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Article

Student work preferences: Typing or handwriting in the digital era

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SUMMARY

As technology advances, many products are invented, including various electronic devices. The invention of smartphones, tablets, and computers has changed the ways students act while performing different tasks at school. For example, some students have started to use laptops to make slideshows for presentations, replacing handwritten posters. However, the decision to do things digitally or by hand depends on different students' habits. We hypothesized that most students would prefer typing over handwriting when completing academic work. To test this, we conducted a survey of secondary students at Hsinchu International School, asking them about their preferences on digital work, handwritten work, or neither. Our results showed that a majority of students preferred typing their assignments. We believe this preference may be due to the convenience, speed, and ease of editing that typing allows. Although more research is needed to better understand the underlying reasons for their choices, the responses suggest that typing academic work digitally is generally preferred among students.

INTRODUCTION

The rapid evolution of technology has transformed the way individuals engage in various activities, particularly in communication and written expression. The prevalence of digital devices has established typing proficiency as an essential skill in educational institutions and professional workplaces (1). The ongoing debate surrounding the preference for typing or handwriting has become a focal point for educators, psychologists, and researchers (2). Discussions surrounding this topic have examined the neurological, educational, and developmental implications of each method.

A growing body of research has explored the cognitive and functional impacts of writing formats. Handwriting has been shown to improve several cognitive skills such as memory retention, spatial reasoning, and critical thinking (3,4). Writing by hand activates brain regions related to working memory and long-term encoding, supporting more effective learning outcomes. For instance, studies involving preschool children demonstrated that handwriting training was more effective than typing in developing reading and writing abilities (5,6). However, other research emphasizes the efficiency and accessibility of typing, especially for individuals who face challenges with handwriting (7). One study, for example, found that writing performance (i.e., the clarity, organization, and content of written output) was similar after both handwriting and typing training, though the intensity of training and participant characteristics played a role in performance outcomes (5).

This discussion continues at higher academic levels. A 2010 study investigating university essay writing revealed that differences in script format—whether typed or handwritten—did not significantly impact assessment outcomes, although variation between markers remained substantial (8). Additional research has further probed the influence of format choice on revision practices and student confidence, suggesting that context and preference can both affect written performance (8,9).

The debate over whether typing or handwriting is more effective has led to interest in how generational and institutional trends influence writing preferences. Research has shown divergent generational trends for writing versus typing, possibly reflecting broader societal shifts (10). For example, daily observations at Hsinchu International School suggest that older teachers (aged over 60) prefer handwritten assignments, while their younger counterparts (aged 20–30) tend to favor digital documentation. This generational shift underscores the transformative impact of time on decision-making processes and emphasizes the need for a comprehensive understanding of contemporary writing practices (11).

In the midst of this ongoing debate—where some critics argue that typing is more efficient and accessible, while others emphasize the cognitive advantages of handwriting—we aimed to unravel the complex factors influencing secondary students' preferences. We focused on students at Hsinchu International School and hypothesized that a majority would prefer typing when completing academic work. We conducted a survey of 60 students, asking about their preferences for writing format. Our results indicated that students prefer to type rather than handwrite for assignments, aligning with our hypothesis. Our study contributes to the broader understanding of contemporary writing practices and explores implications for educational and professional settings in the digital age.

RESULTS

A total of 60 students from different grade levels (7 to 12) responded to the survey, indicating both their preferred method for completing academic work and their current grade level **(Figure 1)**. Thirty-nine students chose typing, 16 chose no preference, and only 5 chose writing **(Figure 2)**. Students are significantly more likely to prefer typing compared to handwriting ($X^2 = 30.1$, $p \leq 0.001$). This outcome indicates a significant difference from an equal distribution of responses, highlighting a strong, preferential relationship among

