

The Impact of Technology on EFL Learners' Writing Skills at University of Duhok: A Quasi-Experiment

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ABSTRACT: The impact of technology on EFL learners' writing skills is a significant topic in the present time that examines how digital tools like word processors and language apps affect language learning and writing processes. Technology offers benefits, such as improved language skills and instant feedback; it also presents challenges such as overreliance on technological tools and the potential loss of original thoughts and ideas. Therefore, this study aims to investigate the positive and negative effects of technology on writing skills by analyzing the data collected through a quasi-experiment. The sample consisted of 23 students from third year at the English Department, College of Basic Education, Duhok University, who took part in this study willingly, before and after using technological tools such as Grammarly for two weeks via a writing test. In the end, the findings of this paper reveal that technology has a positive impact on students' overall writing performance.

Keywords: Technology, EFL, Writing skills, Technological tools.

1. Introduction

Technology has become a significant part of language learning and teaching; in today's world, the quick progression of technological tools and online platforms has drastically transformed the development of writing skills. Technological tools offer more effective learning experiences by changing traditional teaching methods and granting language learners easier access to educational materials (Ahmadi, 2018, p.121). Additionally, Keser and Özdamli (2012) state that this shift in teaching methods has significantly altered the landscape of English instruction. Technology integration, defined as the utilization of technological resources to support and enhance the language learning process, promotes learner cooperation, which is essential for effective learning. Learners can collaborate and engage with one another through technology tools, exchanging ideas, providing feedback, and improving their writing skills (p.158). Moreover, EFL writing process was drastically changed by technology from being paper-based to online, this change was also spread to the development of cognitive strategies in writing (Cancino and Panes, 2021, p.18). Faisal and Carabella (2023) further clarify that learners now have access to a wide range of digital writing tools, such as grammar and spell-checking applications, online dictionaries, and collaborative writing platforms. These resources aid in refining writing skills and producing more polished and accurate compositions. The two authors also argued that the use of technology for academic purposes has prompted students to become proficient in utilizing technology tools for their English writing, resulting in increased proficiency (p.29). Students recognize the value of technology tools in improving their English writing experience, enabling them to easily edit their work, cooperate with their peers, and receive feedback (Kurniati and Fithriani, 2022, p. 441). On the whole, it can be inferred that the integration of technology in language learning has caused drastic changes to emerge in the development of writing skills. It has replaced traditional teaching methods, provided more effective learning experiences and easier access to educational resources. Using technology with interactive learning activities encourages further learner cooperation inside classrooms.

1.1. Problem Statement

The research on whether technological tools are effective in motivating and improving the writing skills of EFL learners is insufficient. Furthermore, there is a gap in knowledge regarding the impact of technological tools on EFL learners' writing abilities. Thus, additional research is much needed to explore the potential of these tools and their influence on EFL students' writing skills at the English Department of University of Duhok.

1.2. Aims of the Research

The main aim of this research is to investigate the impact of technology on EFL learners' writing skills, exploring both the positive and negative effects along with the potential drawbacks that learners and teachers encounter. Particularly, the study seeks to examine how the use of technological tools influences learners' writing and to explore the engagement of learners in using mobile apps for writing practice.

1.3. Significance of the Study

The research on the impact of technology on EFL writing skills is important because it addresses a gap in knowledge and enhances language learning practices. By exploring both the positive and negative effects of technology, the research informs pedagogical approaches and empowers EFL learners to utilize technology effectively. The findings can guide policy and curriculum development, ultimately improving language education.

2. Literature review

2.1. The Positive Impact of Technology on EFL Learners Writing Skills

A considerable amount of previous research studies have shown that the use of mobile phones, and AI, in particular ; and the use of technology , in general, in the classroom have a positive impact on education. Take for example, Siddique's study (2015) showed that it is more convenient to learners to input text on mobile devices than to write with a pen, as it allows them to easily edit and revise their work. Furthermore, according to Huang and Chi (2017), mobile devices made it easier for learners to access a wide range of information that help them to download materials for essay topics and get involved in their own learning process.

In (2019), Jassim and Dzakaria conducted a case study at the University of Baghdad where an English teacher used mobile devices to teach English writing skills to 40 male students within a 6-week period. The students collaboratively worked using mobile phones to download and discuss materials. Continuous support and feedback were given to students through text messages. The results of the study revealed that the students were more engaged in comparison to traditional teaching methods. Even though the learners made some mistakes in their essays, they were eager to revise and strengthen their writing, benefiting from improved mechanics, sentence structure, spellings, supporting details, and overall writing organization on their mobiles.

