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Harnessing AI for Writing Excellence: Exploring ToolBaz.com and Gender Differences in Enhancing Twelfth Graders' Narrative Skills

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ABSTRACT

This study investigates the effectiveness of ToolBaz.com, an AI-based writing tool, in enhancing narrative text writing skills among grade XII students at SMAN 3 Padang, Indonesia. Given the increasing integration of AI in education, this research aims to determine whether AI-assisted writing tools improve student performance compared to traditional methods. A quasi-experimental design was employed, involving an experimental group that used ToolBaz.com and a control group using a non-AI tool. Writing performance was assessed through pre- and post-tests. Data were analyzed using an independent t-test and two-way ANOVA to measure the tool's impact and gender-based differences. Findings indicated a statistically significant improvement in writing scores in the experimental group (M = 80.12) compared to the control group (M = 75.37, p = 0.032). Additionally, the experimental group exhibited a lower standard deviation, suggesting more consistent learning outcomes. Gender-based analysis showed no significant differences, indicating that ToolBaz.com provides equal support for both male and female students. The results suggest that AI-based tools can enhance writing performance by offering personalized scaffolding and structured feedback, leading to more effective learning. The consistency in learning outcomes further highlights AI's role in reducing disparities in writing proficiency. AI-assisted writing tools have the potential to revolutionize writing instruction in secondary education. Further research, including longitudinal and qualitative studies, is recommended to assess long-term effects and students' perceptions of AI-based learning interventions.

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1. INTRODUCTION

Writing skills are a crucial foundation in English language learning, enabling students to express ideas clearly and to develop critical and creative thinking. It involves not only the mechanics of writing but also the cognitive processes of understanding, analyzing, and organising information (Fitrianingrum & Aryani, 2024).Through writing, students develop language skills, increase their vocabulary, and improve their understanding of different concepts. Writing also enhances logical

thinking, reasoning, and the ability to make persuasive arguments while encouraging reflection and re-evaluation of ideas (Olga, 2023). Therefore, writing in English is essential not only for communication but also for the development of critical thinking, creativity, and cognitive skills.

The Merdeka Curriculum emphasizes the mastery of various text types, including narrative, analytical, and persuasive texts. In grade XII, students commonly study narrative texts such as legends, folktales, and fantasy stories. Through these texts, students are expected to understand text structures, apply linguistic features, and produce their own narratives. However, many students encounter significant challenges in writing narrative texts. According to Gitsaki et al. (2015, p.159), vocabulary acquisition is a major hurdle in language learning, even for experienced learners. Similarly, Palanisamy and Abdul Aziz (2021) highlight that word choice, vocabulary mastery, grammatical accuracy, and idea organization are among the most persistent difficulties students face. Additionally, students often struggle with structuring their narratives, correctly applying linguistic features, and developing ideas comprehensively (Muliani, Norahmi, & Asi, 2019).

Traditional textbook-based instruction in narrative writing presents further challenges, as it provides limited knowledge and restricts students' opportunities for creative expression. Many conventional textbooks fail to engage students who are accustomed to digital and interactive media. Abreu et al. (2017, p. 281) emphasize that analyzing media texts and their intended audiences is a crucial aspect of media literacy, which traditional approaches often overlook. To address these limitations, artificial intelligence (AI) offers a compelling alternative. AI-based tools not only generate structured text but also allow students to refine and develop their narratives according to their preferences. This approach has the potential to create a more engaging and relevant learning experience, enhancing student motivation and improving their narrative writing skills more effectively.

The integration of artificial intelligence (AI) in English language learning has expanded across various language skills, including speaking, listening, reading, and writing. Several studies have explored the potential of AI in enhancing students' writing abilities. Pratama & Hastuti (2024) found that AI technologies, such as Gencraft and ChatGPT, significantly improve English writing skills, with students demonstrating enhanced writing proficiency after using these tools. Similarly, Abdullayeva (2023) confirmed that ChatGPT has a substantial impact on students' academic writing, reinforcing its effectiveness in language learning. Additionally, Demïrbaş & Şahïn (2022) demonstrated that digital AI-based services effectively support students in developing creative writing skills.

However, while many studies focus on AI's role in academic writing, research on its effectiveness in fostering creative writing skills, particularly in the narrative genre, remains limited. This gap highlights the need for further investigation into how AI can enhance students' ability to construct engaging and well-structured narratives, providing personalized feedback and scaffolding throughout the writing process.

