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Use of Medium platform in teaching EFL writing, academic self-efficacy, and undergraduate students' perceptions

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Abstract

In an era where digital platforms have become ubiquitous, it is necessary to integrate digital teaching tools in education to help students learn. There have been many digital teaching tools reported in research on the teaching of English; however, the use of Medium platform to teach students write an argumentative essay in English is scarcely reported. This study investigates the application of Medium platform in the teaching of argumentative writing to undergraduate EFL students, the contribution of academic self-efficacy, and the students' perception of Medium platform application. In the treatment, the students were asked to use Medium platform to learn how to write argumentative essays. Following the completion of the teaching, the students' writing achievement was tested and compared across academic self-efficacy. Finally, the students were asked to respond to a 5-point Likert-scale questionnaire. The students' scores of the posttest were compared to their scores before the treatment. Analysis of t-test indicated that there was a significant difference between the students' argumentative writing achievement before and after the treatment ($p \leq 0.05$). Comparisons of students' scores across academic self-efficacy levels showed that there was no significant difference between the argumentative writing achievement of the students with high and low levels of academic self-efficacy. Analysis of the students' perceptions revealed that the students had positive responses to the use of Medium platform in the teaching of argumentative writing. The findings imply that Medium platform is a versatile tool that can accommodate diverse learners in terms of academic self-efficacy in writing instruction.

Keywords: Academic self-efficacy, Argumentative essays, Argumentative writing achievement, Medium platform, Teaching writing



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Introduction

The integration of technology in writing instruction has garnered attention in recent years. Technology is often seen as beneficial for the purpose of diversifying instructions and offering learning opportunities that are relevant to the demands of the twenty-first century (Regan et al., 2019), promoting meaningful learning (Lim, 2023; Yunus et al., 2013), increasing motivation (Ghahri et al., 2015), enhancing active participation (Fattah, 2015), and developing writing skills (Alsamadani, 2017; Chu et al., 2017; Hadi et al., 2021; Taufikurohman, 2018). In addition, the integration of technology can have a profound impact on learner autonomy (Ahmadi, 2018) which refers to the idea that students should be able to take responsibility for their own academic development and become responsible for their own learning. Nonetheless, it is imperative to underscore that the role of technology is not intended to replace the educator (Sadeghi & Gholizadeh, 2014); instead, it serves to transform the educator's image into that of a facilitator. This helps to create a learning environment that is interactive and promotes collaboration. It combines the strengths of both human knowledge and technological resources (Güvenç, 2018). In other words, teaching writing by implementing technology can benefit both the educator and students.

Technology offers a powerful resource for augmenting students' writing proficiency. The art of writing encompasses a number of intricate processes (Harmer, 2004). Notably, Harmer (2004) identifies three fundamental stages in the writing process: planning, editing, and drafting. These phases culminate in the creation of the final draft. This is where technology has the potential to make a significant impact on students. Computers, in particular, can prove to be invaluable, provided that they have the capability to facilitate changes, edits, drafts, and the seamless preservation of the last version (Li & Cumming, 2001; Pennington, 2003). Technology, as an educational tool, is capable of enhancing students' writing proficiency, nurturing their capacity for precision, critical thought, self-driven improvement (Sandolo, 2010), and cognitive engagement (Purnawarman et al., 2016). As a result, students can improve their writing skills more effectively than through conventional approaches.

Since technology has emerged as a potent force in the rapidly evolving field of education, it is inevitable to transform the ways in which we instruct and are instructed. Technology has evolved from being a supplementary tool to a catalyst for transformative learning experiences. As a result, Dr. Ruben Puentedura developed the SAMR (Substitution, Augmentation, Modification, and Redefinition) model, which provides a valuable framework for analyzing the degree of technology integration in the teaching-learning process (Hamilton et al., 2016). Furthermore, despite the integration of technology, students' academic self-efficacy is believed to influence their academic achievement (Hanham et al., 2021). The utilization of various types of technology, such as Google Docs

(Pham, 2019), Tumblr (Rahmanita & Cahyono, 2018), chatbots (Guo et al., 2022), as well as automatic writing evaluation (AWE) (Ajabshir & Ebadi, 2023) has been studied to examine their impact on English as a Foreign Language (EFL) students' ability in writing argumentative essays. The studies have shown that using technology can improve students' writing quality, quantity, fluency, and syntactic complexity. The successful application of technology can also facilitate peer interactions (Williams & Beam, 2019). However, the impact of technology on students' writing may differ according to the sort of technology used and the context in which it is used (Wen & Walters, 2022).

