Advancing Grammatical Accuracy of EFL Students in Web-based Writing

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Abdurrazzag Alghammas is an assistant professor of applied linguistics at Qassim university, Saudi Arabia. He has been teaching English courses for secondary-level and university-level students since 2002. He obtained a Master's degree in Applied Linguistics from The University of Edinburgh, UK, and a PhD in Applied Linguistics from The University of Memphis, USA. His research interests include computer assisted language teaching and learning, second language acquisition and assessment, and teaching L2 grammar and writing.

Abstract

In group writing, a group works together to compose a well-written text. