, 2022, with teacher mediation held for 14 weeks. The first week was pre-mediation, followed by the last week August 22-28, 2022, for post-mediation. The pre-mediation stage involved administering a pre-test and questionnaire to both control and treatment groups, comparing them with the post-test. Inter-rater reliability was computed to check raters’ scores' reliability. Then, it was provided to the two raters for marking using the rubric-based weightings for the indicator: content relevance 30%, organization 20%, grammar 25%, vocabulary 20%, and mechanics 5%. Based on each signal, a different amount of points was awarded to each writing assignment. For example, relevant material receives 30% of the overall points. The findings of the Likert scale questionnaire were also computed and recorded for comparisons to be performed after mediation.

During the mediation phase, learners received a print copy of the newly prepared material. The mediator utilized an instructional scaffolding procedure for writing skills, including modelling, bridging, contextualizing, schema building, representing, and developing metacognition. The mediator introduced the lesson theme, led a discussion, and read a text to prepare students for the writing session, activate schematic understanding, and contextualize their work.

Then, a specific writing task (paragraph or essay) was pursued, along with its related subtopics on rhetorical focus, model writing, language focus (vocabulary specifically related to that genre, tense), model writing analysis, and metacognitive activities (brainstorming, planning, drafting, editing, proofreading, and presenting). Students were instructed to write similar pieces on suggested subjects at both course points and end, representing a new text. The mediator continuously modified the lesson utilizing MLE concepts as he created the lesson. For instance, the mediator applied the "Mediation for Meaning" approach by using teacher-student interactions to explain why practicing a certain writing skill is crucial. A dialogic interaction was a mediational interaction that encouraged group participation in assignments to lead students to innovative ways of thinking. To address the learners' self-efficacy gaps in a particular lesson and cognitive issues linked to blurred and sweeping, impulsive, and episodic perception problems demonstrated at the input, output, and elaboration, the mediator employed the MLE (Feuerstein et al., 2010). As a result, the mediator conducted evaluations and modifications. A specific writing lesson was adjusted by adjusting its frequency, sequence, intensity, and circumstances. According to Tzuriel (2013), a mediator is advised to modify these areas.

The mediator helped students improve mastery of targeted skills by producing relevant content, organizing thoughts, and employing grammar, vocabulary, and mechanics. The mediator intervened by changing stimuli context, frequency, intensity, and order where needed. The mediator utilized peer-based vicarious experience through sharing behaviors like pair work and classroom presentations. The mediator utilized sample sentences, essays, and tables to support adult-based vicarious experiences. He promoted social persuasion, provided critique opportunities, and encouraged feedback during mediation movements. Through interaction, awareness-raising, task analysis, learning management demonstrations, and metacognitive techniques, the mediator helped students control their physical and emotional states while writing (Tzuriel, 2013).
In the control group, in contrast, a conventional instructional procedure was applied for both paragraphs and essay lessons. The group did not receive a mediation and remediation scheme for writing skills self-efficacy belief instruction based on the 12 mediation principles and Walqui’s (2008) model of instructional scaffolding for writing skills. Instead, the instruction was run through the common procedures which consist of introduction, presentation, and practice phases. The introduction and presentation were commonly used phases by the teacher. He focused on the conceptual explanations definitions, classifications, features of paragraphs, essays and table interpretations using the lecture method. There were some attempts to provide students with practical exercises. The majority of the practical parts of the lessons were left to be done as assignments and homework without sufficient MLE-based support. The teacher did not investigate what students encountered and adjust frequency, order, contexts, and intensity per the student’s needs. In other words, students had little chance of getting additional instructional remedies when they failed to achieve the intended objectives.

The post-mediation was the 16th week of investigation in which the post-mediation writing test and questionnaire were administered.

Results

Analysis of Pre-test Results

The data gathered through tests and questionnaires was analyzed in this section to look into participant writing skill self-efficacy beliefs and performance during the pre-test and post-test. The results are shown below with the corresponding comparisons.

Table 1

<table>
<thead>
<tr>
<th>Overall correlations</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Control group</td>
<td>--</td>
<td>.88**</td>
</tr>
<tr>
<td>2. Treatment group</td>
<td>.92**</td>
<td>--</td>
</tr>
</tbody>
</table>

Note. 1 = the experimental group (n = 31). 2 = the control group (n = 31). **p < .001 (2 tailed)

As indicated in Table 1, a Pearson correlation coefficient was run to examine the relationship between the two raters’ overall pre-mediation writing skills performance scores. The result revealed that there was a strong correlation. The control group $r = .88$ and the experimental group $r = .92, p < .001$. This demonstrates that the groups' results in the writing of paragraphs and essays were reliable.

