

THE EFFECT OF HANDWRITING AND TYPING ON STUDENTS' WRITING SKILLS

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ABSTRAK

The advent of the digital age has brought about a shift from handwriting to typing using digital devices. This change has raised concerns about its impact on writing skills. This study aims to analyze the effect of handwriting and typing on students' writing skills. A quantitative pre-experimental research method was used, involving two writing groups (handwriting and typing). Data were collected through writing skill tests and observation sheets, then analyzed using normality tests, homogeneity tests, and t-tests (independent sample t-tests). The results showed that handwriting had an effect on writing skills with an average score of 82.55, while typing also had an effect with an average score of 70.14. These findings indicate that handwriting has a greater influence than typing on writing skills. Students who write by hand produce more structured writing in terms of idea organization, grammar, spelling, and punctuation. Meanwhile, typing helps with writing speed, but is lacking in terms of idea processing and writing structure.

1. INTRODUCTION

Initial observations on September 30, 2024, at SDIT Al-Hikmah showed that students more frequently used digital devices in the process of learning to write, especially since online learning began after the pandemic. Writing with digital devices such as laptops or tablets is considered more efficient, but teachers noted that students' writing tended to be shorter, less structured, and lacking in idea development. Meanwhile, writing done manually by hand shows more complete sentence structure and more varied word choice. This situation highlights the need to systematically evaluate the impact of handwriting and typing methods on students' writing skills.

Writing skills are a form of skill that uses the mind, reasoning, and actions in communicating through writing (Tayibu, 2023). Writing skills at the elementary school level are a crucial aspect of student literacy, because they not only reflect mastery of linguistic rules, but also indicate critical thinking, creativity, and the ability to organize ideas systematically. Writing skills are also considered

the most complex because they involve the integration of cognitive, psychomotor, and affective aspects (Lovita et al., 2023).

Writing skills learning in today's digital age is undergoing a significant transformation. Technology has become an integral part of the educational process. Many schools have adopted digital devices as learning media, including in writing activities. Students are now accustomed to using computers or gadgets to type their assignments, rather than writing by hand as they did before. This change raises a fundamental question: does typing have the same, better, or even less effective impact than handwriting in terms of students' writing skills?

Previous studies have shown that these changes are not without consequences. (Saputra et al., 2023) noted that during the COVID-19 pandemic, students' writing activities tended to decline, both in terms of frequency and quality. This is due to various factors, such as difficulty in expressing ideas in writing, poor spelling skills, and low fine motor skills that support handwriting. Although typing offers advantages in terms of speed and efficiency, the use of digital media does not necessarily improve the depth of thinking or the quality of students' writing structure.

The problem of declining writing skills is also reflected in Indonesia's low scores on international assessments such as the Programme for International Student Assessment. (Yusmar & Fadilah, 2023) state that Indonesia ranks 74th out of 79 countries in reading literacy, and this result remains stagnant even in a 2022 study (Hidayat, 2022). This problem indicates a literacy crisis that requires serious attention in the education system, as well as the need to evaluate the influence of handwriting and typing methods on students' writing skills. This research is expected to help teachers understand the advantages and disadvantages of each method and design more effective writing learning strategies that are tailored to student characteristics. This research is also expected to contribute to the development of writing learning theory at the elementary education level and serve as a basis for policymakers in determining the most optimal literacy learning approach in the digital era.

2. METHODS

This study uses a quantitative approach with a pre-experimental research design that aims to analyze the effect of handwriting and typing on students' writing skills. This study also uses a post-test only design, which divides students into two writing groups, namely the handwriting group and the typing group. Both groups were only given one test without a pre-test, making it possible to see the direct effect of the two writing methods on students' writing skills.

The research population consisted of all 87 fifth-grade students at SDIT Al-Hikmah, divided into four classes: V Al-Qadir, V Al-Aziz, V Al-Karim, and V Al-Jalil. The sampling technique used stratified random sampling, which is random selection of samples in proportion to the composition of each stratum. In this study, strata were determined based on class divisions. The researchers selected two strata, namely class V Al-Jalil and V Al-Qadir, considering the availability of time and ease of coordination in conducting the study. These classes had the same number of students (22 students each), and the characteristics of the students were considered representative of the entire fifth-grade population. From the stratification results, the sample was randomly divided into two treatment groups, namely a handwriting group of 22 students and a typing group of 22 students.

Data collection techniques were carried out through writing skill tests and observation sheets. Writing skill tests were used to measure the quality of students' writing based on two writing methods (handwriting and typing). The test instruments referred to aspects of writing skill assessment such as sentence structure, grammar usage, coherence, and cohesion in sentences. In addition, observation sheets were used to record students' behavior and techniques during the writing process. In the handwriting group, observations covered aspects of writing instrument readiness, body position, pencil grip, and neatness and consistency of writing. Meanwhile, in the typing group, observations focused on keyboard layout mastery, finger and hand position, as well as typing accuracy and speed.