Zulfa et al. (2023) conducted a research paper to investigate the use of AI and technology tools in developing English academic writing skills. 73 participants filled out questionnaires and 11 participated in follow-up interviews. The findings of the research showed that integrating technology tools, in particular, Grammarly and QuillBot, that provide feedback and corrections, resulted in enhancing the academic writing skills of the learners. Similar studies by Khabib (2022) and Fitria (2023) obtained the same results that AI-based technology in the writing process has shown positive influence on students' writing skills. These tools can aid students in identifying plagiarism in academic writing, as well as help them in adjusting their English writing to particular styles.

Regarding the impact of technology inside the classroom on the learners' motivation, Ellis (1994), Zengin (2007), and İlter 's (2009) all agree and emphasize the importance of integrating technology in EFL classrooms, because students' motivation and engagement greatly increase in multimedia and technological lessons. creating challenging tasks and activities to motivate learners inside the class.

2.2. The Negative Impact of Technology on EFL Learners Writing Skills

Despite the tremendous positive influence that technology has on EFL learners' writing skills, it is equally important to acknowledge the potential drawbacks and challenges linked with its use. One of the major concerns is that students might become heavily dependent on technology tools, take for example, spell and grammar checkers, without entirely comprehending the complexities of writing (Purcell et al , 2013). The author continues to argue that when students rely on these tools, they are more likely to take shortcuts and neglect the significance of spelling, grammar, and sentence structure, assuming that technology will deal with these aspects on their behalf. Nevertheless, if students lack a fundamental understanding of the writing process, these technological tools can in fact, obstruct their progress and cause misunderstandings.

Alhusban (2016) investigated the influence of today's technological tools on learners' writing skills. The study classified the writing assignments of college students into two kinds: free and formal writings. 100

writing assignments were collected and analyzed for grammar, vocabulary, spelling, punctuation, and style. The main aim was to detect differences in mistakes between formal and informal writing styles which are mostly affected by learners' extensive reliance on technology. The results showed that technology is indeed changing how students write and impacting their writing skills. Students are inclined to depend on technology to correct mistakes, and use more abbreviations and have less regard for grammar. The widespread of text messaging has caused students to be more inclined to use shortcuts and rely on predictive text. This suggests that it is important for students to develop a good comprehension of informal and formal styles of writing before focusing on advanced writing skills.

2.3. Technological Tools

Learners and teachers can benefit from a variety of digital devices, applications, and online platforms that today's technology has to offer, take for instance, word processors, writing platforms, digital storytelling tools, and citation management software that all aid in writing, revising, editing as well as publishing written work (Alkhaldi, 2023).

Kademi (2021) conducted a study on the influence of technology (word processor) on EFL learners' writing skills in Saudi Arabia. In his study 74 participants were selected and divided into two groups, an experimental and control group. The experimental group learnt writing using word processor and the control group learnt writing using the traditional method which was paper-based. After a period of two weeks, a writing test was conducted. The findings of the study revealed that the experimental group that depended on word processor achieved a higher score in their writing tests than the control group that used the traditional method.

Shams-Abadi et al. (2015) investigated the impact of Edmodo as an online platform on EFL learners' writing skills. The study consisted of 40 female students who attended advanced writing classes, they were divided into two groups, a control and an experimental group. The experimental group used Edmodo to upload their assignments, exchange meaning and feedback with peers, and communicate with the teacher, but the control group submitted assignments in the classroom. The two groups used similar course materials which concentrated on writing for more than 12 sessions. During these writing sessions, the learners composed different types of paragraphs. The findings of the study revealed that the experimental group that used Edmodo as an online tool, showed higher writing performance compared to the control group. The study further emphasized the positive influence of cooperative learning and social interaction in promoting learners' interests and their language development. Moreover, the study stressed the role of technology in promoting global communication and supporting language proficiency.

In (2018), Wahyudin and Sari carried out a study on the impact of Instagram on learners' writing. The study comprised 82 first-semester undergraduate students who were divided into an experimental and control group. These learners had no prior English courses outside of class. The experimental group depended on Instagram for online learning and peer feedback to develop their writing. Then, their writing was analyzed through a scoring criterion as well as statistical tests that were conducted. The results of the study suggested that the group that used Instagram exhibited better writing performance. The study further indicates that Instagram can be a great tool for teaching writing outside the traditional classroom setting. However, further research with a larger sample size is required to validate the findings of this study.