Analysis of Independent Samples t-test

Tests for Data Distribution Normality and Outliers

Shapiro-Wilk test was run to see whether the data were normally distributed. $W (62) = (976), (.277), p > 0.05$ was the test's outcome. It demonstrates the normal distribution of the data. There were no outliers, according to the test that was computed to check for them.
Table 2

Independent-Samples t-test Results in the Pre-test Writing Skills Performance

<table>
<thead>
<tr>
<th></th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>62</td>
<td>26.77</td>
</tr>
<tr>
<td>M</td>
<td>12.70</td>
<td>25.44</td>
</tr>
<tr>
<td>SD</td>
<td>17.54</td>
<td>17.55</td>
</tr>
<tr>
<td>t</td>
<td>.341</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>61</td>
<td>.734</td>
</tr>
<tr>
<td>P</td>
<td>.341</td>
<td></td>
</tr>
<tr>
<td>Cohen’s d</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall performance

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

The independent samples t-test was conducted to determine if there was a significant difference between the groups in overall writing skills performance at the outset of mediation and the test disclosed that there was no a statistically significant difference between the experimental group ($M = 26.77$, $SD = 12.70$) and the control group ($M = 25.44$, $SD = 17.55$, $t(61) = .341$, $p > .05$). The experimental and control groups had comparable writing performance before the investigation. Students' self-efficacy belief and writing performance were related. As a result, the independent samples t-test was computed to evaluate writing self-efficacy before mediation.

Table 3

A Pre-test Independent Samples t-test Students’ Rating scales in their Self-efficacy Belief

<table>
<thead>
<tr>
<th></th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>62</td>
<td>38.76</td>
</tr>
<tr>
<td>M</td>
<td>7.55</td>
<td>40.16</td>
</tr>
<tr>
<td>SD</td>
<td>7.86</td>
<td></td>
</tr>
<tr>
<td>t</td>
<td>-0.72</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>61</td>
<td>.476</td>
</tr>
<tr>
<td>P</td>
<td></td>
<td></td>
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<tr>
<td>Cohen’s d</td>
<td></td>
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</tr>
</tbody>
</table>

Students’ rating on their self-efficacy-belief

Note. $p > .05$ level (2-tailed).

Table 3 above indicates independent samples t-test of the experimental and control group students’ scale ratings in pre-mediation self-efficacy belief. The mean of the experimental group ($M = 38.76$, $SD = 7.55$) and the control groups ($M = 40.16$, $SD = 7.86$; $t(60) = -0.72$, $p > .05$). The test showed no statistically significant differences in pre-mediation and post-mediation between experimental and control groups, indicating comparable efficacious beliefs and performance levels. Below is a presentation of the post-mediation data.

Analysis of Results of the Post-tests

Table 4

Paired Sample t-test of Experimental Group Ratings on the Importance and Use of the MLE Principles

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>P</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piar1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-importance</td>
<td>62</td>
<td>2.70</td>
<td>.279</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-importance</td>
<td>62</td>
<td>3.74</td>
<td>.655</td>
<td>-12.63</td>
<td>61</td>
<td>.000</td>
<td>2.22</td>
</tr>
<tr>
<td>Pair2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-use</td>
<td>62</td>
<td>2.80</td>
<td>.330</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-use</td>
<td>62</td>
<td>3.82</td>
<td>.590</td>
<td>-11.81</td>
<td>61</td>
<td>.000</td>
<td>2.22</td>
</tr>
</tbody>
</table>

Note: **P is significant at 0.01 (2-tailed).
Paired sample t-test was computed to investigate students’ reflections on the importance and the mediator’s use of mediation principles. There was a statistically significant difference in the mean scores between pre-mediation and post-mediation regarding the importance of mediation principles in the pre-test (M = 2.70, SD =.279) and post-test (M = 3.74 and SD = .655) t (61) = -12.63, p < .001. Chen’s d = 2.22. It shows a strong effect on the importance of the criteria. As to the mediator’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 < .001). Cohen’s d = 2.22. It showed a strong effect of the teacher’s use of the criteria. Before calculating post-test findings, a Pearson correlation coefficient test is used to determine the reliability of the scores rated by the two raters.

