



## The Influence of Technology-Based Writing Learning on Students' Writing Skills in the Digital Era

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### Abstrak

Penelitian ini bertujuan untuk mengkaji pengaruh pembelajaran menulis berbasis teknologi terhadap keterampilan menulis siswa di era digital. Dengan pendekatan kuantitatif dan desain eksperimen semu, penelitian ini melibatkan dua kelompok siswa dari beberapa sekolah menengah atas, yaitu kelompok eksperimen yang menerima pembelajaran menulis berbasis teknologi dan kelompok kontrol yang menggunakan metode konvensional. Data dikumpulkan melalui tes menulis pre-test dan post-test, serta angket untuk mengukur persepsi siswa terhadap penggunaan teknologi dalam pembelajaran menulis. Hasil penelitian menunjukkan bahwa kelompok eksperimen mengalami peningkatan keterampilan menulis yang signifikan dibandingkan dengan kelompok kontrol. Rata-rata skor post-test kelompok eksperimen meningkat sebesar 19,8 poin, sementara kelompok kontrol hanya meningkat sebesar 5,3 poin. Uji-t menunjukkan perbedaan yang signifikan antara kedua kelompok dengan nilai  $p < 0,05$ . Selain itu, angket menunjukkan bahwa siswa dalam kelompok eksperimen merasa lebih termotivasi, lebih mudah mengorganisasi tulisan, dan lebih percaya diri dalam menulis setelah menggunakan teknologi. Pembelajaran menulis berbasis teknologi terbukti memberikan manfaat besar dalam meningkatkan keterampilan menulis siswa, terutama dalam pengorganisasian ide, kelancaran penulisan, penggunaan kosakata, dan tata bahasa. Meskipun demikian, penggunaan teknologi harus dilakukan dengan bijak untuk menghindari ketergantungan pada alat digital yang dapat mengurangi keterampilan dasar menulis. Penelitian ini menyarankan agar pendidik mengintegrasikan teknologi secara efektif dalam pembelajaran menulis untuk mencapai hasil yang optimal di era digital.

**Kata Kunci:** pembelajaran berbasis teknologi, keterampilan menulis, siswa, era digital, pembelajaran konvensional

### Abstract

*This study aims to examine the effect of technology-based writing learning on students' writing skills in the digital era. With a quantitative approach and quasi-experimental design, this study involved two groups of students from several high schools, namely the experimental group that received technology-based writing learning and the control group that used conventional methods. Data were collected through pre-test and post-test writing tests, as well as a questionnaire to measure students' perceptions of the use of technology in writing learning. The results showed that the experimental group experienced a significant increase in writing skills compared to the control group. The average post-test score of the experimental group increased by 19.8 points, while the control group only increased by 5.3 points. The t-test showed a significant difference between the two groups with a p value  $< 0.05$ .*

*In addition, the questionnaire showed that students in the experimental group felt more motivated, easier to organize writing, and more confident in writing after using technology. Technology-based writing learning has been shown to provide great benefits in improving students' writing skills, especially in organizing ideas, writing fluency, vocabulary use, and grammar. However, the use of technology must be done wisely to avoid dependence on digital tools that can reduce basic writing skills. This study suggests that educators integrate technology effectively in writing learning to achieve optimal results in the digital era.*

**Keywords:** *technology-based learning, writing skills, students, digital era, conventional learning.*

## Research Background

Amidst the rapid developments occurring in the current digital era, the presence of various forms of technology has had an extraordinary and significant impact on various aspects of human life, including in the very important realm of education. One of the most visible and obvious impacts is on learning methods and processes, especially in terms of mastering writing skills that are very much needed in modern times. Writing learning, which was previously carried out with a traditional and conventional approach, is now increasingly influenced by the use of sophisticated and innovative technology, such as writing applications, various digital platforms, and social media that are very popular among the younger generation (Dewi, 2025). Thus, it is very important to carefully examine how the influence and impact of technology-based writing learning can affect students' writing skills, especially in understanding the influence of technology on the shift in the way students interact and produce their writing in this ever-growing digital era (Rahmadani & Reskinta, 2024).