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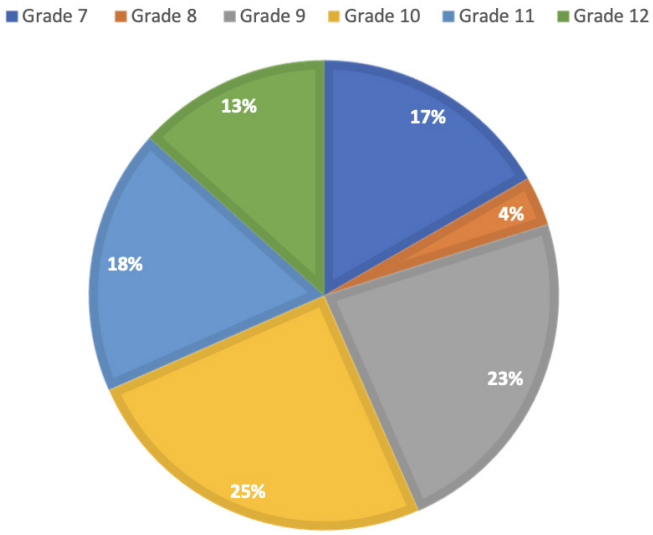

Figure 1: Grade distribution of the participants. Percentage of participants from each grade that filled out the survey. Survey forms were sent to the secondary students at Hsinchu International School to collect data. Sample sizes are as follows: grade 7 (dark blue, n =10); grade 8 (orange, n = 2); grade 9 (grey, n = 14); grade 10 (yellow, n = 15); grade 11 (light blue, n = 11); grade 12 (green, n = 8).

response categories and affirming a predominant inclination towards typing academic work.

Further analysis by grade level revealed that preferences for typing were especially pronounced in grades 9 through 12, whereas students in grades 7 and 8 demonstrated a more neutral distribution across the three categories. Through statistical calculations, around 76% of the students in grades 9-12 preferred typing, while only around 42% of the students in grades 7-8 preferred typing **(Table 1)**.

To complement these student responses, a follow-up survey was conducted with instructors at Hsinchu International School. All the instructors were asked in which grade they observed a preference shift in students' way of completing work and potential factors that they believed contributed to the shift. In the 11 teachers sampled, the majority of teachers (n=8) reported that their students began to strongly prefer digital typing starting around grade 9 and the rest reported grade 10, which are both high school grade levels **(Table 2)**. Teachers attributed this shift to the increasing academic demands in high school – such as heavier workloads and more extensive written assignments – which they believed motivated students to adopt more efficient, time-saving methods like typing. This external validation supports the trends found in the student survey data and adds an institutional perspective to the observed preferences.

DISCUSSION

The findings of our study shed light on the prevalent preferences of secondary students at Hsinchu International School regarding the mode of completing their work, whether by typing digitally or writing by hand. The significant preference for typing over handwriting or having no preference, as indicated by the survey results, prompts a thoughtful exploration into the potential factors influencing this choice.

Several factors may contribute to the strong preference for typing observed in the study. The benefits associated with typing, such as decreased fatigue, increased speed, efficiency, improved accuracy in editing and corrections, easy copying and duplication, and enhanced searchability, align with the preferences expressed by the participants (12). These advantages might particularly resonate with high school students, who face heavier workloads and time constraints. However, these are just potential reasons supported by existing literature and should be treated as informed inferences (13-15).

Another possible factor influencing this preference is the expectations of instructors. A simple follow-up survey conducted with teachers revealed that most instructors noticed students begin to prefer digital typing around grade 9. The teachers expected this result and believed that this shift may be driven by the heavier workloads and more tedious assignments that encourage students to adopt more efficient, time-saving methods. This aligns with the original survey data, where students in grades 9 through 12 showed the strongest preference for typing, while younger students in grades 7 and 8 were more evenly distributed across the categories. The heavier workloads for high school students motivate them to seek more efficient ways to complete their work; therefore, typing is a good option that satisfies their needs.

However, it is essential to acknowledge the limitations of the study. Besides the ubiquitous limitation that more data could be collected for analysis, the biggest limitation of this study is that there were only two questions asked in the survey. Through daily observations, students are busy with their workloads and are not likely to spend time on responding to long survey forms (especially during their spare time). Thus, the survey form was intentionally kept short to increase participants' willingness to respond and gather more responses. Nevertheless, the lack of a diverse set of questions exploring the nuances of participants' preferences and the absence of demographic information further restrict the depth of the analysis. Therefore, future studies are highly encouraged to expand the scope to include demographic questions (e.g., typing proficiency, access to digital devices,