3. RESULTS AND DISCUSSION

3.1 RESULTS

The results of the study are in the form of data on students' writing skills obtained through writing tests on the use of sentence structure, grammar, coherence, and cohesion in sentences, as well as observations of the behavior or strategies used by students during the test, both in the handwriting group and the typing group.

3.1.1 The Effect of Handwriting on the Writing Skills of Fifth Grade Students at SDIT Al-Hikmah

The results of the descriptive analysis show the effect of handwriting on the writing skills of fifth-grade students at SDIT Al-Hikmah, with the following writing skill scores.

Table 1 Handwriting Group Test Results
Descriptives

		Statistic	Std. Error
Handwriting	Mean	82.55	1.97
	Median	83	
	Mode	83	
	Std. Deviation	9.24	
	Minimum	67	
	Maximum	100	

Source: Data Analysis Results (Siska Herawati: 2025)

The data from the analysis of the writing skills of fifth-grade students at SDIT Al-Hikmah in the table above shows high overall achievement. Of the 22 students who took the descriptive writing test, the average score was 82.55, with the highest score being 100 and the lowest being 67. Meanwhile, the most common score obtained by students was 83, and the standard deviation that helps to understand the consistency of the data distribution from the average obtained by students was 9.24. The smaller the standard deviation, the more consistent the writing skills results among students in that group.

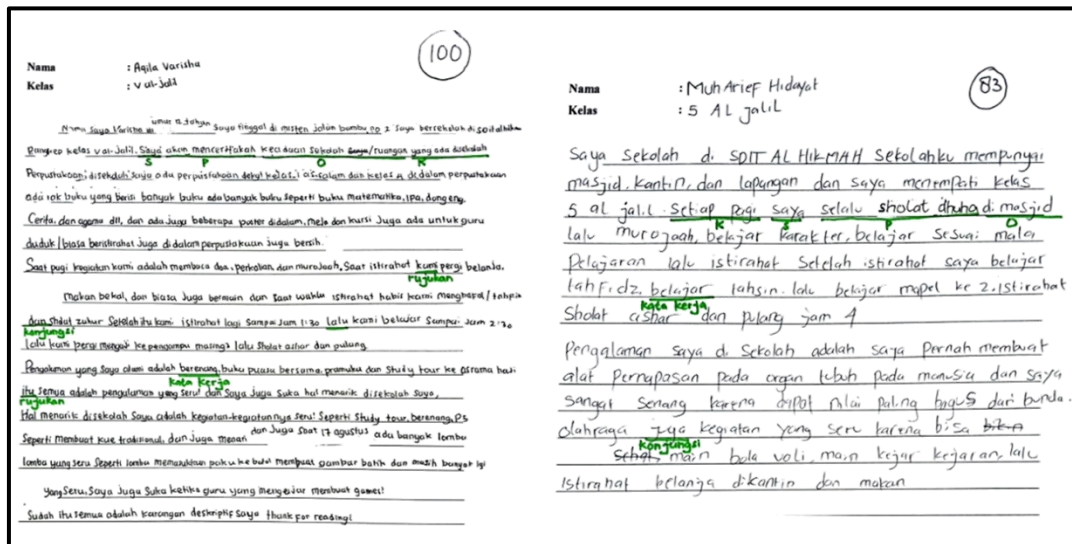


Figure 1. Research Results (Siska Herawati: 2025).

The image above shows the results of the handwriting group's writing skills test. Aqila Varisha scored 100 with the correct use of sentence structure in the form of a complete subject, predicate, object, and description, the use of grammar (spelling, verbs, and punctuation), continuity of ideas and consistency of topics in sentences (coherence), and cohesion between sentences with the use of conjunctions and reference words (cohesion). Meanwhile, Muhammad Arief Hidayat scored 83 with the correct use of sentence structure (subject, predicate, object, and complement), correct use of grammar such as spelling and verbs, but with errors in punctuation, continuity of ideas and consistency of topics in sentences, and use of conjunctions.

Table 2. Distribution of Handwriting Test Results

Value Range	Category	Frequency	Percentage
81-100	Very good	14	64%
61-80	Good	8	36%
41-60	Fair	0	0%
21-40	Poor	0	0%
0-20	Very poor	0	0%
Amount		22	100%

Source: Data Analysis Results (Siska Herawati: 2025)

The results of the writing skills test in the table above show that the handwriting method has a positive effect on the development of writing skills. Most students obtained excellent scores with a percentage of 64%, while the remaining 36% were in the good category. The texts produced by the handwriting group used complete and coherent sentence structures, correct spelling and punctuation, and maintained good cohesion and coherence between sentences. Many students were able to develop their main ideas into complete paragraphs with a wider variety of vocabulary. The ideas presented were coherent and in-depth, reflecting a high level of engagement during the writing process. Based on these analysis results, it can be concluded that handwriting has an influence on the writing skills of fifth-grade students at SDIT Al-Hikmah.

