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USING GEMINI AI TO IMPROVE MATRICULATION STUDENTS' WRITING PERFORMANCE

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ABSTRACT

This study explores the use and impact of using Gemini AI as a supporting tool to enhance the writing performance among matriculation students. The study utilized qualitative methods to assess the impact of the use of Gemini AI on students' argumentative essays and to investigate their interest towards the use of Gemini AI in writing. Interviews and writing samples were collected from six matriculation students identified as having low writing proficiency. Over a period of eight weeks, students were engaged with a structured writing lesson using Gemini AI as a supporting tool. Collected documents included essays, presentation sheets, and survey responses via Google Forms. Students' writing responses were then examined thoroughly. The research was carried out through the following developmental steps: (1) students wrote a pre-test essay (Test A); (2) in groups of six, they produced an argumentative paragraph using Gemini AI, followed by peer proofreading; (3) they then wrote a full five-paragraph essay using Gemini AI; and (4) finally, they completed an individual post-test essay (Test B) without using Gemini AI. The findings revealed that students showed great improvements in their argumentative essays after following an eight-week intervention involving structured writing lessons with Gemini AI. The tool was proven to influence the writing performance of matriculation students with low writing proficiency positively. Additionally, students expressed interest and positive perceptions towards using the AI tool for writing tasks.

Keywords: *Writing, Writing performance, Gemini AI*

INTRODUCTION

Writing skills is the ability to communicate ideas effectively in written form. It is an important component taught in the Matriculation English Language Studies and Malaysian University English Test (MUET) as it helps the students in Negeri Sembilan Matriculation College (KMNS) to express and communicate their thoughts in different types of writing. Thus, this research investigates the use and impact of Gemini AI as a learning tool in the digital learning platform (DELIMa) to assist students to write good essays. This is parallel to the advancement of technology of digital platforms (DELIMa) which was introduced by the Ministry of Education (MOE) to allow matriculation lecturers and students to experience a new digital learning approach in Malaysian education. Therefore, it is easy for the

matriculation lecturers and students to access the impact of Gemini AI in teaching writing in a digital and virtual classroom (Jen & Salam, 2025).

This action research paper aimed at enhancing students' writing performance using Gemini AI in writing classes and providing support for a limited time to help students learn and get better at what they do. In this research, Gemini AI serves as a temporary support for students as active learners who construct their own knowledge (McLeod, 2024) and the researchers are able to observe the learning process and the skill improvements. During the process, scaffolding activity is done by providing a thesis statement, sentence starters and paragraph frames to guide students' thinking and structure their responses (Khalifa & Albadawy, 2024) using Gemini AI to support the learning process. Therefore, the overall results show a significant increase in students' writing performance.

Matriculation students struggle with essay writing due to weak content development, poor grammar skills, limited vocabulary, and difficulty organizing ideas. These issues challenge the assumptions about their writing readiness and vocabulary growth, showing that without targeted support, many fail to meet academic standards (Limone, 1978).

This action research was carried out by two English lecturers with complementary expertise: Mdm. Efa, who has nine years of experience teaching the Malaysian University English Test (MUET) and specializes in English Language Assessment and academic writing, and Mdm. Revathy, who recently transitioned from teaching Upper Secondary to the SES Matriculation Programme, bringing fresh insights into the challenges students face as they enter matriculation. Their combined perspectives shaped the focus of the study on Mdm. Efa's accounting class (A3P5), where students often struggle to generate ideas, develop content, and write effective paragraphs. The study explores whether Gemini AI can serve as a practical tool to help these students expand their vocabulary, build topic-related knowledge, and produce better-structured essays.

The researchers applied Bruner's Scaffolding Theory (as cited in McLeod, 2024) to design materials that support students in crafting topic sentences, providing relevant examples, and applying correct grammar—key components of MUET writing. This support is gradually reduced as students gain confidence and competence. With their combined experience and strong foundation in writing instruction, Mdm. Efa and Mdm. Revathy offers guidance through feedback and classroom interaction, aligning with Vygotsky's scaffolding approach (Wheeler, 2025).

The objectives of this action research are to:

1. assess the impact of the use of Gemini AI on students' argumentative essays.
2. investigate students' interest towards the use of Gemini AI in writing classes.

METHODOLOGY

Participants

This action research focused on a group of six students from the accounting class (A3P5) at Kolej Matrikulasi Negeri Sembilan (KMNS), enrolled in the 2024/2025 academic session. The group comprised five female students and one male student, all enrolled in the compulsory English subject for both semesters (July 2024–May 2025). These students were specifically selected due to their consistent struggle with paragraph development, often producing only a single sentence per paragraph during essay writing exercises.

Research Design

Figure 1 shows the **qualitative action research model** employed in this study, guided by the **Kemmis and McTaggart Model (1988)**, as cited in Burns (2010). The model includes a continuous and reflective four-phase cycle: **planning, acting, observing, and reflecting**. This approach allowed for ongoing improvements in instructional strategies and provided opportunities to assess student progress throughout each intervention cycle.

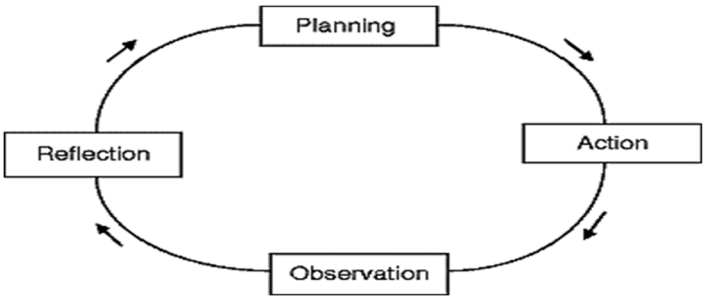

Figure 1.: Action Research Model by Kemmis and McTaggart

Research Setting and Role of Researchers

The research was conducted in a real classroom setting at KMNS. The primary researcher, Mdm. Efa acted as both the instructor and the facilitator of the interventions, while Mdm. Revathy served as a co-observer. Observations were carried out during lessons to monitor student responses and engagement throughout both group and individual writing tasks.