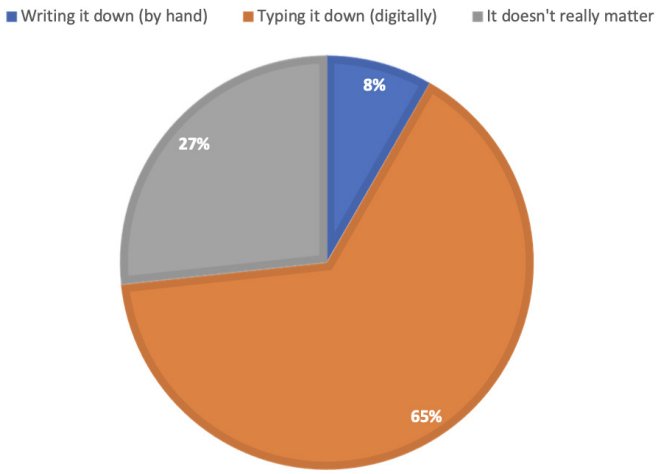

Figure 2: Response distribution for preferences between writing or typing in the secondary department of Hsinchu International School. Percentage of participants preferring writing (blue; n = 5), typing (orange; n = 39), or neither (grey; n =16). Survey forms with the question, "Do you prefer typing your work digitally or writing your work by hand?" were sent to the secondary students at Hsinchu International School to collect data.

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	Grade					
Preferences	**7**	**8**	**9**	**10**	**11**	**12**
Type it down digitally	4	1	8	11	8	7
Write it down by hand	0	0	2	1	2	0
It doesn't matter	6	1	4	3	1	1
Total responses	10	2	14	15	11	8

Table 1: Writing or typing preferences by grade. Number of people preferring typing, writing, or neither in each grade are shown (n = 60). Survey responses were gathered through sending out google forms.

and previous exposure to digital learning tools) and more nuanced questions about the reasons behind student preferences.

In conclusion, this study offers a compelling snapshot of the preferences of Hsinchu International School secondary students for typing over writing. The clear trend towards digital methods for completing assignments underscores the importance of considering technological advancements and changing habits in educational settings. While the results provide valuable insights, future research with a larger and more diverse sample, as well as a more comprehensive set of questions, is warranted to further validate and extend these findings.

MATERIALS AND METHODS

To investigate student preferences for completing academic work digitally or by hand, we designed a concise survey and distributed it to students in the secondary department (ages 12–18) at Hsinchu International School. The survey asked, "Do you prefer typing your work digitally or writing your work by hand?" with three response options: 1) typing, 2) writing by hand, 3) no preference. We administered the survey via Google Forms through the school-wide Jupiter platform **(Appendix 1)**. Responses were anonymous, and we only collected grade level for stratification.

All students at Hsinchu International School are equipped with digital devices for schoolwork and communications, and both handwritten and digital submissions are typically accepted. This ensures that the responses reflect genuine student preferences rather than institutional constraints.

Out of 115 eligible students, 60 responded to the survey. In addition, we distributed a follow-up survey to the school's 11 instructors, asking at which grade level they observed students beginning to prefer typing. We performed a chi-squared test analyzing the student survey responses to determine if student preferences were statistically significant. As a whole, we compared student-reported preferences across grade levels with teacher observations to identify potential shifts in typing preference with age.

Grade level (students start preferring digital work)	Number of instructors who observed a preference shift
Grade 7	0
Grade 8	0
Grade 9	8
Grade 10	3
Grade 11	0
Grade 12	0

Table 2: Follow-up instructor survey results. Results of the follow-up instructor survey. In this survey, instructors (teaching several fields of study) from Hsinchu International School were surveyed about when (at which grade level) they observed a specific shift in students' preference for typing assignments digitally (n = 11). Reponses were collected through one-on-one interviews with every instructor.

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APPENDIX

The attached is the survey distributed to students during the data collection process for the experiment.

Do you prefer typing your work digitally or writing your work by hand?

This survey is used to collect data for a research paper. Your names and information won't be recorded/included as part of the survey.

1. Please choose from the following: (work could be essay, notes, worksheets, reseach paper, poster and slideshow for presentation...etc)

Mark only one oval.

- ◯ Writing it down (by hand)
- ◯ Typing it down (digitally)
- ◯ It doesn't really matter.

2. Which grade are you in?

Mark only one oval.

- ◯ Grade 7
- ◯ Grade 8
- ◯ Grade 9
- ◯ Grade 10
- ◯ Grade 11
- ◯ Grade 12

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