Observations during the test also supported the results of the analysis. Most students showed good preparation, from the position of their desks and chairs, the arrangement of their paper or notebooks, to the selection of appropriate writing instruments. In addition, the majority of students sat with their bodies upright, shoulders relaxed, and heads in a balanced position, and held their pencils correctly. Their handwriting, although varying in neatness, was generally legible and reflected good fine motor control. The observation sheets showed that the handwriting method allowed students to pause, think, and correct themselves before continuing to write. This allowed ideas to develop more fully. In many cases, the sentences composed by students in this group are more complex, with the appropriate use of conjunctions and reference words to create coherence between sentences. In general, the handwriting method encourages students to interact more deeply with the content of their writing, thinking about structure and meaning simultaneously, and maintaining overall quality.

Hypothesis testing also shows that the significance value of handwriting and typing skills is less than 0.05, which means that the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, it can be concluded that the handwriting method has an effect on the writing skills of fifth-grade students at SDIT Al-Hikmah. This can be seen from the average writing skill test scores, assessment categories, and observation results that show involvement and attention to writing structure.

3.1.2 The Effect of Typing on the Writing Skills of Fifth Grade Students at SDIT Al-Hikmah

The results of the descriptive analysis show the effect of typing on the writing skills of fifth-grade students at SDIT Al-Hikmah, with the following writing skill scores.

Table 3. Group Typing Test Results

		Descriptives	
		Statistic	Std. Error
Typing	Mean	70.14	1.95
	Median	71	
	Mode	75	
	Std. Deviation	9.18	
	Minimum	50	
	Maximum	92	

Source: Data Analysis Results (Siska Herawati: 2025)

The data from the analysis of the writing skills of fifth-grade students at SDIT Al-Hikmah in the table above shows high achievement. Of the 22 students who wrote using digital devices, the average score obtained was 70.14, with the highest score being 92 and the lowest score being 50. Meanwhile, the most common score obtained by students was 75, and the standard deviation that helps to understand the consistency of the data distribution from the average obtained by students was 9.18. The smaller the standard deviation, the more consistent the writing skills results between students in that group.

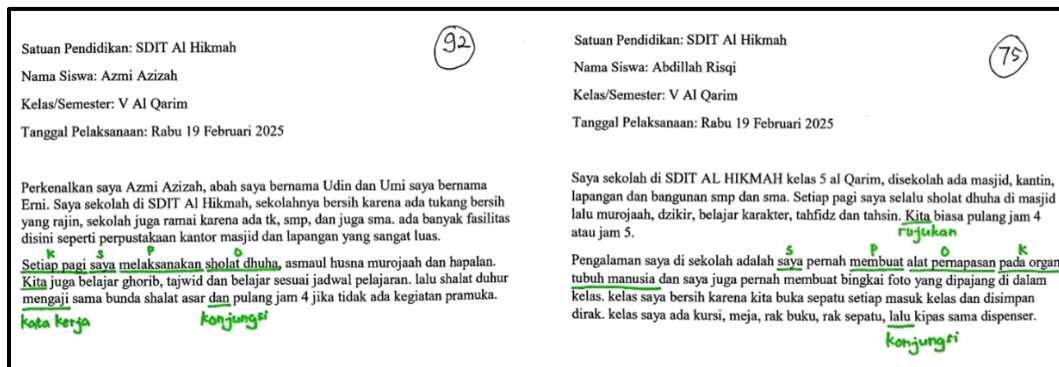


Figure 2. Research Results (Siska Herawati: 2025)

The image above shows the results of the typing group's writing skills test. Azmi Azizah scored 92 with the correct use of sentence structure in the form of a complete subject, predicate, object, and description, the correct use of grammar such as spelling and verbs but with errors in punctuation, continuity of ideas and consistency of topics in sentences, and coherence between sentences with the use of conjunctions and reference words. Meanwhile, Abdillah Risqi scored 75 with the correct use of sentence structure (subject, predicate, object, and complement), correct use of grammar such as spelling and verbs, but errors in punctuation, ideas that were focused but not coherent, and the use of conjunctions and pronouns in sentences.