3. Methodology

3.1 Population and Sample of the Study

The sample for this study comprised 23 third-year students (21 females and 2 males) from the English Department of the College of Basic Education at University of Duhok. The age range of the participants was between 19 and 21, and their English proficiency levels were classified as intermediate to upper intermediate. The researcher was not able to increase the number of the students because not many were willing to participate, therefore, this was a major limitation of this research paper. It is worth mentioning that all of the students that took part consented to take the tests willingly and were not forced to stay or prevented from leaving at any time throughout the tests.

3.2 Procedure and Data Collection

The data for this study were gathered using a quasi-Experiment design, which was selected because it aligns with the objectives of the research, on how technology can affect students' writing skills. The students were asked to write a paragraph (See Appendix A). In order to assess learners' initial writing skills, a 20-minute pre-test was carried out on April 11, 2024. The pre-test followed a traditional approach, with students using pen and paper only.

After the pre-test, the students were provided with writing tools such as Grammarly and instructed to practice writing for two weeks. These tools were intended to assist them in improving their writing abilities.

Two weeks later, on April 25, 2024, the same students were asked to rewrite the same paragraph within the same time duration. This time, they were allowed to use the provided tools to aid them in their writing process (See Appendix A).

In both pre-test and post-test phases, the researcher was physically present in the classroom during data collection along with the teacher (responsible for the class) both facilitated and conducted the data collection method. This approach guaranteed to a good degree that data collection was conducted by the presence of an individual who had familiarity with the students, therefore, the classroom environment remained stress-free. The names were then coded in an attempt to maintain consistency and minimize potential researcher bias during the data analysis process.

3.3 The Assessment Instrument

This study aims to assess the writing skills of the EFL students by employing a writing analytical scoring scale adapted from Mohammed's (2019) who states that implementing a standardized assessment scale helps to increase the reliability of tests. The scale consists of 10 criteria and provides a comprehensive evaluation of multiple aspects of writing. The overall score on the scale is measured on a scale of 0 to 100, offering a quantitative measure of the students' writing performance.

Table 1: EFL writing skills assessment rubric

	Writing Items	Points
1.	Content	10
2.	Spelling	10
3.	Punctuation	10
4.	Capitalization	10
5.	Grammar	10
6.	Vocabulary	10
7.	Organization	10
8.	Creativity	10
9.	Linking Words	10
10.	Details & Examples	10

4. Findings and Discussion

The results of the writing test conducted prior to implementing the technological tools are presented in the below table.

Table 2: Students' writing pre-test results

Student	Content	Spelling	Punctuation	Capitalization	Grammar	Vocabulary	Organization	Creativity	Linking words	Details & examples	
	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	Total
1	6	6	2	5	9	4	2	6	5	7	52
2	8	7	9	9	10	6	8	5	5	7	74
3	9	6	7	7	8	9	7	6	6	9	74
4	8	5	3	3	7	5	4	5	5	5	50
5	5	4	6	6	7	4	6	5	8	5	56
6	6	5	6	6	5	5	4	5	6	5	53
7	4	5	2	2	2	5	5	5	5	5	40
8	6	5	6	6	9	7	8	8	7	8	70
9	4	4	5	5	2	5	5	6	5	5	46
10	4	5	2	2	1	5	4	5	6	6	40
11	5	5	6	6	8	8	5	5	7	5	60
12	5	4	3	2	3	4	4	6	6	5	42
13	6	3	4	4	6	5	5	5	6	4	48
14	5	6	7	7	7	4	7	6	5	4	58
15	5	5	6	4	5	4	3	5	5	3	45
16	4	4	3	4	6	5	4	5	7	5	47
17	7	6	6	6	9	7	6	6	5	6	64
18	5	5	7	8	8	5	8	6	5	5	62
19	7	5	5	5	9	5	6	7	4	5	58
20	4	3	4	2	3	4	4	5	4	6	39
21	5	6	6	6	5	5	5	5	8	5	56
22	5	5	5	5	8	8	7	8	5	5	61
23	6	4	4	6	6	5	7	6	5	4	53
Average	5.6	4.9	5.0	5.0	6.2	5.4	5.4	5.7	5.7	5.4	54.3

Based on the provided table, the average score is 54.3, indicating a significant proportion of students achieved low scores. Notably, their performance in spelling and punctuation was particularly weak, with average scores of 4.9 and 5.0 out of 10, respectively. However, their performance in other areas showed relatively better results. Overall, the students' writing performance was disappointing. The pre-technology implementation results highlighted the challenges the students faced in their writing, particularly in spelling, punctuation, and grammar. These shortcomings are evident in their written work, with common errors including misspelling words such as "most," "their," "advantages," and "disadvantages" as "must," "there," and "advanteges or advantegus,".

