# Revealing the Effect: How Google Slides Helps Improve Vocational Students' Writing Skills

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## Abstract

Despite the widespread integration of Google Slides in educational settings, its direct effect on students' writing skills has received limited attention, primarily focusing on students' perceptions rather than measurable outcomes. This research aimed to quantify the impact of Google Slides on enhancing students' abilities to construct descriptive texts, employing qualitative and quantitative methods to provide a comprehensive analysis. Conducted over eight weeks at a Vocational High School in Banyumas, Central Java, the study involved 36 tenth-grade students. Utilizing a mixed-methods design, observations and pre-post test scores were collected to assess the effectiveness of Google Slides in the classroom. The quantitative analysis of pre-and posttest results showed a significant improvement in writing skills ($t(35)$ = -16.095, $p < 0.001$), indicating that Google Slides positively affects students' writing capabilities. Qualitative observations further highlighted the tool's broader benefits, including increased motivation, readiness to learn, and enhanced vocabulary among participants. The study thus confirms the significant positive impact of Google Slides on students' writing development and offers insights into its potential as a valuable educational resource.

**Keywords**: Descriptive text, mix-method research, google slides, collaborative writing

## INTRODUCTION

Writing is an essential language skill for effective communication and expressing ideas, necessitating the integration of visual, motor, and cognitive abilities (Azasu & Berggren, 2015; Cole et al., 2019; Yen et al., 2015). In the era of rapid technological advancement, technology is critical in enhancing the writing process and helping students organize and articulate their thoughts into coherent written form. The emergence of Industry 4.0 underscores the importance of integrating technological tools in education to improve the quality of learning, offering a variety of media and tools to aid teachers and students (Puspitasari et al., 2018; Sudarmo et al., 2021). Using technology in the teaching

and learning of writing enables the creation of dynamic environments where students are actively engaged with technology-enhanced writing processes. Furthermore, internet-based tools promote collaborative learning, fostering teamwork and communication skills essential for the writing process (Perry & Rangu, 2020). Therefore, incorporating technology in writing instruction not only facilitates the development of writing skills but also cultivates a collaborative and innovative learning atmosphere, thereby enriching students' educational experiences and proficiency.

Additionally, technology allows teachers to develop engaging materials that captivate students. Writing in a foreign language presents a complex challenge involving meticulously organizing thoughts and emotions (Hyland, 2019; Rico, 2014; Vurdien, 2013). This complexity often results in disengagement among students, who find constructing paragraphs or compositions in English tedious and uninteresting. Their struggles are compounded by difficulties structuring their texts and situating their ideas appropriately within their work. Previous research indicates that these challenges are partly due to a need for sufficient writing experience, leading to a perception among students that writing is an inherently tricky task (Asadifard & Koosha, 2013; Kemalsyah et al., 2022). This perception is further reinforced by the unique difficulties encountered in writing compared to other language skills, such as reading (Säljö, 2010). Consequently, students often find it challenging to generate new ideas, leading to a general aversion to writing activities within the context of foreign language learning, particularly in English (Cheng, 2002). This introduction sets the stage for investigating the potential of digital tools like Google Slides to mitigate these challenges and enhance the writing skills of students learning English as a foreign language.

Addressing the challenges highlighted earlier, the researchers undertook observations to gain a deeper insight into the prevalent issues. The research findings highlighted two primary concerns: the inefficacies within the teaching and learning process in the classroom and the student's writing skill deficiencies. Students often need help generating ideas during writing tasks. Despite having a topic, translating these ideas into compelling written work remains a formidable challenge for many. Moreover, students need help with writing mechanics, including vocabulary and sentence structure, further complicating their ability to produce coherent texts. Another critical issue identified was the need for more motivation within writing classes, influenced by various factors such as the media, techniques, and classroom activities. These all contribute to students' diminished interest in writing tasks.

In light of these issues, Spanger et al. (2012) suggest that English teachers can alleviate students' writing difficulties by adapting and enhancing their instructional approaches. In this context, adopting online learning media is a viable solution to address these challenges. Teachers are encouraged to leverage online platforms to augment students' motivation and enhance their writing quality. The digital era offers access to various digital platforms, including online and offline learning websites. Among these, the Google Slides web application stands out. Google Slides facilitates interactive presentations and Q&A sessions, accessible via laptops or smartphones (Anshori & Syam, 2018; Doyle, 2017; Purnama & Pramudiani, 2021), making it an ideal platform for engaging students in writing exercises. Its collaborative features are particularly beneficial in an English learning setting, allowing for a dynamic and interactive writing process. With Google applications widely

adopted across numerous state school districts and many students already having accounts, Google Slides presents a promising opportunity to positively impact students' writing skills, offering a practical and accessible solution to the highlighted educational challenges.