While a large number of studies have examined the integration of technology in the teaching of writing, this study investigates one of the renowned social publishing platforms, i.e., Medium platform. The use of digital platforms is posited to develop knowledge acquisition related to the argued topic (Benetos, 2023). To the best of our knowledge, the potential of the Medium platform for integration into the teaching-learning process of writing argumentative essays remains unexplored. The selection of topics or arguments in argumentative writing may fall short of capturing the interest of students, hindering the development of their cognitive abilities. This shortfall can arise from a perceived lack of relevance, insufficient interest, or a dearth of prior knowledge needed to critically evaluate the evidence presented (Tandiana et al., 2017). Therefore, in the present study, we aim to explore the impact of integrating the Medium platform into students' argumentative writing as well as the students' academic self-efficacy to their argumentative writing achievement. The research questions are stated as follows:

- 1) Is there any difference in the undergraduate students' argumentative writing achievement before and after being taught by using the Medium platform?
- 2) Is there any difference in the argumentative writing achievement of the undergraduate students of high and low academic self-efficacy after being taught by using the Medium platform?
- 3) What are the students' perceptions of the use of Medium platform in the teaching of argumentative writing?

Literature review

Argumentative essay writing

Argumentative essay is a form of discourse in which the writer presents a claim or thesis about a particular issue and supports it with evidence and reasoning. It involves a clear expression of a stance on a topic and aims to persuade the audience to accept that viewpoint. This type of essay is characterized by the use of logical reasoning, evidence-based support, and a structured organization, underpinning its importance in developing critical thinking, interpersonal aptitude, and the capacity to persuade effectively. Hence, the composition of

an argumentative essay enhances students' ability to develop arguments and instills self-assurance in their understanding, equipping them for challenges not only within the educational field, but also in real-world circumstances (Haro et al., 2022; Heitmann et al., 2014).

In addition, argumentative essay is considered to be the most advanced type of writing in higher education, thus presenting a formidable challenge for learners (Latifi et al., 2021). Previous studies indicated that students face challenges in expressing their arguments effectively, as demonstrated by issues related to presenting arguments (Banihashem et al., 2023a; Banihashem et al., 2023b; Kerman et al., 2023; Ranjbaran et al., 2023) and difficulties in language usage (Rahmatunisa, 2014). Moreover, students may not be fully attuned to the potential contradictions within the information provided, further impeding their comprehension of the arguments. Engaging in argumentative writing provides a unique opportunity for individuals to explore diverse perspectives and address, analyze, as well as reconcile contradictions that may arise. This process, as emphasized by scholars (e.g., Andriessen, 2005; Kuhn, 2001; Leitão, 2000), contributes to the expansion and deepening of knowledge while facilitating changes in conceptual understanding. In essence, argumentative writing necessitates the acquisition of a broad spectrum of skills. This includes the mastery of critical thinking and writing strategies essential for producing argumentative texts at an academic level, fostering learning through the intricate processes involved in constructing well-reasoned and persuasive written arguments.

Academic self-efficacy

Academic self-efficacy plays a crucial role in a student's perception of his or her potential for academic success or failure (Bandura, 1989). In essence, it signifies students' confidence in their own abilities and their conviction that they can excel in academic endeavors (Schunk & Pajares, 2002). Consistently, research demonstrates that academic self-efficacy is a strong predictor of various academic success (Gore, 2006), encompassing foreign language acquisition as well (Raoofi et al., 2012). This suggests that pupils with greater confidence in their academic abilities tend to perform better academically. The significance of academic self-efficacy lies in its profound impact on both accomplishment and the likelihood of academic continuation. The influence of academic self-efficacy beliefs extends to the attributions learners assign to their triumphs and setbacks in a given academic undertaking (Bandura, 1986). Notably, within the realm of academic pursuits, academic self-efficacy emerges as the foremost predictor of performance subsequent to aptitude. This implies that, beyond inherent cognitive abilities, the confidence individuals harbor in their capacity to master academic challenges significantly shapes their academic outcomes.

The overarching framework of academic self-efficacy theory posits that academic achievement is not solely contingent on intellectual aptitude, but is profoundly affected by the sway of self-efficacy (Raofi et al., 2012). This influence operates through various channels, predominantly impacting learners' perseverance, exertion, and selection of academic activities (Graham, 2022). Essentially, the degree to which an individual believes in their ability to navigate and conquer academic challenges directly correlates with their tenacity, diligence, and strategic choices in the pursuit of educational goals.