This research gap is particularly important given the unique demands of narrative writing, which requires students to use their imagination, creativity and storytelling skills. While academic writing focuses on structure and factual accuracy, narrative writing challenges students to create engaging plots, develop characters and convey emotions. Therefore, there is a significant gap in research on the role of AI in supporting creative writing skills, particularly in narrative texts. Furthermore, the growing importance of narrative writing in curricula, such as the Merdeka Curriculum, highlights the need for innovative approaches that can address the unique challenges students face in mastering this genre. This gap highlights the potential for further research into how AI tools, such as ToolBaz.com, can support students in improving their narrative writing skills, fostering creativity and overcoming common challenges such as organising ideas and using vocabulary.

The existence of differences in writing ability between males and females has been a concern in various studies. (Al-saadi & Heidari-shahreza (2020) found that female students generally showed better writing skills compared to male students, especially in the aspects of organizing ideas and using language. On the other hand, research by Duffett et al. (2024) showed that male students tend to be more explorative in using new technologies such as AI to support their learning. This difference raises

an important question: does the effect of using AI in improving narrative text writing ability differ between males and females? Further research is needed to answer this question and uncover whether gender differences play a significant role in the effectiveness of AI-based learning.

Toolbaz.com is an online platform that employs artificial intelligence (AI) to assist students in developing their writing abilities, with a particular focus on narrative text composition. This platform provides various features that make it easier for students to write in a structured manner and use a variety of vocabulary. The advantage of Toolbaz.com lies in its ease of access without the need to download an application, because it is web-based. Although, Toolbaz.com can generate text automatically, but it still allows writers to edit the resulting text. By utilizing these platforms, students are expected to be more motivated in learning to write and can develop their creativity. AI technology at Toolbaz.com offers innovative and practical solutions to overcome various challenges in learning to write, especially in the use of vocabulary and good writing structure.

Based on the findings of problems in the learning process of narrative writing and the review of previous study, it can be concluded that learning narrative writing requires learning media that can stimulate students' imagination. This media aims to strengthen the application of learning experiences and knowledge as a basis for composing narrative writing. Therefore, this study focuses on the utilization of AI ToolBaz.com media as a solution to improve narrative writing skills in grade twelve students. To date, no research has specifically evaluated the effectiveness of ToolBaz.com in supporting students' narrative text-writing skills.

This study aims to analyse the effect of using AI ToolBaz.com on twelfth-grade students' ability to write narrative texts. Hopefully, the results of this study can provide new insights for teachers about the importance of choosing appropriate learning media. Thus, the findings of this research have the potential to inform strategies for enhancing teacher professionalism and fostering more optimal learning outcomes.

2. METHODS

2.1 Research Design

This research used a quasi-experimental with a 2x2 factorial approach and post-test only design. The quasi experimental design is chosen because the researcher wanted to examine the effect of one variable on another. A quasi-experiment is a research method that allows researchers to evaluate the effects of an intervention or treatment without using random assignment (Nichols & Edlund, 2023). This type of experimental research usually involves a comparison or control group to evaluate the research question (Mackey & Gass, 2005: 146).

Table 1. Factorial Design

Gender	ToolBaz.com (A1)	Non-AI tools (A2)
Male (B1)	A1B1	A2B1
Female (B2)	A1B2	A2B2

Adopted from Gay (2012, p.272)

Where:
A1 B1 = The male students in the experimental group used ToolBaz.com
A2B1 = The male students in the control group employed non-AI tools
A1B2 = The female students in the experimental group used ToolBaz.com
A2B2 = The female students in the control group used non-AI tools

2.2 Place and Time

This research was conducted at SMAN 3 Padang in the twelfth grade of the 2024/2025 school year.

2.3 Population and Sample

The populations of this research were four classes of twelfth-grade students of SMA N 3 Padang that got Bahasa Inggris Lanjut subject. The population specification is as follows:

Table 2. The Number of Population

No.	Class	The Number of Students	Male	Female
1.	XII F.1	36	15	21
2.	XII F.2	36	16	20
3.	XII F.3	36	13	23
4.	XII F.10	36	22	14
	Total	144	66	78

Before selecting samples from the four population groups, it is important to conduct normality and homogeneity tests on the results of the narrative text writing placement test. These tests ensure that the class population is representative enough to be sampled. Kolmogorov-Smirnov test was used for normality test, while Bartlett's formula for homogeneity. Two classes were randomly selected as experimental and control classes through cluster random sampling. Samples were selected from the entire population, and two classes were randomly determined through a lottery. And XII F3 was chosen as the experimental class and XII F2 as the control class.