Tabel 4. Distribution of Typing Test Results

Value Range	Category	Frequency	Percentage
81-100	Very good	3	14%
61-80	Good	15	68%
41-60	Fair	4	18%
21-40	Poor	0	0%

0-20	Very poor	0	0%
	Amount	22	100%

Source: Data Analysis Results (Siska Herawati: 2025)

The test results in Table 3 above show that the typing method also had a positive effect on writing skill development, although it was lower than the handwriting method. Most students obtained good scores, with 68% in the good category, 14% in the very good category, and 18% in the fair category. The texts produced by the typing group were neater, more uniform, and had good readability. However, in terms of content and depth of writing, the texts were short, with underdeveloped main ideas and relatively simple sentence structures. The sentence structures were not as complex as those of the handwriting group, and the coherence between sentences was not always maintained. This shows that although typing makes it easier to compose texts technically, students have not fully utilized the efficiency of typing to develop the content of their writing in depth. Based on the results of this analysis, it can be concluded that typing has an influence on the writing skills of fifth-grade students at SDIT Al-Hikmah. Typing can help students in terms of writing speed and editing, but it does not encourage depth of idea processing and writing structure.

Observations during the test also supported the test results. Most students understood the keyboard layout and the use of basic keys such as enter, backspace, and shift, but only a few students applied the ten-finger typing technique. Typing speed also varied, with some students not reaching the minimum speed of 15 words per minute and still showing many pauses while typing, especially when searching for certain letters on the keyboard. Another aspect observed was the tendency of students to focus on completing tasks quickly, but pay less attention to punctuation and spelling. This affected the clarity of the meaning of sentences and the integrity of ideas. Some students also appear to lack revision or editing of their writing before submission. In general, the typing method facilitates efficiency and good technical presentation, but it does not sufficiently encourage deep thinking and optimal development of writing structure.

Hypothesis testing also shows that the significance value of the typing group's writing skills is less than the significance level of 0.05, which means that the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, it can be concluded that the typing method has an effect on the writing skills of fifth-grade students at SDIT Al-Hikmah. This can be seen from the average writing skills test scores, assessment categories, and observation results during the implementation of the activity.

3.2 DISCUSSION

3.2.1 The Effect of Handwriting on the Writing Skills of Fifth Grade Students at SDIT Al-Hikmah

The results of the study indicate that the handwriting method has an effect on the writing skills of fifth-grade students at SDIT Al-Hikmah. The group of students who wrote by hand obtained excellent scores and demonstrated more structured writing, more detailed idea development, and a more varied vocabulary. These findings directly answer the research question that the writing method used by students has an impact on their ability to write texts, especially descriptive texts.

These findings were obtained through a data collection process involving two main instruments, namely a writing test and an observation sheet. The test was used to assess the quality of students' writing based on four indicators, namely sentence structure, grammar, coherence, and cohesion. Meanwhile, the observation sheet was used to record students' behavior during the writing process.



Figure 3. Research Results (Siska Herawati: 2025)

The test results show that the writing produced by students in the handwriting group is more structured, with appropriate sentence structure, spelling and punctuation, as well as coherence and cohesion in sentences. Students who write by hand also demonstrate correct sitting posture and pencil grip, as well as higher concentration in developing ideas into complete paragraphs. This process indicates that handwriting facilitates simultaneous motor and cognitive engagement.

The interpretation of these results leads to the understanding that handwriting is not only a physical activity, but also triggers reflective processing and in-depth organization of ideas. These results support the findings (Mahardika & Utami, 2024) that refer to Mueller and Oppenheimer's study that writing encourages deeper information processing. The activity of handwriting involves fine motor movements and manual organization of ideas, activating the part of the brain responsible for information retention, reflection, and understanding meaning. These results are also reinforced by the cognitivism approach to language learning, which states that language skills develop through active engagement between the mind, body, and learning environment. Thus, the physical process of handwriting becomes an integral part of memory strengthening and meaning construction during writing activities.

These findings provide new insights that in the context of teaching writing skills at the elementary school level, the handwriting method still plays an important role as a foundation for thinking and language structure formation. In addition to confirming existing theories, the results of this study also propose a new idea that the effectiveness of writing methods is not only determined by time efficiency or practicality, but mainly by the ability of these methods to encourage reflective thinking and the formation of clear idea structures. Therefore, the pedagogical approach to writing instruction needs to be redesigned so that it does not merely adapt to technological developments, but is also rooted in the basic principles of developing language skills in a more holistic and in-depth manner.

3.2.2 The Effect of Typing on the Writing Skills of Fifth Grade Students at SDIT Al-Hikmah

The results of the study indicate that typing methods have an effect on the writing skills of fifth-grade students at SDIT Al-Hikmah. The group of students who typed scored lower than the group who wrote by hand. This group produced more uniform and neat writing, but tended to be brief and simple. These findings directly answer the research question that typing methods encourage speed and neatness in writing but are lacking in terms of idea processing and writing structure.

These findings were obtained through a data collection process involving two main instruments, namely a writing test and an observation sheet. The test was used to assess the quality of students' writing

students can develop their writing skills in a balanced manner in terms of both content and technical writing.

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