The integration of Medium platform

Medium, a versatile social publishing platform, embraces individuals from many backgrounds. This platform serves as a venue for individuals to share their narratives, thoughts, and varied viewpoints. Evan Williams, also the co-founder of Blogger and Twitter, created it as a platform for publishing larger written works and documents, surpassing Twitter's 140-character restriction (Devaney, 2021). Medium is an open-source publishing platform that enables writers to gain visibility on the internet, attract their desired readership, and potentially earn income through royalties on their written work (Wolny, 2023). Medium is primarily a web-based platform for content publishing. This platform does have mobile apps (iOS and Android) that provide a more user-friendly interface for reading and publishing content on the Medium platform. While it does have social elements, such as the ability to follow other users, leave comments, and engage in discussions, its primary focus is on long-form content creation and publishing. Medium allows individuals and publications to share in-depth articles and stories with a wide audience. Users can "clap" for articles they like, highlight text, and share content within the Medium ecosystem. While Medium incorporates social features, its main purpose is to provide a platform for quality writing and reading, fostering a community of writers, readers, and thinkers.

In recent years, Medium has emerged as the preferred platform for a diverse array of celebrities, politicians, and influential thought leaders to share their narratives and deliver official declarations. Its accessibility and wide-reaching audience have transformed Medium into an influential space where prominent figures harness the power of the written words to connect with the global public, shaping dialogues, unveiling personal insights, and delivering impactful messages to an engaged and discerning readership. Within the framework of the SAMR Model, Medium platform can shine as an example of redefining the learning process. Medium, which is frequently lauded as a social publishing platform, goes beyond typical writing tools to transform the educational landscape (Wolny, 2023). It has the ability to take writing and publishing to new heights, pushing the limitations of conventional learning. Within this context, we intend to redefine the writing and publishing process by leveraging the immense potential of Medium platform, opening the door to

creative and immersive learning experiences that will fundamentally change our perception of writing in the digital age. This might include publishing and sharing writing with a global audience, engaging in interactive multimedia storytelling, and participating in online writing communities that expand the boundaries of traditional writing.

Research methods

This study is an experiment conducted by using one group pretest-posttest design. The independent variable was the teaching of writing using Medium platform, while the dependent variable was the students' argumentative writing achievement. Following the application of the Medium platform in the teaching of argumentative writing, the students' argumentative writing achievements were compared across academic self-efficacy levels. In addition, the students were asked to provide feedback on the application of the Medium platform in the teaching of argumentative essays.

The experiment was carried out in an English Department of a reputable state university in Malang City, situated in the East Java province of Indonesia. The students in this department obtained instruction in English writing through a series of three sequential courses: Paragraph Writing, Essay Writing, and Argumentative Writing. Thus, before the students took the Argumentative Writing course, they have learned how to write descriptive, narrative, expository paragraphs in the *Paragraph Writing* course and to write various expository paragraphs (i.e., exemplification, comparison-contrast, classification, process analysis, and cause-effect analysis) in the *Essay Writing* course (English Department Catalogue, 2022), but they never learned how to write an argumentative essay. The study involved 26 (18 female and 8 male) students who were actively enrolled in the Argumentative Writing course. In this course, the students received instruction on the composition of two distinct types of essays: opinion essays and argumentative essays. Both of these essays emphasize the importance of determining a stand and how to give reasons to the stand. However, these two essays differ in terms of the viewpoints. In the opinion essay, the writer develops reasons based from one side, that is from himself or herself, either in agreement or in disagreement on the issue raised. In contrast, in the argumentative essays, the writer not only give the reasons to support his or her own stand, but he or she has to refute the opinions on the issue from the opponents (Smalley et al., 2001). When the study was conducted, the students had completed the instruction on how to write an opinion essay. Their understanding of an opinion essay might support or distract their understanding of how to write an argumentative essay.

The treatment given to the students was conducted in 9 sessions, including the pretest and posttest administration. Each session lasted 100 minutes, thus the total time frame for the treatment was 900 minutes long. Apart from the teaching and learning activities to develop the students' argumentative writing achievement, the students were introduced to

the use of Medium platform. The initial step in utilizing Medium necessitates students to create a Medium account. Once this account is in place, the students are guided through a comprehensive orientation to acquaint them with the various features and functionalities of the Medium platform. Throughout the learning process, the students were mandated to creatively publish their written work on the Medium platform. In addition, in the seven sessions between the pretest and the posttest, the students were introduced to the nature and the structure of argumentative essays, followed by discussion and practices in writing the introductory paragraph, body paragraphs, as well as the concluding paragraph. The students were also introduced to the importance of refutation and concession which are the heuristic components of argumentative essays. The teaching and learning activities of the argumentative essays are shown in Table 1.

