Improving the Writing Performance of Students Through Wiki-based Collaborative Writing at Addis Ababa Science and Technology University

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Abstract: In the current research setting, students' writing performance deteriorates from time to time. Most of the time, teachers are concerned about these issues. There are currently various online technologies, such as wikis, that can assist students in improving their writing performance. The wiki enhances the discussion process and interactive sharing of ideas, which improves foreign language acquisition. Wiki-based collaborative writing helps students improve their writing skills. Students' perceptions of wikis are an important predictor of wiki-based collaborative writing implementation in this regard. There has been research on the effectiveness of wiki-based collaborative on writing performance and perceptions. The objective of the study was to assess students' perception of using wiki based collaborative writing to improve their writing performance. Using a systematic review, we attempted to summarize the findings of articles related to wiki-based collaborative writing. We selected articles based on the study populations, study design, intervention types, comparison groups, measured outcomes, and publication date. The authors of the articles we analyzed the used tests, questionnaires, and interviews. According to the analyzed data, wiki-based collaborative writing helped students to improve their writing performance. Also, students had a positive attitude about wiki-based collaborative writing. As a result, institutions, teachers, material writers and educational policymakers should open their eyes in integrating technology with the teaching-learning process.

Keywords: Wiki, Collaborative Writing, Wiki-based Collaborative Writing, Writing Performance

1. Introduction

We are English professors at Addis Ababa University. For many years, we have been teaching English as a second language. We began our professional development in a traditional setting, with the emphasis on teachers assisting their students in learning the correct answer and achieving a high level of language proficiency. As Degi remarked, the writing pedagogy of that day in EFL/ESL writing classes included reinforcement, language development, learning style, and most importantly, writing as a skill in its own right [2]. This entailed employing pedagogies that centered on the teachers' teaching rather than the students' learning as the source of success. This method also resulted in exhaustion for both our students and ourselves at the end of each day.

We're not sure what we can do about the situation.

When we were teaching reading skills one day, one of our students kept touching his phone. We distributed the reading materials for the class at the start of class. Then we instructed the students to read the passage on their own. Except for one student, they all began reading. We inquired of the student who was frequently touching his phone. "I'm reading," he explained. We informed him because he was not reading the reading material.

He stated for the second time that he was reading a passage on his phone while connected to the internet. The passage's title referred to the role of the internet in helping students improve their writing skills. That student's performance surprised us. As he explained, the passage he was asked to read was simple and not particularly
challenging or interesting to him. We had no choice but to admire that student’s practice at the time. That was the first movement that compelled us to consider how social media could help us assist our students in improving their language skills, particularly in writing, because their writing skills are lacking. Warschauer discovered that the use of technology is critical in language education programs in general, and writing in particular [13]. Besides Warschauer posed a critical question: “What is the role of language teaching in the information technology society?” [14]. This is still a valid question. According to Warschauer, answering this question can provide new insight into the purpose of learning and teaching the English language for both English language teachers and university students.

The majority of the students’ writing abilities were deplorable. As teachers, we noticed that students’ writing performance was poor enough that they were unable to communicate effectively through writing. While studying basic writing skills, they write for grades rather than considering the long-term impact of the skill on their lives. They were unable to use the skills they gained from the writing course to communicate with different instructors of their major courses through writing assignments, projects, lab reports, and paragraph and essay-type examinations after completing the writing course.

Their major course instructors are always critical of these students’ poor writing performance. How should this issue be resolved? This is an important question that must be addressed.

According to our teaching experience, university students are very attached to technology. This could be an opportunity to assist students in improving their writing skills. Using wiki-based collaborative writing to improve students’ writing performance could be beneficial.

Three reasons drop our inquiries. The first was our desire to help our students to improve our writing skills to communicate effectively through writing. The second reason was to improve our teaching methods. The students were still in a traditional mode of learning passively, waiting to be told and what to do and were unwilling to communicate in writing because of fear of losing face if they made a mistake while they are writing. We seemed to be doing the work for them, rather than enabling them to practice and think themselves.

Third, we could emphasize the experience of students who have poor writing performance because we had that experience at university and had achieved my current position through share hard work and determination. We knew how important using a new method of teaching and learning of writing was for all students to feel cared for by their teacher.

To implement wiki-based collaborative in our writing classes, we wanted to do the followings:

1) Create a friendly, well-disciplined, united and collaborated class spirit.
2) Help students develop confidence in them while they are writing.
3) Encourage them to take more responsibility for their learning writing skills.