Table 5

<table>
<thead>
<tr>
<th>Overall Pearson Correlation Coefficient of Rater 1 and 2 inter-rater reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall correlations</td>
</tr>
<tr>
<td>1. Rater 1 experimental group</td>
</tr>
<tr>
<td>2. Rater 2 Control group</td>
</tr>
</tbody>
</table>

Note. 1= the experimental group sample (n=31). 2 = control group (n=31). *P < .05, ** p < .001 (2-tailed). r1= Rater 1, r2 = Rater2.

As depicted in Table 5, a Pearson correlation coefficient was computed to assess the relationship between the overall post-mediation performance scores of raters 1 and 2. There were strong correlations between the two raters. The experimental group r = .96 and the control group r = .99, p < .001. This shows that the groups’ results in the writing of paragraphs and essays were consistent and reliable.

Effects of Teacher Mediation on Students’ Writing Skills Performance

In this subsection, a paired-sample-test, independent samples t-test, and Cohens’d tests were computed to investigate student performance during the pre-test and post-test and between the control and experimental groups and the strength of the effect of teacher mediation.

Table 6

<table>
<thead>
<tr>
<th>Paired-sample t-test Results in the Post-test Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLE Principles</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Pre-overall</td>
</tr>
<tr>
<td>Post-overall</td>
</tr>
</tbody>
</table>

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

A paired-sample t-test was computed to compare the performance of the experimental group. The overall paragraphs and essay writing 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 which indicates the teacher’s mediation strongly impacted the participants’ performance.
A paired-sample t-test was computed to compare the self-efficacy belief of the experimental group between the pre-mediation and the post-mediation times. There was a statistically significant difference in the scores of self-efficacy beliefs between the pre-tests condition (\( M = 38.758, SD = 7.546 \)) and the post-test (\( M = 62.603 \) and \( SD = 16.694 \)); \( t (30) = -7.44, p < .001 \). Cohen’s \( d = 1.967 \). It shows that teacher mediation significantly improved participants' efficacy belief.

Table 8 above shows the independent samples t-test of the experimental and control group’s post-mediation paragraphs and essays writing skills self-efficacy belief. The experimental group (\( M = 62.60, SD = 16.69 \)). The control groups (\( M = 40.34, SD = 7.594 \), \( t (60) 6.76, p < .001 \)). The test revealed that there was a statistically significant difference between the experimental and control groups in the pre-mediation. Cohen’s \( d = 1.833 \). This result revealed that the mediation move implemented in exhorted a strong effect on the experimental group.
A paired-sample t-test was computed to compare students’ self-efficacy beliefs on the writing skills mastery experience of the experimental group in the pre-mediation and post-mediation conditions showed a statistically significant difference pre-test \((M = 2.79, SD = 0.56)\) post-test \((M = 4.58, SD = 0.87); t (30) = -11.670, p < .001\). Cohen’s \(d = 2.503\). Regarding the peer-based vicarious experience, however, there was not a statistically significant difference pre-test \((M = 3.05, SD=0.70)\) and post-test \((M = 3.19, SD = 0.63); t (30) = -7.13, p > .05\). Cohen’s \(d = 0.21\). As for adult-based sources of vicarious experience, there was a statistically significant difference between the pre-test \((M = 3.39, SD=.82)\) and post-test \((M = 4.13 and SD = 1.05); t (30) = -3.18, p < .001\). Cohen’s \(d =0.79\). Concerning social persuasion, there was a statistically significant difference between the pre-test \((M = 2.79, SD = 0.56)\) and post-test \((M = 4.58 and SD = 0.87); t (30) = -11.67, p < .001\). Cohen’s \(d =2.27\). The physiological and emotional state showed a statistically significant difference between the pre-test \((M =3.73, SD = 0.71)\) and post-test \((M = 4.40 and SD = 0.74); t (30) = -5.495, p < .001\). Cohen’s \(d = 0.92\). Teacher mediation strongly impacted mastery experience and social persuasion, with a moderate effect on adult-based vicarious experience, social persuasion, and physiological and emotional state. Peer-based experience had weaker effects.