Data of the students' argumentative writing achievement were elicited by using the pretest and posttest. During the pretest phase, the students were required to write one argumentative essay from a selection of three options which are based on some issues, two of which are current in the Indonesian contexts, namely: (1) Is it still necessary to go to the university nowadays for face-to-face teaching and learning? (2) Is it necessary to

Table 1 The teaching and learning activities

Session	Teaching and learning activities
1	Pretest
2	Introduction to the Argumentative Essays Introducing the Medium platform to the students: Creating a Medium platform account
3	Explaining the organization of argumentative essays Using Medium as a resource to explore argumentative essays and familiarize oneself with the structure of an argumentative essay
4	Using Medium during the pre-writing stage to analyze and compare thesis statements from published essays, identifying patterns of strong thesis statements Writing a thesis statement for an argumentative essay
5	Explaining the key elements of an introductory paragraph Using Medium to explore examples of introductory paragraphs Developing an introductory paragraph and writing the paragraph on Medium Using Medium for peer feedback on the introductory paragraph and revising it as needed
6	Explaining how to compose body paragraphs in an argumentative essay Drafting main body paragraphs of an argumentative essay on Medium
7	Explaining the use of counterarguments and rebuttal as important part of body paragraph development Finishing body paragraphs on Medium, receiving peer feedback, and revising as needed
8	Explaining strategies for crafting an effective concluding paragraph Writing a concluding paragraph and finalizing the argumentative essay on Medium Using Medium for peer feedback on the complete essay and making revisions as needed
9	Posttest

continue developing high-speed train from Bandung (a city in West Java) to Surabaya (a city in East Java)? and (3) Does Indonesia need to move its capital city from Jakarta to Nusantara City in Borneo? In the posttest, the students were instructed to compose an argumentative essay on the same topic they had previously addressed in the pretest. The purpose was to see their understanding of the characteristics of argumentative essay and to examine the way they develop their ideas on the issue from two sides: the pros and the cons.

The assessment of students' essays involved the utilization of the "ESL Composition Profile" rubric (Jacobs et al., 1981), which was employed by two independent raters. The essays were scored across five distinct components, each assigned varying weightings: Content (30%), organization (20%), vocabulary (20%), language use (25%), and mechanics (5%). Prior to the scoring of the essays, there was a session for practicing the scoring of five essays that were chosen at random. The results of this session were compared in terms of the scores of the components as well as the overall scores of Rater 1 and Rater 2. Then, the two raters discussed the scores and agreed to modify the scores based on some considerations, namely the availability of the thesis statement, the number of paragraphs, the number of sentences in a particular paragraph.

After a point of agreement was reached, the raters scored their two essays in two different times: before and after the treatment was given. Two raters scored the students essays and the outcomes of calculating the two sets of pretest scores were measured for interrater reliability (Stolarova et al., 2014). It was found that the reliability coefficient was .95 which is a high level of reliability or very strong correlation coefficient (Hayes, 2023). A detailed list of students' average scores in both the pretest and posttest can be found in the Appendix.

In addition to the computation of the students' scores of academic essays, the students' scores were compared across their academic self-efficacy levels. For this purpose, the students were asked to respond to the *Academic Self-Efficacy Scale* developed by Gafoor and Ashraf (2006) based on the work of Bandura (1977). The scale which has .85 test-retest ($N = 30$) and .90 split-half ($N = 370$) correlation coefficients has 40 statements covering 20 positive and 20 negative statements. The statements were developed on the basis of a number of dimensions: "learning process, reading, comprehension, memory, curricular activities, time management, teacher-student relationship, peer relationship, utilization of resources, goal orientation, adjustment and examination" (Gafoor & Ashraf, 2006). The students were required to choose one of five options in each statement, namely "exactly true," "nearly true," "neutral," "nearly false," and "exactly false." Each of the positive statements was scored 5, 4, 3, 2, and 1, respectively, while the negative statements were scored in the reverse order. The maximum possible score was 200 while the minimum possible score was 40. In the present study, the students were divided into two groups: 13 students with high academic self-efficacy and 13 with low academic self-efficacy levels.