Writing skills are fundamental skills that play a very important role both in education and in everyday life. Writing activities not only function as a means of communication, but also as a medium to stimulate and develop critical and creative thinking patterns. As expressed by Hyland (2016), writing is a skill that requires continuous practice. In the realm of education, the process of teaching writing generally focuses on developing ideas, structuring texts, and the ability to adjust writing styles according to the communication goals to be achieved. Therefore, it is very important for educators to apply effective learning methods, including utilizing technology, in an effort to help students hone and improve their writing skills (Harefa et al., 2023).

Educational technology, especially the internet and digital applications, has opened up many significant opportunities for improving students' writing skills around the world (Muzakky et al., 2023). A study conducted by Warschauer in 2011 clearly showed that the use of technology can help students hone their writing skills in a much more interactive and creative way than traditional methods. As a very interesting example, through innovative online learning platforms, students can collaborate on various writing activities with their friends anywhere and anytime, provide constructive and valuable feedback to each other, and access a variety of very helpful sources of information that support their writing process as a whole. In addition, advanced technology such as modern word processing applications also provide various features that provide support and assistance to students at every stage of the writing process, such as effective automatic grammar checks, comprehensive dictionary tools, and intelligent suggestion systems to improve the quality of the sentences they create better (Sianturi and Sianturi, 2025).

While technology offers exciting opportunities, its use in the writing learning process also presents a unique set of challenges. One of the most striking challenges is how to use technology effectively to support the development of students' writing skills. According to Coiro (2017), although there are many tools and applications designed to help students write, there is a potential for dependence on technology to interfere with basic writing skills, such as handwriting and manual idea-organization skills. Therefore, it is essential for educators to understand and apply technology wisely, so that technology can function as a reinforcement of writing skills without neglecting crucial elements of the more traditional writing process (Widiastuti and San, 2024).

In addition, differences in access to technology greatly affect the extent to which technology-based writing learning can take place in different schools. Some educational institutions have adequate resources to support optimal use of technology, while others may experience various obstacles, such as lack of hardware, limited internet connections, or lack of training for teachers. This situation has the potential to affect the effectiveness of technology use in improving students' writing skills. A study conducted by Anderson and Rainie (2018) revealed that although technology provides various benefits, inequality in access can cause gaps in the quality of education received by students (Hariyono et al., 2024; Rahim, 2025).

At the same time, it is very important to evaluate the influence of technology on students' motivation in writing activities. Based on research conducted by Kim and Kwon (2017), the use of technology has the potential to increase students' interest and enthusiasm in writing. This is especially seen when students are given the freedom to choose digital tools that suit their interests, such as blog platforms, social media, or creative writing applications (Dewi, 2024). With this technology, students find it easier to express their ideas freely and in various ways, which can ultimately help them develop their writing skills. As an illustration, when students write on blogs or social media, they can reach a wider audience, thus increasing their motivation to improve the quality of their writing (Melinda et al., 2024).

However, it is important to note that there are risks associated with the uncontrolled use of technology in the writing learning process. Students can get caught up in the habit of writing in a hurry and tend to neglect the quality of their writing. This can arise from the pressure to meet deadlines or word counts set by the particular application or platform they are using. Therefore, the role of teachers is crucial in providing clear direction on how to use technology in writing effectively. This includes guidance on how to develop ideas, write clearly and structured, and revise and edit carefully (Alamsyah and Wahyudi, 2024).

In this context, research on the impact of technology-supported writing learning on students' writing skills in this digital age is very

significant to be carried out. This research has the potential to provide a deeper understanding of how technology can be integrated efficiently into the writing learning process, as well as the challenges and opportunities that arise in its implementation. In addition, this research also has an important role in recognizing the influence of technology on students' writing skills, both in terms of creativity, technical skills, and enthusiasm for learning (Astuti & Rambe, 2024).

Thus, the purpose of this study is to investigate the impact of technology-supported writing learning on students' writing skills in this digital era (Dewi, 2025). It is hoped that the results of this study will provide a significant contribution to the development of more efficient writing learning methods, by utilizing technology to the maximum to improve students' writing skills.