Intervention Overview

The intervention, titled **'Let's Write Using Gemini AI'**, was conducted in two cycles:

- **Cycle 1 (Group-Based Intervention):** Students worked collaboratively to construct content paragraphs using **Gemini AI**. The focus was on understanding paragraph components: topic sentence, supporting details, examples, and concluding sentence. The AI tool was used for idea generation, grammar checking, vocabulary improvement, and sentence restructuring.

- **Cycle 2 (Individual-Based Intervention):** Students independently wrote full essays using the same MUET-format question from Cycle 1. Gemini AI was used as a supporting tool during this process. Later, a **final test (Test B)** was administered under exam conditions without the use of Gemini AI to evaluate students' independent writing abilities.

Data Collection and Instruments

Table 1 presents the data collection process and instruments, which included essays, mahjong paper presentations, and survey responses via Google Forms as outlined below:

Table 1.: Data Collection Process and Instruments

No	Process	Instrument
1	Diagnostic Test (Test A)	Argumentative essay: '*Modern society has taken freedom for granted. Discuss.*'
2	Cycle 1 (Group Work)	Paragraph writing using Gemini AI, followed by a proofreading activity presented on mahjong paper.
3	Cycle 2 (Individual Work)	Full essay writing using Gemini AI.
4	Test B (Final Test)	Individual essay without Gemini AI (same topic from Cycle 1 & 2).
5	Students' Perception on Gemini AI	Google Form survey on students' interest and experience using Gemini AI.

RESULTS AND DISCUSSIONS

Students' Writing Performance

Each student's writing performance is measured in this study by looking at the differences between Test A and Test B. The argumentative essays in Test A and Test B were marked using the MUET marking guidelines rubric for preparing students for MUET based on two important criteria, task fulfilment and language. Both have a total score of 60 marks. Each student's writing performance is also compared to find out how much students have gained or improved by using the descriptive statistics as seen in Table 2 below.

Table 2.: Student's Writing Performance: Results of Test A and Test B

Sample	Test A	Test B	Difference
1	15	30	15
2	12	24	12
3	13	22	11
4	14	24	10
5	15	26	11
6	11	26	14

The final stage of the process in this study was to reflect and evaluate, which was to assess the impact of the use of Gemini AI on students' argumentative essays. Table 2 indicates improvements in students' writing performance as the marks' difference increased from 10 to 15 marks. Sample 1 shows the highest difference of 15 marks. Whereas, sample 4 showed the lowest difference of 11 marks. The results indicate writing performance among students. Therefore, this achievement aligns with Jee and Aziz (2021) who claim that good grades demonstrate learners are able to grasp the question or statements offered in the evaluation. As a result, the increased writing performance showed that using Gemini AI has a positive impact on students' essays.

The second research objective is to investigate students' interest towards the use of Gemini AI in writing classes. Students had expressed their opinions and thoughts by responding to one survey question via a simple Google Form. Students' responses were recorded as shown in table 3 below.

Table 3.: Students' Personal Responses on the Use of Gemini AI in Writing Classes

Sample	Student's Personal Response
1	Gemini AI can help me elaborate more about ideas in essays.
2	Gemini AI could help me become a better writer by correcting my grammar, giving me new ideas, and helping me make my writing clearer and easier to understand.
3	I think all matriculation students should use Gemini AI to ace an essay.
4	By giving me great ideas to write essays.
5	Generates outline of writing.
6	Gemini AI helps me think about the ideas of my point, help with my vocabulary and expand more on my ideas.

The data obtained from table 2 revealed 100% of the students improved tremendously in their writing performance showing Gemini AI is useful for students in writing argumentative essays. At the end of the study, students were able to write longer essays confidently without referring to Gemini AI. Students were able to expand and develop contents by giving appropriate topic sentences, elaboration, examples and a short conclusion. Basically, the outcome of this study shows that teaching writing using Gemini AI has helped students in developing ideas in a more organized and coherent way. Students also gained more confidence in their writing skills as they got to come across new knowledge and vocabulary.

On the other hand, this study also investigated students' interest towards the use of Gemini AI in writing classes. Table 3 shows that 100% of the students expressed positive responses towards using Gemini AI in the writing classroom. They provided the benefits of Gemini AI in writing essays such as generating and outlining ideas and points, helping to expand ideas and gaining appropriate vocabulary. One student agreed that Gemini AI could help him become a better writer by correcting his grammar, giving him new ideas, and helping him produce clearer and more comprehensible writing. Additionally, one of the students suggested all matriculation students should use Gemini AI to ace an essay.

However, there are two problems encountered while conducting this study. First is to deal with time limitations before study week. Due to time constraints, there are not many activities that could be done to enhance students' writing performance. So, it is recommended that more time should be given so that students could try writing different sets of questions using Gemini AI. The second problem is that Gemini AI is available only on teachers' digital platform (DELIMa) and not on students' accounts. As a result, students had to log in using their personal Google accounts, which in some cases required payment to access Gemini AI.

CONCLUSION

In conclusion, this action research was aimed to improve teaching strategy so that teachers are able to help students to write better essays and score higher marks in their writing component paper. It is hoped that this would eventually result in a better performance in MUET which would enable students to obtain a higher MUET band.

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