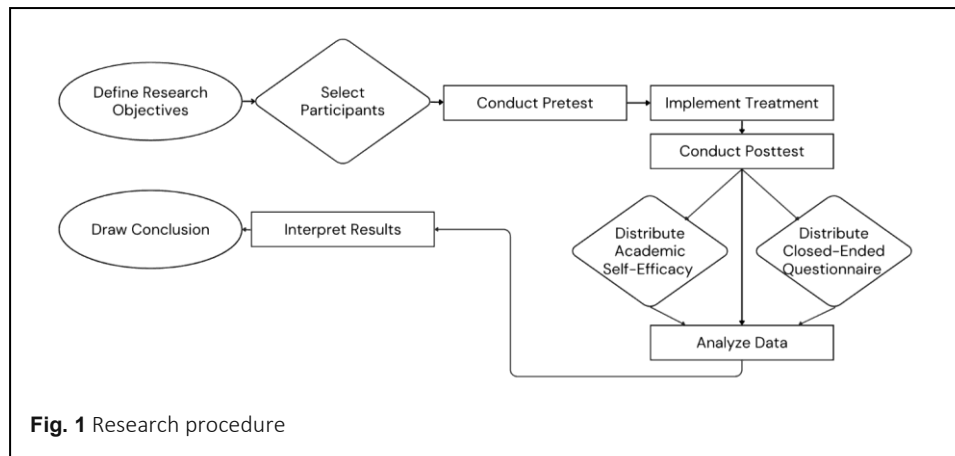
The perceptions of the students on the use of Medium platform in the teaching of writing were elicited by using a Likert-scale questionnaire. This questionnaire consists of 20 statements which we developed by considering three aspects: the main attractive features of Medium platform (Statements 1-5), the students' interest in using the Medium platform (Statements 6-10), and their perceived effectiveness in using the Medium platform (Statements 11-20). The statements in the questionnaire were developed by considering suitability of the indicators for each of the three aspects (attractive features of Medium platform, students' interest, and perceived effectiveness) with the features of the Medium platform (for content validity) and the statements were checked for validity by an expert in the use of digital media in English language teaching (for credibility and reliability) (Pino et al., 2023). Each of the statements were given with five options varying from *Strongly Disagree*, *Disagree*, *Neutral*, *Agree* to *Strongly Agree* which were given values from 1 to 5, respectively. The maximum possible score is 100 and the minimum possible score is 20. The students' final scores were interpreted by using the following range and value as in Table 2 (Lindner & Lindner, 2024).

The neutral option was intentionally included to know students who were in the moderate stand dealing with the issues raised in the statements. Before completing the questionnaire, the students were informed that the questionnaire was aimed to know their perceptions of the use of Medium to improve their skill in English and in writing an argumentative essay, in particular. They were also told that their participation was voluntary, and their responses would not affect their grade in the course. We found that all of the students completed the questionnaire.

The analysis of data aimed to address the three research questions. Initially, a comparison was conducted between the pretest and posttest scores of the students to ascertain the presence of any significant differences in means before and after the treatment. Subsequently, in cases where a significant difference was identified in the students' scores before and after the implementation of the Medium platform for teaching argumentative essays, a further examination was undertaken. Specifically, the scores of students who had high academic self-efficacy were juxtaposed to those who had low academic self-efficacy. This thorough approach aimed to offer a detailed comprehension of the impact of using the Medium platform in teaching and its potential differential effects on students depending

Table 2 Range and value for interpreting students' final scores

Category	Value
Strongly Disagree	1.00-1.50
Disagree	1.51-2.50
Neutral	2.51-3.50
Agree	3.51-4.50
Strongly Agree	4.51-5.00



on their levels of academic self-efficacy. Finally, the students’ responses to the questionnaire probing their perceptions of the use of the Medium platform in the teaching of argumentative essays were analyzed to demonstrate whether or not the students responded positively to the questionnaire in general, and to the three aspects in particular: attractive features of the Medium platform, interest in the use of the platform, and the perceived effectiveness of the Medium platform. SPSS statistical computation was used in the analysis. In order to clarify the steps involved in the present study, the flowchart in Figure 1 delineates the research procedure.

Findings

The undergraduate students’ argumentative writing achievement

The results of analysis of the EFL undergraduate students’ scores in the pretest and the posttest are shown in Table 3.

Table 3 shows that the mean of the pretest scores was 44 and the mean of the posttest scores was 78.96 resulting in the mean difference of 34.96. The table also indicated that EFL students’ scores varied greatly in the pretest and their scores were more homogenous in the posttest as reflected in the standard deviation of 9.81 and 6.84, respectively. Then, the pretest and posttest scores were compared to show whether they were significantly as shown in Table 4.

Table 3 Descriptive statistics of the pretest and posttest scores

	N	Mean	Std. Deviation
Pretest score	26	44.00	9.81
Posttest score	26	78.96	6.84

Table 4 Comparison of pretest and posttest scores by using t-test

	Paired differences		Sig. (2-tailed)
	Mean	Std. Deviation	
Pretest – posttest	34.96	9.62	.00

As shown in Table 4, the mean disparity between the pretest and posttest scores was 34.96, and this difference was established as statistically significant, denoted by the significance level of 0.00 ($p \leq 0.05$). This statistical outcome implies a significant impact attributable to the use of the Medium platform on students' argumentative writing achievement. In other words, the use of the Medium platform in writing instruction effectively enhanced the students' proficiency in argumentative writing.

Argumentative writing achievement of undergraduate students of high and low academic self-efficacy levels

An attempt was made to examine the influence of academic self-efficacy levels on the argumentative writing achievement of undergraduate students following instruction with the Medium platform. The analysis of EFL students' academic self-efficacy resulted in the categorization of the 26 students into two groups: 13 students were in the high academic self-efficacy level and 13 other students were in the low academic self-efficacy level, as detailed in Table 5.