## **Method**

This study adopted a quantitative approach and used a quasi-experimental design to explore the impact of technology-oriented writing learning on students' writing skills in today's digital context. The main focus of this study was to identify the extent to which the application of technology in the teaching and learning process can contribute to improving students' writing skills, when compared to more traditional conventional learning methods. The choice of this approach was taken by the researcher because it can provide an opportunity to measure the effects of technology-based learning variables on students' writing skills, in a situation similar to the implementation of an experiment, but without the application of strict randomization to the groups involved, namely the experimental and control groups.

The population that is the focus of this study is students who attend high school, namely senior high schools (SMA), located in several educational institutions in Makassar. Sampling in this study will be carried out using a purposive sampling technique, where schools that have implemented technology-based learning in their educational process will be selected as research locations. The samples taken consist of two different groups of students, namely the experimental group involved in writing learning by utilizing technology and the control group who undergo writing learning in a conventional way using traditional methods, such as writing by

hand and using textbooks. Each group will consist of 30 students, with a total number of respondents reaching 60 students. The process of selecting the experimental and control groups is carried out by considering the suitability of class characteristics, such as similar initial writing ability levels. This aims to minimize other variables that may affect the results of the research conducted (Ary, Jacobs, & Sorensen, 2014).

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This study was conducted in three main stages: 1. Preparation Stage: At this stage, the researcher made preparations by selecting a school, obtaining permission from the school, and collecting initial data on students' writing skills through a pre-test given to both groups (experimental and control). This test aims to measure students' writing skills before participating in learning. 2. Treatment Stage (Intervention): At this stage, the experimental group will take part in technology-based writing learning for six weeks. Learning will be carried out using a digital writing application and an online platform that allows students to write and collaborate online. The teacher will provide feedback and guidance during this process. The control group will continue writing learning using conventional methods, where students write manually with books and pencils and receive feedback from the teacher in the form of

writing. 3. Measurement Stage (Post-test): After the treatment, both groups will take the same writing test as the pre-test to measure changes in their writing skills. In addition, students will also fill out a questionnaire that measures their perceptions of technology-based learning.

The data collected from the pre-test and post-test will be analyzed using a t-test to determine whether there is a significant difference in writing skills between the experimental group and the control group. This t-test will test the hypothesis that the use of technology-based writing learning can improve students' writing skills better than conventional learning. The questionnaire data will be analyzed using descriptive analysis techniques to describe students' perceptions of the use of technology in writing learning (Creswell, 2014).

## Result and Discussion

This study aims to examine the effect of technology-based writing learning on students' writing skills in the digital era. In this study, two groups of students, namely the experimental group (who received technology-based learning) and the control group (who followed conventional learning), were tested with writing tests before and after treatment to evaluate changes in their writing skills. The following table 1 shows the average results of the pretest and posttest scores of students' writing skills in both groups.

Table 1. *average results of pretest and posttest scores of students' writing skills*

Group	Average pre-test score	Average Post Test Score	difference between post test and pre test
Experimental Group	65.4	85.2	+19.8
Control Group	66.1	71.4	+5.3

From the table above, it can be seen that the experimental group experienced a greater increase in writing skills compared to the control group. The experimental group, which used technology-based learning, showed an average increase in scores of 19.8 points, while the control group only increased by 5.3 points.

Analysis of Score Differences Between Experimental and Control Groups. To test whether the difference between the experimental and control groups is significant, a t-test was

conducted on the difference in post-test and pre-test scores of both groups. The results of the t-test showed that there was a significant difference between the experimental and control groups, with a p value  $<0.05$ . This indicates that technology-based learning significantly improves students' writing skills better than conventional methods.

Student Motivation and Perception of Technology-Based Learning. The results of the analysis of the questionnaire filled out by students showed that most students in the experimental group felt more motivated and interested in participating in technology-based writing learning. The following are the results of the analysis of student perceptions of the use of technology in writing learning presented in table 2.

Table 2. *Students' Perceptions of Technology-Based Writing Learning*

Question	Average Score (Scale 1-5)
I feel more motivated to write using technology.	4.3
Technology makes it easier for me to organize my writing.	4.1
The use of technology makes learning to write more interesting.	4.5
I feel more confident in writing after using technology.	4.2

Table 2 shows that most students have a positive perception of the use of technology in writing learning. The high average score on each questionnaire item indicates that technology can increase students' motivation and comfort in writing.