Additionally, many of them failed to use any punctuation marks, such as full stops or commas. Even when they do attempt to use punctuation, they often neglect proper capitalization. For example, some students forget to capitalize the first letter after a full stop.

Grammar errors are also prevalent, with an average of 6.2. One common error involves the incorrect usage of verb forms. For instance, students frequently use the plural form of the verb "have" in sentences such as "The impact social media have," instead of the correct singular form "has." Another mistake involves combining modal verbs with the "-ing" form, as shown in the sentence "We can shopping." After utilizing the technological tools for 14 days, the students were then administered a writing test. The researcher evaluated and analyzed the students' writing and recorded the results. Table 3 displays the revised outcomes of the students' writing following the implementation of the technological tools.

Table 3 Students' writing post-test results

Student	Content	Spelling	Punctuation	Capitalization	Grammar	Vocabulary	Organization	Creativity	Linking words	Details & examples	
	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	Total
1	9	10	8	9	10	10	9	9	7	9	90
2	8	7	8	8	10	10	8	9	7	8	83
3	9	9	8	9	10	9	9	8	8	9	88
4	10	10	9	10	10	10	9	10	10	10	98
5	6	5	6	7	6	5	6	4	5	4	54
6	4	7	5	7	7	5	5	7	5	5	57
7	8	7	6	6	7	9	7	8	7	7	72
8	9	9	9	8	10	7	9	8	9	7	85
9	5	10	9	10	9	10	9	10	7	6	85
10	3	6	3	3	3	4	4	4	4	4	38
11	9	7	9	8	10	10	9	8	9	9	88
12	9	9	8	8	9	10	10	10	8	8	89
13	9	10	9	6	10	10	9	9	8	9	89
14	8	10	10	10	10	10	9	10	6	8	91
15	10	8	10	10	9	10	10	9	10	10	96
16	8	10	10	10	9	9	9	10	10	9	94
17	7	10	10	9	9	8	7	7	8	7	82
18	9	10	9	8	10	10	9	10	8	9	92
19	9	10	9	9	10	9	8	9	9	10	92
20	7	9	6	5	7	8	6	6	5	6	65
21	10	10	9	10	10	9	10	9	9	10	96
22	7	7	8	9	8	7	8	7	6	6	73
23	7	8	10	8	9	10	8	8	6	7	81
Average	7.8	8.6	8.2	8.1	8.8	8.7	8.1	8.2	7.4	7.7	81.7

According to Table 3, the majority of students performed exceptionally well, with an overall average score of 81.7. Notably, their spelling and punctuation skills exhibited significant improvement, with scores of 8.6 out of 10 and 8.2 out of 10, respectively. This outstanding performance indicates that the integration of technological tools has positively influenced students' writing abilities. Students relied on dictionaries to find word meanings, while Grammarly played a crucial role in enhancing their grammar skills. Moreover, students demonstrated an expanded vocabulary by incorporating words such as "Fundamental, integral, revolutionized, and profound" into their writing. These findings collectively highlight the impact of technology on students' writing skills, including improved spelling, grammar, and vocabulary, and creativity.

The results of this study are also in line with the studies mentioned in the literature review of this paper (See Siddique 2015, Alhusban 2016, Huang and Chi, 2017, Khabib, 2022, Fitria, 2023, Zulfa et al. 2023). The findings of the study reveal that using technology greatly enhances students' overall writing skills. The average scores of this study rose from 54.3 to 81.7, showing a discernible improvement in each of the 10 writing skills. This further supports the aforementioned studies' findings that technology has a positive effect on vocabulary, grammar, and spelling. However, the studies also recognize the possible risks of relying too much on technology and the importance of establishing a balance between formal and informal writing forms.