We prepared teachers guide and students guide regarding how we and students will use a wiki platform in writing classes. Then we created awareness of how a wiki can help students to improve their writing skills for 50 minutes; besides, we created user name and password for students. The other task that we did was we prepared task schedule and uploaded on the platform that can be displayed for all students. Even though we did all the above tasks, we could not start the implementation because of COVID-19 pandemic. Finally, we decided to use a systematic review approach to collect data about the effect of wiki-based collaborative writing on students writing performance.

We could tutor all students and giving critical comment concerning their writing. We could ask students to write a paragraph before they engage in the wiki-based collaborative writing project. Students could be asked to compare their writing with the previous one from the history button.

As it is mentioned above, due to the absence of students because of COVID-19, we used systematic review by following the following activities step by step.

First we formulated a clear, well-defined research question with appropriate scope. Then, we defined the terminologies from our research questions. Following that, we searched existing reviews on our topic to inform the development of our research question, identify gaps, and confirm that we are not duplicating the efforts of previous reviews.

Our research question was ‘how can we improve the Writing Performance of Engineering Students through Wiki-based Collaborative Writing at Addis Ababa Science and Technology University?’ As it is indicated in the above question, the objective of this review is to improve first-year university students’ writing skill using wiki-based collaborative writing: moreover, we defined the key terms from the above question as follow.

1) Writing Performance: It is to mean the writing performance of students in terms of content, organization, vocabulary, grammar and mechanics.
2) Wiki: Richardson defined wiki as a “collaborative web space where anyone can add content and anyone can edit the content that has already published” (p. 8), but the wiki that will be used in the current study will be a private wiki [7].
3) Wiki Based Collaborative Writing (WBCW): Storch defined it as “the joint production or the co-authoring of a text by two or more writers using wiki technology” [10].

We clearly stated the criteria we would use to determine whether or not the articles would be included in our search. During our search, we considered the study populations, study design, intervention types, comparison groups, measured outcomes. We tried to use some database-supplied limits such as language, dates, level of students, variable types, and publication/study types.

We ran our searches in the databases that we have identified as relevant to our topic. We tried to approach the new literature methodically and purposefully. We collected
all of the retrieved records from each search into the folder on our laptop desktop before the screening. They were around 20 articles which were published between 2010 and 2020.

We started with a title abstract screening to remove studies that are not related to our topic. We used our inclusion/exclusion criteria that we mentioned above to screen the full-text of studies. Finally, nine studies were selected based on population, purpose, publication date, findings and variable types.

We presented the findings of the articles, including detailed methodology (such as search strategies used, selection criteria, findings of the studies) such that our review can be easily updated in the future with new research findings. We provided recommendations for practice and policy-making if sufficient, high-quality evidence exists, or future directions for research to fill existing gaps in knowledge or to strengthen the body of evidence in our context.

2. Analysis of the Collected Articles

In this section, nine articles about wiki-based collaborative writing were analyzed. Here are the articles.

2.1. The Impact of Wiki-based Collaborative Writing on English L2 Learners’ Writing Development

According to Caruso et al., the advantages of group and pair work in the second language (L2) classroom have been extensively researched, but the majority of the documented research has focused on the use of oral tasks and spoken interaction between learners [1]. Most researchers have started to look into the benefits of collaboration on students' written work.

The emergence of computer technology and web-based collaborative platforms, in particular, has raised awareness about the educational potential of wikis for improving L2 writing instruction. The researcher used a pretest/posttest repeated measures design in this study to investigate the impact and perceptions of wiki-based collaborative writing activities on individual writing performance. This study included L2 university students enrolled in a TOEFL preparation course at a large university in Bogota, Colombia.

Students were divided into two groups based on the purpose of the study: the experimental group (n=8) participated in a series of wiki-based collaborative writing activities and focused practice between pre and posttests, while the control group (n=4) received no treatment. As stated by the researcher, each participant composed two individual writing samples (pre and posttest) under timed conditions, which were quantitatively analyzed using the three linguistic developmental measures of complexity, accuracy, and fluency.

While no statistically significant differences in fluency or accuracy were found, descriptive statistics revealed that collaborative writing had a positive impact on individual learners’ written fluency. The analysis of complexity measures yielded conflicting results in terms of learning gains. Further examination of perception data reported by learners in an exit survey revealed a favorable attitude toward perceived linguistic benefits associated with wiki-based collaborative writing activities.

2.2. Collaborative Writing with Wikis: An Empirical Investigation

According to Helen et al., the primary goal of this paper was to investigate the process and interaction among group members using wikis to produce collaborative writing (CW) projects and to compare their collaborative behavior among students at various levels of education [4]. The researcher in this study investigated the involvement and collaboration of Hong Kong primary, secondary, and university students in the development of their wiki-based CW projects.