### Table 10

**Independent Samples t-test on Sources of Self-Efficacy Belief**

<table>
<thead>
<tr>
<th>Self-efficacy belief sources</th>
<th>N</th>
<th>Experimental M</th>
<th>SD</th>
<th>Control M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>P</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery experience</td>
<td>62</td>
<td>4.58</td>
<td>0.87</td>
<td>2.81</td>
<td>0.62</td>
<td>9.34</td>
<td>61</td>
<td>.000</td>
<td>2.38</td>
</tr>
<tr>
<td>Vicarious experience peers</td>
<td>62</td>
<td>3.17</td>
<td>0.64</td>
<td>3.06</td>
<td>0.75</td>
<td>0.61</td>
<td>61</td>
<td>.546</td>
<td>0.16</td>
</tr>
<tr>
<td>Vicarious experience adults</td>
<td>62</td>
<td>3.58</td>
<td>0.60</td>
<td>3.04</td>
<td>0.67</td>
<td>3.34</td>
<td>61</td>
<td>.001</td>
<td>0.85</td>
</tr>
<tr>
<td>Social persuasion</td>
<td>62</td>
<td>4.58</td>
<td>0.87</td>
<td>3.73</td>
<td>0.83</td>
<td>3.95</td>
<td>61</td>
<td>.000</td>
<td>1.00</td>
</tr>
<tr>
<td>Physiological &amp; emotional status</td>
<td>62</td>
<td>4.40</td>
<td>0.74</td>
<td>3.83</td>
<td>0.80</td>
<td>2.89</td>
<td>61</td>
<td>.000</td>
<td>0.74</td>
</tr>
</tbody>
</table>

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

An independent samples t-test was computed to determine if there was a statistical difference between means of experimental and control groups’ self-efficacy beliefs sources originating from mastery experience, vicarious experience from peers, and vicarious experience from adults, social persuasion and physiological and emotional status. Mastery experience sources of the mediated group \((M = 4.58, SD = .087)\) was significantly higher than the unmediated group \((M = 2.81, SD = 0.62), t (60) = 9.34, p < < .001\). Cohen’s \(d = 2.38\). However, the peer-based vicarious experience of the experimental groups \((M = 3.17, SD = 0.64)\) was not a statistically significant difference from the control group \((M =3.06, SD = 0.75), t (61) = 0.61, p > .05\). Cohen’s \(d = 0.16\) showed week effect. There was a statistically significant difference between the experimental and control group in terms of vicarious experience from adults \((M = 3.22, SD = 0.60)\) control group \((M = 3.58, SD = 0.60), t (61) = 3.34, p < .001\). Cohen’s \(d = 0.85\). The belief scores for social persuasion of the experimental group \((M = 4.58, SD = 0.87)\) was significantly greater than the control group \((M = 3.73, SD = 0.83), t (60) = 3.95, p < .001\). Cohen’s \(d =1.00\) showed a moderate effect size. In terms of physiological and emotional state, the experimental group’s score \((M = 4.40, SD = 0.74)\) was
significantly higher than the control group’s \((M = 3.83, SD = 0.80 \ t (60) = 2.89, p < .001)\). Cohen’s \(d = 0.74\) indicates a moderate effect size. Mediation had a strong effect size on self-efficacy belief sources, with mastery experience having the biggest. Social persuasion, adult-based vicarious experience, and physiological and emotional state were moderate, while vicarious experience among peers had a weak effect size.

**Discussion**

This study aimed to investigate how teacher mediation affected students’ perceptions of their writing abilities. Thus, the independent samples t-test result showed that the experimental group students had better mastery experience, vicarious experience from the adult, social persuasion, and physiological and emotional condition than the control groups. The results of the experimental group mean score of the paired sample t-test revealed statistically significant variations between the pre-test and post-test in mastery experience, social persuasion, and physiological and emotional state. Vicarious experience gained from peers, however, did not result in improvements on either test. This may be the case because students may believe the information on self-efficacy they learn from classmates is unimportant because they are at the same educational level. According to Cohen’s d results, teacher mediation brought a strong effect on mastery experience and social persuasion efficacy beliefs. Adult-based vicarious experiences and physiological and emotional states belief sources have a moderate effect size, while peer-based sources show a weak effect. The independent samples t-test and paired sample t-test results on self-reported rating scales on writing skills aspects also showed a significant difference between the pre-test and post-test. The pre-test and post-mediation performance of the experimental and control groups differed statistically significantly, according to both the paired sample t-test and the independent samples t-test which asserted the students’ of enhancement the efficacious belief. In both tests, Cohen’s d result revealed a strong effect.