In the post-test writing test, students' skills were measured based on several aspects, namely organizing ideas, writing fluency, using appropriate vocabulary, and grammar. The following are the results of the comparison between the experimental group and the control group in each aspect of writing skills.

Table 3. *Comparison of Writing Skills Aspects*

Skill Aspect	Experimental Group	Control Group
Organizing Ideas	18.3	12.8
Writing Fluency	17.5	14.2
Use of Vocabulary and Style of Language	18.7	15.4

Grammar	16.6	14.1
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From the table 3 above, it can be seen that the experimental group showed greater improvement in all aspects of writing skills compared to the control group. This indicates that technology-based learning provides significant benefits in developing various aspects of writing skills, including organizing ideas, writing fluency, and better use of vocabulary and grammar.

Based on the results of the research that has been conducted, it can be stated that the use of technology in the writing learning process has a significant impact on improving students' writing skills. This finding is in line with previous studies that show that technology plays an important role in developing students' writing skills through various methods. Some of the methods identified include the ability of technology to provide real-time feedback, easy access to various reference sources, and increased student motivation in their writing activities (Warschauer, 2011; Coiro, 2017). One of the main factors driving the improvement of writing skills through technology-based learning is the presence of various tools and resources that support the writing process itself. For example, the use of word processing applications equipped with automatic grammar checker features can make it easier for students to identify and correct errors. In addition, the existence of online platforms that allow students to collaborate and discuss their writing provides more opportunities for students to polish and perfect the writing they produce (Hyland, 2016).

In addition, the application of technology also plays a role in increasing students' enthusiasm for learning. In this study, students who used technology when learning to write reported that they felt a higher interest and greater motivation to write. This is in line with the results of research obtained by Kim and Kwon (2017), which showed that technology can provide a more interesting and exciting writing experience for students.

Although technology-supported learning offers a number of significant advantages, it is crucial to remember that technology needs to be applied wisely and in balanced portions. The use of technology that is too intense or unsupervised can lead to dependence on digital devices, which in turn can result in a decline in basic writing

skills, including handwriting skills and manual editing skills (Coiro, 2017).

Overall, the results of this study indicate that technology-based writing learning has great potential to improve students' writing skills in the digital era. Therefore, it is important for educators to continue to develop and adapt effective technology-based learning methods to support the improvement of students' writing skills in schools.

## Conclusion

Based on the results of the research that has been conducted, it can be concluded that technology-based writing learning has a significant influence on improving students' writing skills in the digital era. Learning that uses technology not only improves students' technical abilities in writing, but also increases their motivation and comfort in carrying out the writing process.

The results of the analysis revealed that students involved in technology-based learning experienced a significant increase in their writing skills, much greater than students who followed conventional learning methods. This increase can be seen in various aspects of writing skills,

including organizing ideas, fluency in writing, use of appropriate vocabulary, and application of correct grammar. Moreover, students in the experimental group reported feeling more motivated and more confident when writing, which is in line with the finding that the application of technology can make the writing process more interesting and enjoyable.

Learning based on technology, such as the use of word processing applications and online platforms, offers various significant advantages, including the ability to provide direct feedback, ease of access to references, and the opportunity to collaborate with classmates. However, it is very important for educators to be wise in using this technology, given the potential risk of dependence on digital tools, which can result in a decline in basic writing skills.

Overall, the results of this study reveal that when technology is applied appropriately, it can serve as a very powerful tool to improve students' writing skills. Thus, it is highly recommended for educational institutions and educators to continue to develop and utilize technology in the writing learning process, in order to achieve maximum results in writing education in the ever-evolving digital age.