Table 3. Test of Normality

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Class	Statistic	df	Sig.	Statistic	df	Sig.
Writing Score	XII F1	.148	34	.056	.914	34	.011
	XII F2	.102	34	.200*	.935	34	.044
	XII F3	.123	34	.200*	.938	34	.055
	XII F10	.163	30	.040	.931	30	.053

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 4. Tests of Homogeneity

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Writing Score	Based on Mean	2.213	3	128	.090
	Based on Median	2.167	3	128	.095
	Based on Median and with adjusted df	2.167	3	125.588	.095
	Based on trimmed mean	2.115	3	128	.101

2.4 Data Measurement Technique

The data collection technique in this study used a quantitative approach with an experimental method. The learning process for the experimental and control classes applied the genre-based approach (GBA). The GBA learning process generally consists of four stages: BKOF (Building Field

Knowledge) where students are invited to understand the context and characteristics of the genre; MOT (Modelling of the Text) where the teacher provides an example text and analyses it with students; JCOT (Joint Construction of Text) where the teacher and students jointly construct the text; and ICOT (Independent Construction of Text) where students independently write the text (Hyland, 2003). ToolBaz.com was integrated into the teaching process during the 'MOT stage' where students used the AI tool to generate narrative texts based on clues and elements of a fantasy story. This allows students to analyse the structure and language of the generated text, encouraging discussion and reinforcing key narrative concepts.

Data were collected through two main instruments: placement test and post-test writing ability. First, a placement test was given to all students to measure their initial ability in writing narrative texts. This test asked students to write a narrative text based on three prompts given, with a length of 250-300 words within 90 minutes. The result of this placement test was used as the baseline for students' writing ability. Second, a post-test was conducted after the intervention using AI ToolBaz.com to measure students' narrative text writing ability. This post-test had a similar format as the placement test but with different keywords to avoid the learning effect. The study used three culturally-themed narrative writing prompts involving a magical fish, an enchanted batik, and a mystical Kris for placement tests, followed by post-test prompts about a magical stone, a dragon at Mount Bromo, and a quest for a healing stone in a temple. To score the test, the researcher used scoring rubric by Brown (2004), that assess 5 aspect: content, organization, vocabulary, grammar, and mechanism.

2.5 Data Analysis

In analyzing the scores, the researcher classified the average of each class based on the possible class performance by Valette & Harris (1970, p. 134). Since there are 5 aspects of assessing student writing performance, with a rating scale of 1-4, and each aspect has its own weight. The content aspect has a weight of 30%, organization 20%, vocabulary 15%, grammar 20%, and mechanism 15%, then the maximum score should be 100 and the minimum score should be 25.

The narrative writing test results were first tested to ensure the normality and homogeneity of the data using SPSS 25 software, so that the analysis could be conducted appropriately. Normality test was carried out using the Kolmogorov-Smirnov method, while homogeneity test was carried out using Levene's Test. The test results showed that the data fulfilled the assumptions of normality and homogeneity. Furthermore, the test data were analysed using an independent t-test using SPSS 25 to compare the performance of the experimental and control groups.

3. FINDINGS AND DISCUSSION

The narrative text writing scores were collected from two groups: Class XII F3, which functioned as the experimental group utilizing ToolBaz.com, and Class XII F2, which served as the control group using conventional, non-ToolBaz.com media. These scores provide valuable insights into the comparative effectiveness of digital versus traditional teaching approaches in enhancing students' writing abilities. The performance data from both groups are illustrated in the following chart, highlighting any differences in achievement. By analyzing these results, the study aims to determine whether the integration of AI-based tools like ToolBaz.com leads to measurable improvements in students' narrative writing skills compared to traditional instructional methods. This comparison not only sheds light on the efficacy of digital media in the classroom but also offers guidance for educators seeking to incorporate innovative technologies into their pedagogical strategies.