Beyond collaboration, Google Slides' multimedia features significantly enrich the writing-learning experience (Leng et al., 2021). Students can augment their written work by integrating images, videos, and audio recordings, making the process more engaging and allowing expression in various formats. This multimedia approach supports a more comprehensive understanding and representation of ideas, appealing to different learning styles and enhancing creativity. Furthermore, Google Slides serves as a versatile platform for interactive writing activities. Teachers can craft slides with prompts, questions, or exercises tailored to engage students in writing tasks (Mallampalli & Goyal, 2021). Activities such as fill-in-the-blank exercises, drag-and-drop tasks, or interactive quizzes can be incorporated into presentations to effectively consolidate writing concepts and skills. Through these interactive elements, Google Slides promotes an engaging and dynamic learning environment, encouraging students to actively participate and actively apply their writing skills in varied contexts.

Two notable studies offer insights into exploring the effectiveness of Google Slides in English teaching. Ahmad et al. (2020) surveyed 39 students from Universiti Tun Hussein Onn Malaysia, finding positive impacts of Google Slides on student attitudes, motivation, and achievement in Industrial Design courses. Meanwhile, Nakai (2022) observed 19 undergraduates using Zoom and Google Slides for project-based learning, noting improved English skills, though only a modest reduction in students' anxiety. These studies suggest that digital tools like Google Slides can enhance learning outcomes by boosting engagement, motivation, and academic performance.

In examining the scope of previous research, it becomes apparent that existing studies have primarily focused on evaluating students' perceptions of using Google Slides, leaving a gap in understanding its direct impact, especially in enhancing writing skills. While there has been experimental inquiry into the effects of collaborative presentation platforms, these efforts have yet to precisely zero in on Google Slides. This observation sets the stage for the current research, which is designed to investigate the definitive impact of Google Slides on improving the descriptive writing abilities of vocational students. This particular focus on vocational students is inspired by Hidayatulloh (2022), who highlights the distinct needs of English Language Teaching (ELT) in vocational education, emphasizing that the teaching approach should support the development of skills relevant to vocational disciplines. To navigate through this investigation, the study is guided by two hypotheses: The null hypothesis (H0) posits that Google Slides does not significantly affect students' descriptive writing skills. Conversely, the alternative hypothesis (H1) argues for a significant impact of Google Slides on enhancing these skills. Through this research framework, the study aims to fill the identified gap by providing empirical insights into the efficacy of Google Slides as an educational tool in vocational settings.
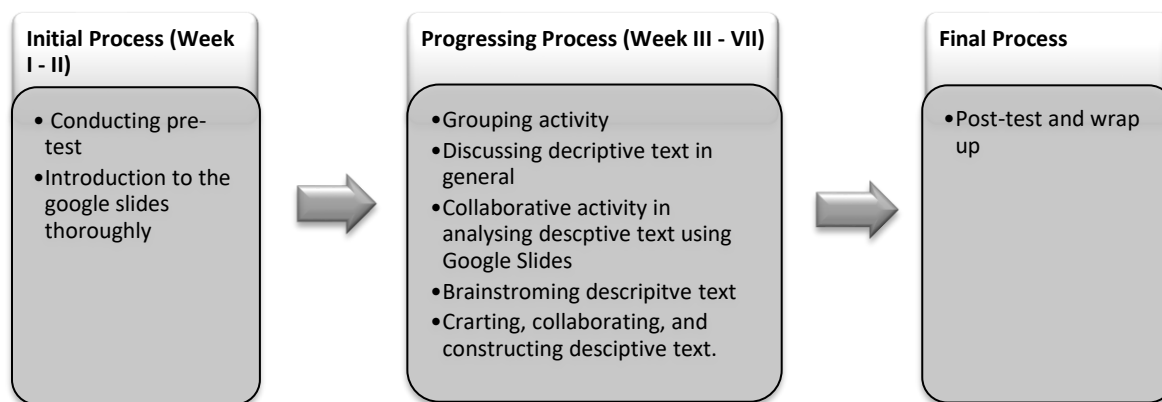
**METHOD**