The contribution of mediational moves to writing skills self-efficacious behaviors enhancement was tracked and triangulated with participants' ratings on the mediator’s classroom use importance of MLE. Hence, both paired sample t-tests on the mediator’s classroom use and the importance of MLE showed a statistically significant difference.

Various previous studies revealed improved learners’ writing skill self-efficacy belief sources related to mastery experience indicators such as writing relevant content, idea organization, vocabulary use, language use, and mechanics as a result of teacher mediation. For example, Khojasteh et al. (2021) showed that students who have an orientation to flipped-based mediation improved students mastery of writing relevant content, idea organization, vocabulary use, language use, and mechanics. Likewise, Vargas et al. (2020) investigation revealed a similar conclusion that mediation of text structure, cohesion, and coherence through conscious-raising tasks of essay writing improved experiential group performance. Poehler and Infante (2016) also revealed that the mediator guidance and support provided to Second Language students helped them acquire the tense aspects system. Alcaraz-Marmol (2021) came across a similar conclusion that students who engaged in mediation activities on receptive knowledge of vocabulary improved their receptive vocabulary. Furthermore, Tum’s (2020)
finding concord with the present result that the implementation of texts mediation, mediating strategies, and concepts appeared to solve the writing skill challenges of EFL students. Similarly, Todd (2019) revealed that teachers’ help through vicarious self-efficacy belief sources by modelling strategies improve participants’/learners’ beliefs. The result further agrees with Hood’s (2018) findings which revealed an improved mastery and vicarious experience due to the writing workshops.

As with efficacious belief emerging from a physiological and emotional state, Tarkan-Blanco (2020) found that a process-and–collaborative-centred approach to teaching composition can be a feasible solution to reducing writing skills anxiety. Similarly, Ruzek et al. (2016) reported that teachers’ emotional support on students’ engagement and motivation indicated significant mediating effects on peer relationships that led to social persuasion. Kelly and Gaytan (2020) reported similar findings that instructor’s mediation of perceived immediacy of behaviours and clarity positively influenced students’ writing anxiety. The finding concord with previous investigations that reported social persuasion offered by teachers and trained peers’ feedback contributed to the development of students’ beliefs (Blackmore, 2011; Cui et al., 2021). Besides, Situmorang (2022) reported that participants’ confidence increased due to verbal persuasion.

The investigations done by (Khojasteh et al., 2021; Poehner & Infante, 2016; Ruzek et al., 2016; Situmorang, 2022; Tum, 2020; and Vargas et al., 2020;) examined the effects of interventions on efficacious belief; this study opens new insights on improving belief sources based on rigorous and demanding classroom mediational moves in the ways of tackling curious self-efficacious difficulties students usually face in developing paragraph and essay writing skills.

**Conclusions and Implications**

**Conclusions**

The development of students’ writing skills is a challenging task that inquires due consideration of their writing skill self-efficacy belief. Enhancements of self-efficacy belief sources require the provision of interventions through a teacher mediation instructional approach in which the mediator accesses sufficient, all-rounded, and rigorous support. The classroom use of the MLE in this investigation revealed positive effects on the development of students’ self-efficacious belief sources. The approach contributed to the improvements of mastery experience, vicarious experience, social persuasion, and physiological and emotional self-efficacy belief sources.

**Implications**

As a result, it is vital to note that applying MLE-based instructional principles is advantageous to facilitate structural cognitive modifiability through qualified interactions and scaling up students’ low-level self-efficacy beliefs. First-year students at Hawassa University in particular and students at other Ethiopian universities who have trouble writing coherent essays and paragraphs benefit from utilizing the MLE-based writing skill instruction. What
would be needed to apply MLE is, maximizing the mediator’s roles by providing them with an orientation about the MLE theoretical and practical guidelines. This ensures effective implementation of the method/approach which entails the development of students’ self-efficacy beliefs. The results of the investigation focused only on university first-year students. Similar research can be done at other levels because this kind of classroom investigation is vital to look into learners’ beliefs system. Hence, conducting MLE based study might be possible to see how writing skill self-efficacious belief affects their composition skill across different grade levels and how it can be developed for further success.

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Declaration

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References