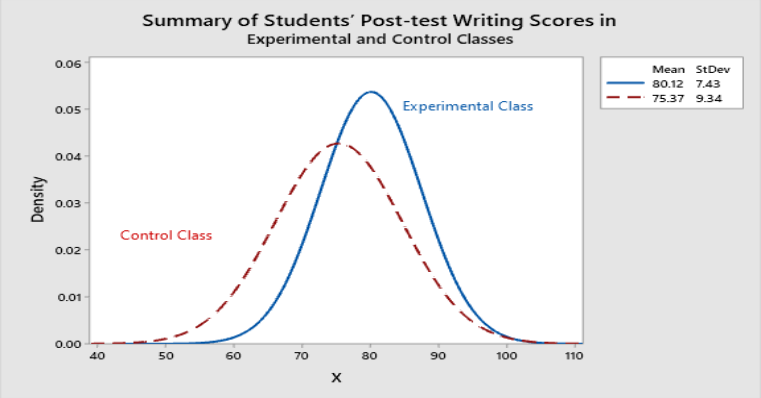

Figure 1. Summary of Students' Post-test Writing Scores in Experimental and Control Classes

Based on the Chart, the experimental class that used ToolBaz.com as media had an average writing score of 80.12 with a standard deviation of 7.43. In contrast, the control class, which used non-ToolBaz.com media, recorded a lower average writing score of 75.37 and a standard deviation of 9.34. This comparison revealed differences in both the mean scores and the variability of the scores between the two groups.

The notable difference in the mean scores between the experimental and control classes indicates that the use of ToolBaz.com in the experimental class improved student performance. The experimental class mean score of 80.12 was higher than the control class mean score of 75.37, indicating the use of ToolBaz.com was more effective in improving student achievement. Interestingly, the lower standard deviation of 7.44 in the experimental class compared to 9.34 in the control class implies a more consistent level of performance among the treated students, whereas the control class showed greater variability in performance. This suggests that the experimental treatment not only improved overall performance, but also helped create more homogeneous learning outcomes among the students. In addition, to determine the effect of AI ToolBaz.com on students' narrative text writing ability, the results of t-test data processing are also presented. This test would test the hypothesis:

H0: The use of AI Toolbaz.com does not have a significant effect on Twelfth-grade students' writing ability in narrative text compared to non-AI tools

Ha: The use of AI Toolbaz.com has a significant effect on Twelfth-grade students' writing ability in narrative text compared to non-AI tools

Based on the test results, the interpretation of the significance value follows a standard threshold: if the p-value is less than 0.05, the null hypothesis (*H0*) is rejected, indicating that the use of AI ToolBaz.com has a statistically significant effect on students' writing abilities. This outcome suggests that incorporating ToolBaz.com into instructional practices leads to measurable improvements in students' narrative text writing skills. On the other hand, if the significance value is greater than or equal to 0.05, the null hypothesis is accepted, implying that there is no statistically significant difference in writing performance between students who used ToolBaz.com and those who did not.

This approach provides an objective basis for evaluating the effectiveness of digital tools in enhancing learning outcomes. It also offers valuable insights for educators and policymakers when considering the integration of AI-assisted platforms into curriculum design. The following section presents the results of the Independent Sample t-test, which highlights the comparative analysis of writing scores between the experimental and control groups. These results serve as the foundation for further discussion on the practical implications of using AI tools in educational settings.

Table 5. Result of the First Hypothesis

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Students' Writing Score	Equal variances assumed	.516	.476	2.198	59	.032	4.74597	2.15883	.42616	9.06578
	Equal variances not assumed			2.190	55.358	.033	4.74597	2.16691	.40402	9.08792

As illustrated in Table 5, the two-tailed significance value of 0.032 is less than 0.05, indicating a statistically significant result. This indicated that there was a notable impact on students' writing performance in the experimental group, which utilized ToolBaz.com, in comparison to the control group, which did not employ ToolBaz.com. Therefore, the null hypothesis (H0) is rejected.

Based on the statistical analysis presented in Table 2., a deeper understanding can be obtained regarding the effectiveness of using ToolBaz.com as a teaching tool in improving students' writing achievement when compared to the control group that did not use ToolBaz.com. The calculated significance value for the two-tailed test is 0.032, which is less than the common threshold of 0.05. This provided a strong statistical basis to reject the null hypothesis (H0) and accept the alternative hypothesis, indicating a significant difference in students' writing ability between the experimental and control groups.