This research adopted a mixed-method design, integrating both quantitative and qualitative approaches to provide a comprehensive understanding of the impact of Google Slides on students' writing skills. Quantitatively, the study began with administering pre- and posttests to evaluate changes in students' writing abilities, analyzing mean scores to offer statistical insights. Qualitatively, detailed observations of participants' behaviours and experiences were made during the intervention. This dual approach allowed the researchers to generalize findings to a broader population and gain an in-depth understanding of individual experiences, thus balancing the breadth of quantitative data with the depth of qualitative insights (Dawadi et al., 2021). By employing mixed methodologies, the study leveraged the strengths of both quantitative and qualitative research, mitigating their limitations.

The intervention spanned two months, consisting of eight sessions, and involved 36 students from a private vocational school in Banyumas. Participants were given a pretest to assess their baseline proficiency in writing descriptive texts before the treatment commenced. Quantitative data were gathered through tests crafted and scored according to a writing assessment rubric by Brown and Bailey, as cited in Brown and Abeywickrama (2004). Meanwhile, qualitative data were collected through observations made during the treatment phase, capturing the nuanced interactions and experiences of the students as they engaged with Google Slides in their writing activities.

During the intervention, the research methodology unfolded through a structured sequence of activities throughout eight sessions, meticulously designed to enhance students' writing skills using Google Slides. Following the pretest administration, participants were introduced to the various functionalities of Google Slides, ensuring they had a foundational understanding of the tool. This was followed by the provision of materials focused on descriptive texts, where students were exposed to several examples and engaged in activities to discern their structural components collaboratively.

The intervention's core involved students employing Google Slides to prepare and share presentations collaboratively. This process facilitated the application of their understanding of descriptive texts and fostered peer learning and idea exchange. A pivotal aspect of this phase was the collective effort to create coherent descriptive texts within Google Slides, emphasizing collaborative writing and critical thinking. Furthermore, Google Slides served as a dynamic discussion platform, enabling students to refine their texts through collective input and feedback. This approach culminated in producing descriptive texts, which were evaluated as posttests to measure the student's progress and understanding.

The diagram below illustrates the step-by-step treatment process, encapsulating the initial introduction to Google Slides, the exploration of descriptive text materials, the collaborative writing and discussion phases, and the final assessment of students' work. This systematic approach underscores the study's methodological rigour and the integration of technology in pedagogy to enhance learning outcomes.

**Figure 1.** The Schema of Treatment

To evaluate the impact of the intervention on students' writing skills, the researchers applied a paired sample t-test to the pre- and posttest data. A statistical method was chosen for its effectiveness in analyzing the significance of mean differences, even with small sample sizes. This approach accurately measured the treatment's influence on the students' ability to write descriptive texts. Before performing the t-test, preliminary checks were conducted to ensure the data's normal distribution and homogeneity, which are essential steps for validating the appropriateness of the statistical test used. Following this, the paired sample t-test provided a rigorous quantitative analysis of the improvement in students' writing skills attributable to using Google Slides in their learning process.

Complementing the quantitative analysis, a thorough review of observational data was conducted. This qualitative analysis offered immediate insights into the dynamics of the intervention, capturing the nuances of student engagement, collaboration, and the learning environment fostered by the innovative use of Google Slides. Together, these analytical methods afforded a holistic understanding of the intervention's effectiveness, encapsulating the statistical significance of the student's progress and the qualitative aspects of their learning experience.

## FINDING AND DISCUSSION
### *Normality Test*

Before explaining the result from the t-test, the researchers conducted two assumption tests for parametric data. They were the normality test and the homogeneity test. This part of the section showed the result of the normality test. It is vital since analyzing this data would run through a parametric test. Das and Imon (2016) stated that inferential statistics data must go beyond normality checking. Furthermore, to be able to know, the researcher ran the degree of normality, Skewness and Kurtosis test assumption. The calculation was determined by dividing the Skewness and Kurtosis scores by their std. error score. The table below summarizes the results of the test.