As shown in Table 5, the mean of the posttest scores of the EFL students with high academic self-efficacy was 80.38 and the mean of those with low academic self-efficacy was 77.54 indicating that the mean difference was 2.84. The standard deviations of the posttest scores of the high academic self-efficacy group (6.65) and the low academic self-efficacy group (6.99) were apparently homogenous. The comparison results between the two means are displayed in Table 6.

Table 5 Descriptive statistics of the students with high and low academic self-efficacy

	N	Mean	Std. Deviation
High	13	80.38	6.65
Low	13	77.54	6.99

Table 6 Comparison of scores across academic self-efficacy levels by using t-test

	Paired differences		Sig. (2-tailed)
	Mean	Std. Deviation	
High – low	2.84	10.88	.36

As indicated in Table 6, there is a difference of 2.84 in the mean of the scores of students with high and low academic self-efficacy. This difference was not found to be statistically significant, as evidenced by the significance level of 0.36 which is more than 0.05. In other words, the use of the Medium platform led to the similar impact on the students' achievement in argumentative writing regardless of the students' academic self-efficacy levels. This implies that when applied in the teaching of argumentative writing, students of various levels of academic self-efficacy were able to use the Medium platform in argumentative writing activities.

Undergraduate students' responses towards the use of Medium platform

The perspectives of the undergraduate students regarding their experience with the Medium platform are categorized into three distinct dimensions: the attractive features of Medium platform, students' interest on the platform, and its effectiveness in the context of writing argumentative essays. Table 7 depicts the general overview of students' perceptions for each dimension.

The data presented in Table 7 demonstrates that students possess a notably positive perception of the Medium platform. The dimension exhibiting the highest mean score pertains to the attractive features of the platform ($M = 4.47$), indicating that these features considerably augment the user experience. Moreover, students indicated an agreement on their interest in the platform ($M = 3.77$) and its effectiveness in aiding the writing of argumentative essays ($M = 3.75$), underscoring its appeal and practicality in academic writing environments. Furthermore, the responses of the students to five statements pertaining to the attractive features of the Medium platform are presented in Table 8. This table encapsulates the perspectives provided by the students, highlighting the features of the Medium platform that they find attractive.

Table 7 General overview of students' perception towards the use of Medium platform

Dimensions	Mean	Interpretation
Attractive features of Medium platform	4.47	Strongly Agree
Interest in the use of Medium platform	3.77	Agree
Effectiveness of Medium platform to write an argumentative essay	3.75	Agree

Table 8 EFL students' perception on the attractive features of Medium platform

No	Items	Mean	Interpretation
1	Medium can be used as a platform to write an argumentative essay.	4.62	Strongly Agree
2	The draft of my essay in Medium can be edited anytime.	4.62	Strongly Agree
3	The draft of my essay in Medium can be formatted in an interesting way.	4.04	Agree
4	The writing product in Medium can be shared to public.	4.69	Strongly Agree
5	I can see "Clap" appreciation from everyone to my essay in Medium.	4.38	Agree

As Table 8 indicates, students express a uniformly positive sentiment towards all the attractive features of the Medium platform. The cumulative scores obtained from the five items underscore that students perceive Medium as possessing favorable features that enhance their essay writing experience. Notably, students acknowledge Medium as a fitting platform for crafting argumentative essays due to its capabilities for drafting, editing at any time, and allowing for creative formatting of their writing style. Furthermore, students appreciate the feature of the platform of making their essays publicly accessible, enabling readers from around the world to engage with their writing. The mechanism of receiving “Claps” as a form of appreciation serves as a noteworthy positive feature. This feedback loop not only allows students to gauge the reception of their work but also fosters awareness that their writing has been read and appreciated by a global audience. The students’ interest on Medium platform is presented in Table 9.

The data presented in Table 9 provides insights into EFL students’ interest in the Medium platform, particularly in the context of learning English and writing argumentative essays. The respondents generally express positive attitudes towards the platform, with notable agreement on several key aspects. There is a general agreement among students that Medium serves as a source of motivation for language learning. Similarly, students believe that Medium platform has positive influence on students’ interest in essay composition. Students generally agree that they enjoy the drafting process of argumentative essays using the Medium platform. Moreover, there is a strong agreement that the students recognize the value of incorporating visual elements to enhance the support and impact of their written work. Surprisingly, students perceive Medium as a platform that offers a challenging yet rewarding environment for essay writing, potentially contributing to their overall interest and motivation. The students’ perception on the effectiveness of Medium platform is displayed in Table 10.