In order to gain a more profound understanding of the impact of ToolBaz.com on students' narrative writing abilities, an analysis of specific writing subskills was conducted. The subskills evaluated included content development, organisation, language use, and mechanics.The experimental group demonstrated notable improvements across all subskills when compared to the control group.For content development, the experimental group achieved an average score of 85.30, which was significantly higher than the 79.25 average score achieved by the control group. A similar pattern was observed in the organisation scores, with the experimental group achieving an average of 82.50, significantly higher than the 76.40 average of the control group. These results suggest that the AI-assisted tool provided targeted support that enhanced students' abilities to generate ideas, structure their narratives, and present them in a clear and engaging manner.

The experimental group demonstrated significant advancements in both language use and mechanics. The mean language use score for the experimental group was 78.80, in comparison to 72.15 for the control group, indicating a higher level of accuracy and sophistication in vocabulary and grammar. In the domain of mechanics, which encompasses punctuation, spelling, and capitalisation, the experimental group demonstrated an average score of 80.45, while the control group attained an average of 74.90. These enhancements in these subsidiary skills demonstrate the efficacy of ToolBaz.com's AI features in providing immediate feedback and corrective suggestions, thus enabling students to refine their narratives. These findings underscore the broader pedagogical potential of AI tools such as ToolBaz.com in enhancing not only overall writing ability but also the specific subskills necessary for competent narrative writing.

Additionally, this study investigates whether gender differences have an impact on students' writing skills. It specifically examines whether there is an interaction between the use of ToolBaz.com and gender differences in influencing students' ability to write narrative texts. To analyze this potential

interaction, the study employs a two-way ANOVA test, the results of which are presented to provide a clear understanding of the combined effects of these variables. This analysis is intended to test the following hypothesis: whether the use of ToolBaz.com and gender differences jointly contribute to variations in students' narrative writing performance.

H_0: There is no significant interaction between the use of Toolbaz.com and gender differences in affecting Twelfth-grade students' writing ability in narrative text at SMAN 3 Padang.
Ha: There is a significant interaction between the use of Toolbaz.com and gender differences in affecting Twelfth-grade students' writing ability in narrative text at SMAN 3 Padang.

Table 6. Result of the Third Hypothesis

Tests of Between-Subjects Effects

Dependent Variable: Experimental Writing Achievement

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	356.428[a]	3	118.809	1.620	.195	.079
Intercept	348935.514	1	348935.514	4759.150	.000	.988
Gender	1.865	1	1.865	.025	.874	.000
Media	296.735	1	296.735	4.047	.049	.066
Gender * Media	11.328	1	11.328	.155	.696	.003
Error	4179.176	57	73.319			
Total	373634.375	61				
Corrected Total	4535.605	60				

a. R Squared = .079 (Adjusted R Squared = .030)

Based on Table 6, the results of *tests* of *between-subjects effects* for the hypothesis analysis provide the following conclusions:

1. F0 (Media) = 4.047 with sig value = 0.049 < 0.05, so H0 is rejected. Thus, the proposed hypothesis was supported by the data, and it was concluded that there was a significant difference in students' narrative writing ability between the group that used ToolBaz.com and the group that did not use it.
2. F0 (Gender) = 0.025 with sig value = 0.874 > 0.05, so H0 is accepted. Thus, the hypothesis proposed was not supported by the data, and it was concluded that there was no significant difference in students' narrative writing ability based on gender.
3. F0 (Gender × Media) = 0.155 with sig value = 0.696 > 0.05, so H0 is accepted. Thus, the hypothesis proposed was not supported by the data, and it was concluded that there was no significant interaction between the use of ToolBaz.com and gender on students' narrative writing ability.