**Table 1.** Descriptive statistics

|  | N | Min | Max | Mean | Std. Dev | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  | Statistics | Std. Error | Statistic | Std. Error |
| Pretest | 36 | 54 | 75 | 61.69 | 4.701 | .748 | .393 | .514 | .768 |
| Postest | 36 | 70 | 89 | 81.03 | 5.438 | -.738 | .393 | -.679 | .768 |

The calculation was continued by dividing the score skewness with its Std. error and the Kurtosis score with the Std. error as well. It was found that the Skewness score on the pretest was at 1.90, and the Kurtosis score was at 0.67. On the other hand, the Skewness and Kurtosis posttest scores were sequentially at -1.87 and -0.88. Since the confidence degree was at 5%, the data is usually distributed if the score is lower than 1.96. Recalling the result of calculation in skewness and kurtosis in both pre and posttest, the data were normally distributed. It was found that 1.90 < 1.96, 0.67<1.96, -1.87<1.96, and -0.88<1.96. Moreover, the researchers also referred to another assumption, which is that the result of skewness and kurtosis must be between -2 to 2 to be said to be normally distributed. Based on those two assumptions, the data for the pretest and posttest could be normally distributed.

### Homogeneity Test

After conducting the normality test, the researchers did a homogeneity test to fulfil the parametric test. Levene's test statistic was used to measure whether the data were homogenous. When the result said it was homogeneous, parametric data analysis was allowed to be used in this current research. The table below shows the result of the Levene test for searching for homogeneity.

**Table 2.** Test of homogeneity of variances

|  |  | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| All Score Pretest and Posttest | Based on Mean | .645 | 1 | 70 | .424 |
|  | Based on Median | .403 | 1 | 70 | .528 |
|  | Based on the Median and with adjusted df | .403 | 1 | 69.943 | .528 |
|  | Based on trimmed mean | .791 | 1 | 70 | .377 |

The result revealed that the *p-value* (.Sig) was 0.424. As the assumption of the Levene test of homogeneity, it is recognized as homogeneous if the *p*-value is. Sig > 0.05. Since the *p value* of. Sig was 0.424,  which was higher than 0.424; it could be said that the data were homogeneous. By finding this, the data were eligible for conducting the parametric test since it passed two assumption tests: normality and homogeneity.

### Paired Sample T-test Result

A paired sample t-test was conducted to see whether there was a significant difference before and after giving Google Slides treatment for descriptive text writing. Thus, to find the significance, researchers conducted a paired sample t-test. After conducting a paired sample t-test, the results could be seen as follows:

**Table 3.** Paired samples statistics

|  |  | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 1 | Pretest | 61.69 | 36 | 4.701 | .784 |
|  | Posttest | 81.03 | 36 | 5.438 | .906 |

**Table 4**. Paired samples test

|  | Paired Differences |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|
|  | | | | 95% Confidence Interval of the Difference | | | | |
|  | Mean | Std. Dev | Std. Error | Lower | Upper | t | df | Sig. (2-tailed) |
| Pretest - Postest | -19.33 | 7.207 | 1.201 | -21.772 | -16.895 | -16.0 | 35 | .000 |

A paired sample t-test was conducted to compare the students' descriptive writing scores before and after collaborative learning using Google Slides. From the calculation of a paired t-test, it was revealed that there was a significant difference in the scores for the pretest (before the treatment) (M=61.69, SD= 4.70) and posttest (after the treatment) (M=81.03, SD= 5.43); t(35)= -16.095, *p* = 0.000. These results showed that using Google Slides positively affected students' descriptive writing skills compared with the conventional way. The current results revealed that incorporating Google Slides in descriptive learning significantly affects students' writing skills, particularly in descriptive writing topics. Also, it emphasized that the null hypothesis (H0) is rejected and the alternative hypothesis (H1) is accepted.

### *Classroom Observation Results*

In this research, the teaching and learning process was meticulously carried out, with early planning playing a pivotal role. The researcher creatively addressed some encountered challenges by incorporating pictures and guided questions into Google Slides, which significantly enhanced the teaching phase. An initial requirement analysis and evaluation were conducted to identify the student's needs and potential difficulties that could be addressed. This approach led to notable improvements in the teaching stage, as evidenced by student feedback; learners found writing easier when following the structured guidance in Google Slides.

The classroom atmosphere also benefited from the teaching process. Students displayed genuine excitement when introduced to new concepts, particularly the functionalities of Google Slides. This enthusiasm was not just about learning a new tool but also about the challenge and curiosity sparked by engaging with technology. This curiosity significantly boosted their motivation to learn. Observations revealed that students were highly engaged and eager to experiment with Google Slides, showing particular interest in focusing on descriptive writing. It was noted that the majority, 32 out of the students, found using Google Slides to be more varied.