## References

- Alamsyah, A., & Wahyudi, E. (2024). Transformasi Digital untuk Mitigasi Banjir: Optimalisasi Sistem Informasi di Jawa Barat. *Jurnal Perlindungan Masyarakat: Bestuur Praesidium*, 1(2), 50-62. ipdn.ac.id
- Anderson, J. & Rainie, L. (2018). *The Future of Jobs and Skills in the Digital Age*. Pew Research Center.
- Ary, D., Jacobs, L. C., & Sorensen, C. (2014). *Introduction to Research in Education* (9th ed.). Wadsworth, Cengage Learning.
- Astuti, N. W. & Rambe, R. N. (2024). Pengaruh Media Gambar Berseri terhadap Kemampuan Menulis Siswa Kelas Rendah. *Aulad: Journal on Early Childhood*. aulad.org
- Coiro, J. (2017). Exploring the intersection of technology, literacy, and learning. *Reading Research Quarterly*, 52(4), 423-432.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). Sage Publications.
- Datu, Y. A. (2024). *Panduan Praktis Bahasa Inggris Untuk Era Teknologi*. ubaya.ac.id
- Dewi, AC. (2024). "Pemanfaatan Sosial Media Sebagai Sarana Pembelajaran di Era Digital". *Jurnal Skripta*, 10 (2), 73-83.
- Dewi, AC. (2025). "Implementasi Kurikulum Merdeka dalam Pembelajaran Bahasa Indonesia: Tantangan dan Peluang di Era Digital". *Jurnal Riset Guru Indonesia*, 4 (1), 01-05.
- Dewi, AC. (2025). "Strategi Pembelajaran Bahasa Indonesia Berbasis AI dalam Meningkatkan Literasi Digital Siswa". *Jurnal Pendidikan dan Pembelajaran*, 5 (1), 01-05.
- Harefa, R. T. H., Lase, W. N., Telaumbanua, R., & Bawamenewi, A. (2023). Pengembangan Media Augmented Reality untuk Meningkatkan Kemampuan

- Menulis Teks Deskripsi Siswa SMP. *Journal on Education*, 6(1), 3241-3247. academia.edu
- Hariyono, H., Andriani, V. S., Tumober, R. T., Suhirman, L., & Safitri, F. (2024). Perkembangan Peserta Didik: Teori dan Implementasi Perkembangan Peserta Didik pada Era Digital. PT. Sonpedia Publishing Indonesia. [HTML]
- Hyland, K. (2016). *Academic Writing: An Introduction*. Routledge.
- Kim, S., & Kwon, H. (2017). Digital Tools and Literacy: The Effects of Digital Text on Writing Skills. *Journal of Literacy Research*, 49(3), 312-329.
- Melinda, S., Rahmawati, O. D., Safira, R. G., & Martutik, M. (2024). Meningkatkan kemampuan menulis cerita pendek siswa kelas XI melalui implementasi media gambar berseri. *Journal of Language Literature and Arts*, 4(10), 1033-1042. um.ac.id
- Muzakky, R. M. R., Mahmuudy, R., & Faristiana, A. R. (2023). Transformasi Pesantren Menghadapi Era Revolusi Digital 4.0. *ALADALAH: Jurnal Politik, Sosial, Hukum Dan Humaniora*, 1(3), 241-255. stisnq.ac.id
- Rahim, R. (2025). Implementasi Pembelajaran Berbasis Cerita dan Permainan Edukatif di Kelas 3 SD Sekolah Indonesia Riyadh. *Didaktika: Jurnal Kependidikan*. jurnaldidaktika.org
- Rahmadani, D. & Reskinta, T. O. (2024). PENGGUNAAN DAN PEMANFAATAN TEKNOLOGI DIGITAL DALAM PROSES BELAJAR MENGAJAR DILINGKUNGAN PESANTREN. *Jurnal Kajian Agama Islam*. jurnalhst.com
- Sianturi, R. D., & Sianturi, L. T. (2025). Pemanfaatan Teknologi Pembelajaran Microsoft Office Dengan Metode Interaktif Pada SMP Negeri 2 Lubuk Pakam. *Jurnal Pendidikan dan Pembelajaran (JPP)*, 7(1). journalpedia.com
- Warschauer, M. (2011). Learning in the Cloud: A Study of Technology and Writing. *The International Journal of Learning*, 18(10), 193-205.
- Widiastuti, F. D., & San Fauziya, D. (2024). Pemanfaatan media audio visual YouTube untuk meningkatkan kemampuan menulis berita pada pembelajaran Indonesia. *Jurnal Pendidikan, Bahasa Dan Budaya*, 3(3), 27-43. amikveteran.ac.id.