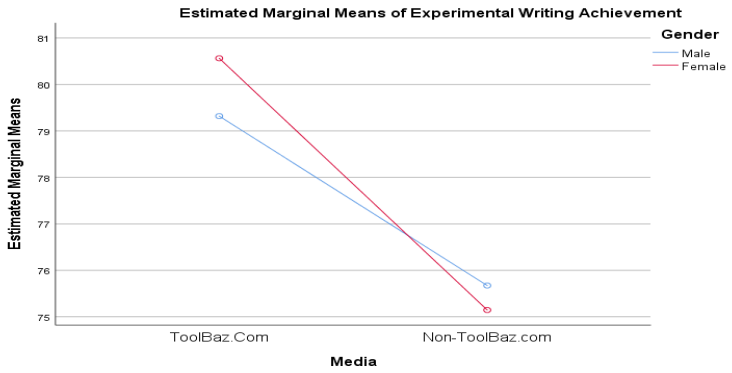

Figure 2. Interaction between the Use of Toolbaz.com and Gender in Affecting Twelfth-grade Students' Writing Ability in Narrative Text

Based on the chart, the interaction between media, gender, and learning outcomes shows that the use of ToolBaz.com provides significant benefits to students' writing ability, regardless of gender. Although overall, students who used ToolBaz.com had higher mean scores compared to those who used non-ToolBaz media, the analysis showed that there was no significant interaction between media and gender in affecting learning outcomes. This is evident from the F value for the interaction of gender and media of 0.155 with a significance level of 0.696 (>0.05), indicating that the effect of media on learning outcomes was not significantly different between male and female students.

In addition, although gender as an independent factor did not have a significant effect on learning outcomes (F = 0.025, sig = 0.874), media independently showed a significant effect (F = 4.047, sig = 0.049). In other words, differences in student learning outcomes are more determined by the type of media used than gender differences. ToolBaz.com as a learning media proved effective in improving students' writing skills for both males and females. This indicated that the features offered by ToolBaz.com provided equal support for all students to organise ideas and produce better narrative texts.

This study found that the use of ToolBaz.com significantly improved students' narrative writing ability. This result is in line with previous research that showed the benefits of digital writing tools especially AI, for students' writing skills (Widiati et al., 2023; Pratama & Hastuti, 2024; Pitukwong & Saraiwang, 2024; Ngoi et al., 2024). ToolBaz.com's interactive features likely enhanced students' engagement with the writing process. The platform's real-time feedback mechanisms and intuitive interface may have reduced cognitive load, allowing students to focus more on creative expression and narrative development rather than technical aspects of writing. This indication supports the theory of cognitive load in digital learning environments (Skulmowski & Xu, 2022) which suggests that reducing extraneous cognitive load is essential for effective learning. When technical barriers are minimized, students experience less unnecessary load, thus allowing them to focus on the learning task itself, such as writing.

The findings of this study are of practical significance for the enhancement of teaching practices in EFL classrooms. The efficacy of ToolBaz.com in enhancing students' narrative writing abilities suggests that integrating AI tools into the curriculum can be a valuable strategy for fostering writing skills. Teachers could leverage such tools to provide immediate feedback, guide idea development, and ensure consistent learning outcomes, as evidenced by the reduced variability in scores within the experimental group. This approach has the potential to enhance student performance and contribute to the creation of a more supportive and engaging learning environment.

Furthermore, the absence of significant gender-based differences in the effectiveness of ToolBaz.com indicates that the platform's features are accessible and advantageous for all students, regardless of gender. This finding aligns with the research of Almusharraf et al. (2023), who reported that the use of digital tools does not significantly influence gender differences in motivation and

engagement. Such results highlight the potential of digital tools to create a gender-neutral learning environment, allowing both male and female students to benefit equally from the educational experience. These findings challenge traditional assumptions regarding gender disparities in technology adoption and writing anxiety, as discussed by Kim (2018) and Loureiro et al. (2020). By integrating AI-based tools like ToolBaz.com into instructional practices, educators can modernize their teaching approaches, reduce the workload associated with manual error correction, and dedicate more attention to personalized guidance. Ultimately, this fosters a more inclusive, supportive, and effective learning environment that accommodates the diverse needs of all learners.

4. CONCLUSION

The results of the research conducted at SMAN 3 Padang provide valuable insights into the effect of ToolBaz.com on students' writing ability and writing anxiety in narrative texts. The integration of ToolBaz.com significantly improved students' writing ability and reduced anxiety levels, with no significant effect of gender differences, suggesting that the tool benefits both male and female students equally. However, the study has limitations, particularly in terms of the generalizability of its findings, as it was conducted in a single school. Future research could be extended to different educational settings and include qualitative follow-up, such as interviews or surveys, to explore students' experiences of the tool. In addition, investigating the long-term effects of AI tools such as ToolBaz.com on writing ability and anxiety would provide a deeper understanding of their lasting impact on students' learning outcomes.

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