According to the study, analyzing the revision histories and content of wiki pages yielded both qualitative and quantitative data. The study's findings revealed that the level of education had a significant impact on student CW actions, as well as their interaction and coordination behavior to co-construct the work; additionally, the frequency of collaborative activities varied noticeably among primary, secondary, and university students.

One interesting finding from this study is that it broadens our understanding of the complex and dynamic process of CW using wikis. It has practical implications for why and how pedagogy and technology should be implemented differently for students at three different educational levels to facilitate collaborative knowledge construction. In terms of our reading, research to date has lacked an in-depth understanding of the processes and activities involved when students collaborate on wikis.

As a result, we have yet to see a study that compares collaborative behavior among students at various levels of education. We believed that the findings of this study could help to develop new and appropriate modes of group-based collaborative learning for the twenty-first century at all levels of education.

2.3. The Effect of Using Wikis on Improving Students’ English Writing Skills and Their Attitudes

In this study, the aim was to investigate the effect of using wikis on improving Palestinian ninth graders’ English writing skills and their attitudes towards writing. According to Fatma H., the targeted skills included writing an email from notes, organizing events into a paragraph, and writing a report from notes [3]. To accomplish this goal, the researcher attempted to use a representative sample of 39 EFL students from one class. The class was divided into two groups: the experimental group had 20 students and the control group had 19 students. In terms of previous learning, the two groups were equivalent in terms of their achievement in the English language in general and achievement in English writing in particular.

The researcher used three instruments or data gathering
tools: an observation card to investigate students' performance in utilizing Wikis and practicing writing skills and activities, a questionnaire to reveal students' attitudes toward using Wikis in teaching and learning writing skills, and a pre/post writing test. The writing test was used as a pre-test to prove group equivalence; it was also used as a post-test to measure any possible differences between the target groups. SPSS was used to analyze and treat the collected data statistically.

The study's findings revealed that there were significant differences in participants' performance before and after implementing a wiki project, with the post-performance outperforming the pre-performance. The findings also indicated the presence of significant differences in the experimental group's attitudes before and after the experiment of using wikis to develop their writing skills in favor of the after experiment. Furthermore, the study's other findings revealed that there were significant differences in mean scores between the experimental group and the control group in favor of the experimental group.

According to the research, this was due to the wiki technology. Furthermore, using the effect size equation, the study discovered that the wiki project had a large effect size in favor of the experimental group. The study suggested that teachers use wiki technology when teaching writing skills in order to develop and improve their students' writing abilities. It also suggested that more research be done on the effects of wikis on various English skills and other school subjects in different contexts.

2.4. Using Wikis for Collaborative Writing in the ELT Classroom

The main focus of this study was to examine the use of an educational wiki to develop the second language (L2) writing skills of English language students who are placed on a two-week online course to develop skills in English for work-related purposes. According to Hudson, J., the main points discussed were the use of wikis for learning L2 and learning writing through collaborative tasks [5]. As stated by the researcher, the discussion examines perspectives and theories on the use of wikis for developing writing skills, as well as the issues associated with the use of wikis for collaborative tasks.

As previously stated, the emphasis was placed on L2 students and a teacher in a task involving wiki spaces, which is an educational type of wiki. A questionnaire, interviews, and the teacher's diary were used to collect data. According to the study's findings, wikis may be useful in assisting students with their L2 writing, and students are likely to value the opportunity to collaborate on a writing task or a specific type of task.

One point raised by the researcher in this study is that not all students are expected to be familiar with wiki technology and its features. As wikis continue to gain popularity in language classrooms, a more in-depth study that examines the usefulness of wikis for such classroom tasks may bring new insights and interesting results to the discussion of wikis in the English language classroom (ELT). As a result, it is suggested that future research with a larger and more diverse audience, as well as a more specific focus, may provide better information in this regard.

2.5. Pedagogical Criteria for Successful Use of Wikis as Collaborative Writing Tools in Teacher Education

As defined in this study, a wiki is a Web 2.0 technology that has the potential to promote collaborative writing, group discussion, and interaction. However, little research has been conducted to determine which criteria are appropriate for addressing pedagogical issues related to collaborative writing with wikis, as mentioned in the study. The purpose of this paper was to propose a set of pedagogical criteria for investigating wiki-based collaborative writing. Based on Hadjarrouit's concept, the criteria are then used to assess students' perceptions of collaborative writing using Media Wiki [9]. The researcher also discussed the pedagogical implications of using wikis as collaborative learning tools in the teaching-learning process in this paper.