Table 10 presents an overview of EFL students’ perceptions regarding the effectiveness of the Medium platform for the composition of argumentative essays. The findings reflect a positive attitude among the students, as indicated by the favorable means across multiple dimensions. Firstly, EFL students agree that the Medium platform contributes positively to their understanding and identification of argumentative essay structures. Furthermore,

Table 9 The undergraduate students’ interest on Medium platform

No	Items	Mean	Interpretation
6	The use of Medium makes me interested in learning English.	3.92	Agree
7	The use of Medium makes me interested in writing an argumentative essay.	3.77	Agree
8	I like drafting my argumentative essay in Medium.	3.50	Neutral
9	I like to put a picture in Medium to support my essay.	4.04	Agree
10	I like using Medium to write essay because it is challenging.	3.62	Agree

Table 10 Undergraduate students' perception on the effectiveness of Medium platform to write an argumentative essay

No	Items	Mean	Interpretation
11	I can recognize an argumentative essay after using Medium in writing.	3.81	Agree
12	It is helpful to write an argumentative essay using Medium.	3.92	Agree
13	It is practical to write an argumentative essay using Medium.	3.77	Agree
14	It is easy to write an argumentative essay using Medium.	3.88	Agree
15	Writing an argumentative essay in Medium improves the look (colorfulness) of my essay.	3.85	Agree
16	Writing an argumentative essay in Medium improves the content quality of my essay.	3.73	Agree
17	Writing an argumentative essay in Medium improves the design (format) of my essay.	3.69	Agree
18	I better understand the structure of an argumentative essay by writing in Medium.	3.58	Agree
19	I better understand the importance of concluding signals by writing in Medium.	3.65	Agree
20	I better understand the importance of counter argument by writing in Medium.	3.58	Agree

among others, Item 12 received the highest score, underscoring the perceived utility of Medium platform as a beneficial tool in the overall process of writing argumentative essays. Students also acknowledge the practicality of using Medium platform for argumentative essay writing. The ease of writing that type of essay on Medium platform is another positive aspect highlighted in the data, underpinning the user-friendly nature of the platform and its positive impact on the visual appeal or written content. Additionally, students express agreement that writing argumentative essays on Medium platform positively influences the content quality, design/format, and overall structure of their essays. Moreover, participants report enhanced understanding of key elements of argumentative essay writing, including the structure, concluding signals, and the importance of counterarguments. The gathered scores suggest that engaging with Medium platform contributes positively to students' comprehension of these critical components.

Discussion

The present study investigated the impact of using Medium platform on EFL students' argumentative writing achievement. Medium provides a real-world context where students can publish their work and reach a global audience. This encourages them to take their writing seriously, focusing on clarity, persuasiveness, and structure. In addition, its user-friendly design and built-in writing tools provide a convenient and distraction-free environment for drafting and editing essays. These features make Medium a dynamic and practical tool for teaching argumentative writing. The findings show that the utilization of

the Medium platform in teaching argumentative writing indicated discernible enhancements in students' writing processes, achievement, and proficiency in argumentative composition. The statistical analysis revealed that the use of Medium platform was significantly effective to impact students' argumentative writing achievement. The improvement observed in the mean of posttest scores indicates the lasting effect of the treatment and underscores the role of Medium platform. According to Güvenç (2018), the synergy between a teacher and technology possesses the capacity to empower students throughout the learning journey, thereby fostering an interactive and meaningful learning experience. Here, the integration of the Medium platform encourages publication mindset of the students. Beyond the classroom, students can receive feedback from a broader audience. Publishing on Medium also instills a sense of professionalism and motivates students to produce high-quality work. This platform does serve as a catalyst for heightened student motivation, resulting in increased engagement and active participation in argumentative writing tasks (Fattah, 2015; Ghahri et al., 2015; Luthfiyyah et al., 2021). This technological approach not only facilitated social interaction, but also promoted collaborative learning among peers (Williams & Beam, 2019). Studies have shown that collaborative learning is positively correlated with academic achievement, as well as the cultivation of cognitive abilities in critical thinking and problem-solving (Cheng et al., 2021; Loes, 2022).

However, when comparing the means of students with high and low self-efficacy, no statistically significant difference was found. This means that the impact of the Medium platform on students' achievement in argumentative writing was similar, regardless of their levels of academic self-efficacy. The result is consistent with Lambe et al. (2023) research findings that high or low students' self-efficacy did not influence their academic achievement significantly. In the context of teaching argumentative writing, it indicates that students, irrespective of their varying levels of academic self-efficacy, were equally able to utilize the Medium platform in their argumentative writing activities. This insight suggests that the Medium platform offers user-friendly features accessible to writers from diverse backgrounds, ranging from novices to experts (Wolny, 2023).