Furthermore, the researcher tried to build rapport with the students, understanding their needs to enhance their motivation in writing further. By asking guided questions, the teacher aimed to facilitate the students' writing process, which proved effective as 32

students followed the guided questions and visual prompts closely. As a result, 33 students correctly used Google Slides, reflecting their high motivation and sustained interest throughout the learning process.

During the teaching phase, a significant improvement was made in the strategy implemented by the researcher to enrich students' vocabulary. Initially, before the introduction of guided questions and visual aids, 33 students found it challenging to access the appropriate vocabulary for their writing tasks. This difficulty persisted even after the first cycle of the intervention. Observation data indicated that 32 students resorted to using Google Translate for assistance in their writing, especially for the first posttest. In response, during the second cycle, the teacher advised using Google Translate only for unfamiliar words and encouraged the use of dictionaries to avoid the wholesale translation of sentences, as observed in the initial phase. Writing new vocabulary on the board facilitated student discussions around these terms, and incorporating them into the students' notebooks significantly boosted their vocabulary acquisition.

Another area of improvement was in students' ability to organize and generate ideas. Observation data revealed that 19 students struggled with organizing thoughts for their writing, and 27 found it challenging to generate content in response to questions. However, after applying the strategy of using images and guided questions on Google Slides, 27 students showed a marked improvement in their ability to develop ideas. This approach proved effective in aiding students in formulating their thoughts more efficiently, underscoring the utility of visual aids and structured guidance in enhancing cognitive processes involved in writing.

Google Slides proved to be a valuable tool for enhancing collaboration among students. According to observation data, all 36 students engaged in peer collaboration when working with Google Slides, sharing vocabulary, ideas, and information to produce influential descriptive writings. Notably, 33 students actively participated in the authoring process on Google Slides. These observations highlight a unanimous agreement among the students that using Google Slides for group activities significantly simplified collaborative efforts. As detailed in the table below, this shift towards a more collaborative learning environment is underscored by the observed behavioural changes before and after the intervention. This evidence suggests that Google Slides facilitates the sharing of ideas and language and fosters a more cooperative and productive classroom atmosphere.

**Table 5**. Students' behaviour

| Problems | Before Treatment | After Treatment |
|---|---|---|
| Monotonous media used | The students still use traditional mediums in writing. They use whiteboards and paper/books as a medium for writing text. | This medium can make them more interested in writing text; they can increase their motivation to write text while they try Google Slides. |
| Lack Vocabularies | The students need more vocabulary mastery. | The student's vocabulary mastery improves well through pictures of different topics. They can choose |

| | | the right words in specific contexts. They can make simple words based on the picture and guided questions. They can also write good paragraphs by following guided questions in Google Slides. |
|---|---|---|
| Difficulty finding the idea | The students have difficulty exploring their ideas in words | The students can explore their ideas by being stimulated with pictures and guided questions in Google Slides. |
| Low motivation in learning | The students need more motivation to write text. Some students give little attention, and some are busy talking to their friends. | The students are more enthusiastic about joining lessons. The students focus on the teaching-learning process because they are interested in the pictures, |
| The teacher rarely conducted/collaborative work. | The teacher usually uses an individual assignment to write text; the students must write on paper. | The students can write text collaboratively on a Google Slide. They can share vocabulary mastery with their friends. They can share their ideas and make good sentences in writing text; they also can see their friends writing to increase their imagination and trigger in developing ideas. They can ask each other and collaborate anytime, not only in class, because Google Slides can be accessed anytime and anywhere. |

This research aimed to determine the effect of Google Slides on students' writing skills, specifically in the context of descriptive writing. Employing a mixed-methods approach over two months, the study unearthed vital findings categorized into quantitative and qualitative outcomes. Quantitatively, the analysis revealed a significant improvement in students' writing skills post-treatment with Google Slides, as evidenced by the results of a paired sample t-test. The p-value obtained was 0.000, signifying a meaningful difference in mean scores before and after the intervention; based on the standard, a p-value less than 0.05 is considered significant. Therefore, using Google Slides positively impacted students' descriptive writing abilities, leading to the acceptance of the alternative hypothesis (H1) and the rejection of the null hypothesis (H0).