5. Conclusions and Recommendations

This research paper examined the impact of technological tools on EFL writing skills since it has proven to be invaluable in developing learners' writing. The data of this study reveal that technology allows learners to minimize spelling, punctuation, and grammar errors while expanding their vocabulary. Grammarly provides great tools that aid in correcting grammar mistakes, punctuation and word meanings. The positive impact that these technological tools have is obvious, because students are able to enhance their language accuracy and their overall writing quality. These tools offer instant

feedback that helps learners to identify areas that need further improvement, in return, this promotes learners desire to develop their writing skills. However, it is important for learners to be cautious of over-reliance on these tools which could have a negative influence on the critical thinking and creativity in learners. It is essential for teachers to strike a balance and encourage students to use technology as a support while promoting independent thinking and a sense of expression among them. In the end, this paper recommends that teachers implement new methods and strategies to enhance students' writing skills, while also emphasizing the importance of not overly relying on technology and encouraging students to use their own imagination. The study also recommends that teachers include technological tools when teaching writing skills to EFL learners to raise learners' awareness more about the positive and negative effects of technology on their writing.

6. References

- [1] Ahmadi,D.M.R. (2018). The use of technology in English language learning: A literature review. *International journal of research in English education*,3(2),115-125.
- [2] Alhusban, A. (2016). The impact of modern technological tools on students writing skills in English as a second language. *US-China Education Review*, 6(7), 438-443.
- [3] Alkhalidi, A. A. (2023). The Impact of Technology on Students' Creative Writing: A Case Study in Jordan. *Theory and Practice in Language Studies*, 13(3), 586-592.
- [4] Cancino, M., & Panes, J. (2021). The impact of Google Translate on L2 writing quality measures: Evidence from Chilean EFL high school learners. *System*, (98).
- [5] Chen, C. M., & Li, Y. L. (2010). Personalised context-aware ubiquitous learning system for supporting effective English vocabulary learning. *Interactive Learning Environments*, 18(4), 341-364.
- [6] Ellis, R. (1994). *The study of second language acquisition*. Oxford, Oxford University Press.
- [7] Faisal, F., & Carabella, P. A. (2023). Utilizing Grammarly in an academic writing process: Higher-education students' perceived views. *Journal of English Language Teaching and Linguistics*, 8(1), 23-42.
- [8] Fitria, T. N. (2023). Artificial intelligence (AI) technology in OpenAI ChatGPT application: A review of ChatGPT in writing English essay. In *ELT Forum: Journal of English Language Teaching*, 12(1), 44-58.
- [9] Huang, Y. M., & Chiu, P. S. (2017). The effectiveness of the meaningful learning-based evaluation for different achieving students in a ubiquitous learning context. *Computers & Education*, 87, 243-253.
- [10] İltar, B. G. (2009). Effect of technology on motivation in EFL classrooms. *Turkish online journal of distance education*, 10(4), 136-158.
- [11] Jassim, L. L., & Dzakiria, H. (2019). The effect of utilizing mobile on developing English writing skill: A case study at University Of Baghdad. *Opcion*, 34(19), 2128-21437.
- [12] Kademi, A. S.(2021). The impact of ICT towards Saudi EFL students' writing skills: A Quasi-Experimental Study. *ELT Worldwide: Journal of English Language Teaching*.8 (2). 206-221.
- [13] Keser, H., & Özdamli, F. (2012). What are the trends in collaborative learning studies in 21st century?. *Procedia-Social and Behavioral Sciences*, 46, 157-161.
- [14] Khabib, S. (2022). Introducing artificial intelligence (AI)-based digital writing assistants for teachers in writing scientific articles. *Teaching English as a Foreign Language Journal*, 1(2), 114-124.
- [15] Kurniati, E. Y., & Fithriani, R. (2022). Post-graduate students' perceptions of Quillbot utilization in English academic writing class. *Journal of English Language Teaching and Linguistics*, 7(3), 437-451.
- [16] Mohammed, F. (2019). Creative writing from theory to practice: Multi-Tasks for developing Majmaah University students' creative writing competence. *Arab World English Journal*, 10(3), 233-249.
- [17] Purcell, K., Buchanan, J., & Friedrich, L. (2013). The impact of digital tools on student writing and how writing is taught in schools. *Washington, DC: Pew Research Center*, 16.
- [18] Shams-Abadi, B. B., Ahmadi, S. D., & Mehrdad, A. G. (2015). The effect of Edmodo on EFL learners' writing performance. *International Journal of Educational Investigations*, 2(2), 88-97.
- [19] Siddique, M., & Madhawa Nair, S. (2015). The effectiveness of using mobile phone in enhancing writing let me skills: Teacher's and students' reflections. *Australian Journal of Basic and Applied Sciences*, 9(37), 390-396.