The EFL students' responses also underscore the potential of Medium platform for stimulating engagement in the writing process. The data reflect a positive trend in students' perceptions of Medium as it offers a rich collection of professionally written argumentative essays on diverse topics, which students can study as models to understand effective writing techniques. In other words, it not only fosters interest in language learning and essay writing, but also provides engaging and challenging features that contribute to a meaningful learning experience (Lim, 2023; Yunus et al., 2013). They strongly concur that the Medium platform provides highly attractive features to enhance their argumentative essay writing. This suggests a keen inclination towards utilizing multimedia features to

enhance their written expression. In addition, EFL students are in favor of incorporating visual elements into their essays on the Medium platform. Students adeptly crafted, produced, and shared a diverse range of multimodal and digital texts on Medium platform, effectively conveying their comprehension of argumentative structures and contemporary issues (Rashtchi & Porkar, 2020). In other words, technology can facilitate multimodal learning. Medium membership, in particular, can access additional features within the platform. An enhanced reading and writing experience include listening to every story published in the Medium platform. The findings from questionnaire collectively indicate that EFL students perceive the Medium platform as an effective and beneficial tool for writing argumentative essays. The positive responses across various dimensions highlight the impact of Medium platform on students' recognition of essay structures, writing proficiency, and overall understanding of key elements in argumentative writing. It is proven that technology has positive impact to students' writing achievement (Alsamadani, 2017; Chu et al., 2017; Hadi et al., 2021; Taufikurohman, 2018).

Numerous studies have substantiated the favorable impacts of technology on language teaching and learning (Hockly & Dudeney, 2018; Kessler, 2018). Through the strategic use of technology, a shift from teacher-centered to student-centered approaches can be achieved, facilitating the advancement of learning activities to higher levels of technology integration, as outlined in the SAMR model framework (Bui, 2022; Cheung, 2023).

Conclusion

This research has delved into the integration of the Medium platform in the teaching of argumentative writing, shedding light on its impact on students of varying academic self-efficacy levels. The findings revealed a uniform positive impact on argumentative writing achievement, irrespective of the students' self-efficacy. This suggests that the Medium platform is a versatile tool that can effectively accommodate diverse learners in the context of argumentative writing instruction. The study underscores the potential of technology, specifically the Medium platform, as a facilitator for improving writing skills and fostering engagement in argumentative writing activities. Furthermore, the research explored the shift from teacher-centeredness to student-centeredness facilitated by technology, aligning with models like SAMR. It became evident that the strategic use of digital platforms allows for a transformative learning environment, promoting higher levels of technology integration and enhancing the overall learning experience.

In essence, this study not only underpins the positive implications of integrating the Medium platform in argumentative writing instruction, but also highlights the broader potential of technology in shaping contemporary pedagogical approaches. As we move forward, it is imperative to remain attentive to emerging trends and advancements in educational technology, ensuring a dynamic and adaptive integration that fosters

meaningful learning experiences for students across various proficiency levels. Although the findings are promising, it is necessary to recognize certain constraints, such as the limited number of participants and the particular circumstances under which the research was carried out. Another limitation is the fact that this research only used one group with the comparison of the pretest and posttest scores. The absence of a control might influence the justification of the effectiveness of the Medium platform as there was no other group that could have been used as a comparison. Therefore, future research could explore the generalizability of these findings across different EFL populations and educational settings by using a quasi-experimental design. It is recommended that future research consider interview guide as another means for data collection. Likewise, longitudinal or research studies which use qualitative data from interviews could provide insights into the sustained impact of Medium on EFL students' writing proficiency and language learning motivation and explore the students' experiences and challenges in using the Medium platform as a means to learn to write an argumentative essay.

Appendix

Pretest and posttest scores of the argumentative essay

No	Name code	Pretest score	Posttest score
1	Student 1	40	67
2	Student 2	54	89
3	Student 3	46	86
4	Student 4	53	78
5	Student 5	54	73
6	Student 6	54	71
7	Student 7	37	72
8	Student 8	47	88
9	Student 9	44	88
10	Student 10	29	72
11	Student 11	29	79
12	Student 12	41	78
13	Student 13	48	74
14	Student 14	56	76
15	Student 15	50	73
16	Student 16	54	84
17	Student 17	52	88
18	Student 18	41	88
19	Student 19	31	72
20	Student 20	54	85
21	Student 21	53	83
22	Student 22	30	81
23	Student 23	53	87
24	Student 24	31	74
25	Student 25	34	72
26	Student 26	29	75
	Total	1144	2053
	Average score (mean)	44	79

Abbreviations

EFL: English as a Foreign Language; SAMR: Substitution, Augmentation, Modification, and Redefinition; AWE: Automated Writing Evaluation.

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Authors' contributions

Both authors have collected data from the classroom, written the draft, and finalized the manuscript, sharing approximately the same responsibility.

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