Qualitatively, observations highlighted a positive shift in students' behaviours and attitudes following the intervention. The researchers observed increased students' learning

motivation, noting more active participation during the learning process. Integrating technology, such as Google Slides, not only introduced a new dimension to learning but also significantly enhanced student engagement compared to traditional methods. Discussions facilitated through Google Slides allowed students to broaden their ideas. Notably, the treatment fostered an environment conducive to collaborative learning, aligning with observed improvements in various areas, including vocabulary development. Overall, the combination of quantitative and qualitative findings underscores the effectiveness of Google Slides in enriching students' learning experiences and writing skills.

Reflecting on previous research, this study has established a connection between using technology and enhancing writing skills. While there was a lack of specific statistical research on Google Slides' impact on student's writing proficiency, the broader premise of leveraging technology to improve writing has garnered support from various scholars. Studies by Lopez-Pellisa et al. (2021), Kuimova & Zvekov (2016), Waluyo (2023), and Yundayani et al. (2019) have all underscored the positive effects of technological integration on students' writing abilities.

Beyond the general improvement in writing skills, this research also delved into the more nuanced impacts of using Google Slides, as observed directly in the classroom. Notably, an improvement in students' vocabulary was observed, alongside enhancements in their writing style. These findings align with those of Nakai (2021), who noted vocabulary enrichment among students participating in a project-based English learning initiative in Japan, utilizing both Zoom and Google Slides.

While Google Slides was initially intended to create visual presentations, its capabilities can be innovatively adapted through various techniques and strategies for the writing learning process. A prevalent method involves employing Google Slides as a collaborative writing tool, wherein multiple users can simultaneously access and edit the same document. This feature allows real-time collaboration among students or between students and teachers, fostering an environment conducive to peer review, group writing projects, and collective brainstorming sessions (Doyle, 2017). Such collaborative efforts enhance the writing process and encourage active participation and peer learning. Additionally, Google Slides enables teachers to offer immediate feedback and guidance directly within the presentation, providing students with timely and constructive insights into their writing.

Furthermore, this study identified increased student motivation and readiness for learning, attributing these gains to the novel learning dynamics introduced by Google Slides. This technology-facilitated learning environment, distinct from traditional methods, noticeably boosted students' engagement and willingness to participate. The significance of technology in elevating students' motivation has also been highlighted in research by Huang et al. (2016), Sun and Gao (2020), Ustun et al. (2022), and Wichadee and Pattanapichet (2018), reinforcing the potential benefits of employing Google Slides in educational settings.

Consequently, the implications of this research extend beyond the macro level of writing proficiency to encompass micro-level improvements in vocabulary and metacognitive aspects of learning. English educators are encouraged to incorporate Google Slides into their teaching strategies to realize these multifaceted benefits, underscoring the tool's potential to enhance various facets of English learning.

## CONCLUSION

This study aimed to explore the effectiveness of Google Slides in enhancing students' writing skills, particularly in descriptive writing, within a collaborative learning framework. Spanning eight weeks and involving 36 participants, the analysis, supported by a paired sample t-test, demonstrated a significant improvement in students' descriptive writing capabilities after implementing Google Slides. The marked difference in pre- and posttest scores (p=0.000) confirmed the hypothesis (H1), evidencing the beneficial impact of Google Slides on writing instruction. Classroom observations further illuminated several advantages, such as increased student engagement, motivation, and the facilitation of collaborative work. With its capacity for incorporating visuals and guided questions, Google Slides proved instrumental in enhancing idea generation, vocabulary expansion, and promoting collaborative writing practices. Its adaptability also allowed for learning experiences that surpassed traditional classroom boundaries, encouraging ongoing collaboration and learning.

The positive outcomes of using Google Slides in writing instruction carry significant implications for educational practices. These findings advocate for the integration of technology, like Google Slides, as a means to significantly augment students' writing skills. Such tools make learning more interactive and collaborative and aid in moulding more proficient writers. The study further suggests that multimedia elements in teaching can spark student interest and boost motivation. Given its versatility and ease of use, Google Slides can seamlessly integrate into various teaching methodologies and classroom environments. In essence, this research underscores the potential of Google Slides to revolutionize writing instruction and enhance student learning outcomes, advocating for its broader adoption in educational settings.

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