2.6. Collaborative Writing: Fostering Foreign Language and Writing Conventions Development

The main intention of this paper was to propose a set of pedagogical criteria for successful use of wikis as collaborative writing tools in the teaching-learning process in this paper.
(argumentative, informative, and decision-making). As stated, the students' wiki pages were then analyzed to determine the role of task type in the number of self and peer corrections, as well as form and meaning changes.

In addition, focus-group interviews and questionnaires were administered to students to determine how they would describe their overall experience with the integration of a wiki-based collaborative writing project into their foreign language learning process.

According to the findings, the argumentative task elicited more peer corrections than the informative and decision-making tasks. Furthermore, self-corrections were higher in the informative task than in the argumentative and decision-making tasks. Aside from the aforementioned points, the use of wiki-based collaborative writing tasks resulted in the correct use of grammatical structures.

The study's other findings suggested that students, regardless of task type, paid more attention to meaning rather than form. Finally, students reported having positive experiences with wikis in foreign language writing and believing that their writing performance had improved.

2.8. The Effects of Wikis on Foreign Language Students Writing Performance

The purpose of this study was to look into the use of wikis in improving writing skills among 42 male students at King Saud University in Saudi Arabia during their Preparatory Year. The researcher used a test to assess students' writing abilities. According to Yousif Alshumaimeri, pre- and post-test performance results revealed that both groups (control and experimental) improved significantly over time in both accuracy and quality [11]. In the post-test, the experimental group significantly outperformed the control group in terms of both accuracy and writing quality. The findings suggest that wikis can benefit teachers and students by improving their writing accuracy.

2.9. Wiki as a Collaborative Writing Tool in Teacher Education: Evaluation and Suggestions for Effective Use

Wiki technology, as mentioned in this study, provides new opportunities to foster collaborative writing in teaching and learning writing skills. According to Said, H., three methods and their combinations were used to empirically evaluate the level of collaborative writing in a wiki-based environment [8].

The first method was to use the history function, which records all student actions and allows you to track all changes made to the wikis. Using taxonomy of ten editorial types, the actions were analyzed in terms of number and percentage of contribution. The second method assessed the level of collaboration by examining comments posted on the wiki discussion page. The third method used peer assessment to provide feedback on the level of collaboration.

The findings revealed significant differences in the types of contributions across the categories studied. The findings also show that the level of collaborative writing was lower than anticipated. The wiki itself and students' perceptions were two possible factors that could influence wiki-based collaborative writing.

3. Summary of the Findings

We chose these nine articles based on population, study design, grade level, comparison groups, and measured outcomes. According to the findings of the studies, wiki improves students' writing skills. Furthermore, students have positive attitudes toward wiki-based collaborative writing. Taking into consideration all of the benefits of using wiki-based collaborative writing, implementing wiki-based collaborative in our context can assist teachers and students in improving the process and practice of teaching and learning writing skills.

4. Conclusions and Recommendations

According to the findings of the above articles, wiki-based collaborative writing can help students improve their writing performance. As shown in the articles, we examined above, the wiki not only helps learners improve their writing skills, but it also helps them become critical thinkers, problem solvers, and independent learners. According to the study findings, the learning platform (wiki) promotes multiple modalities when teaching and learning writing skills.

Considering the points raised above, we can incorporate wiki-based collaborative writing into our context to assist our students in expressing their ideas through writing. There are two options for ensuring the effective implementation of WBCW. The first option is for students to use their smartphone, while the second is to use the university's digital library and computer laboratories.

We will train the students on how to use the learning platform before they begin the process. My lesson plans will be integrated into the wiki. We will not change the usual material, but rather the instructional media.

We would then create a user name and password for students before they attempt to use the platform. Then, before the treatment begins, we will administer a pretest to assess the effect of the wiki. They will then be paired up based on their pre-writing score. We will administer a post-test after they have practiced writing for one week to determine the impact of the wiki on their writing performance. Finally, the discovery will be made public. The second cycle will begin based on the given reflection. The action will be repeated until the students' writing skills have improved.

If wiki-based collaborative writing has many benefits for improving students' writing skills, students' and teachers' awareness of the wiki's positive pedagogical impact should be increased. Furthermore, as stated by Watanabe and Swain, wiki assists teachers in addressing a critical problem in collaborative writing, which is the passive role [15]. The institution (AASTU) is expected to plan various educational technology workshops. We, as teachers, are also responsible for keeping our profession, teaching, up to date. The emergence of many educational
technologies, such as a wiki, has completely altered 21st century teaching pedagogy. As a result, we expected to integrate technology into our teaching and learning practices. To improve practice, the concept of technological and pedagogical content knowledge should be implemented.

The following is the sample page of the platform, wiki.

![Figure 1. Sample Page of Wiki.](image)

## References


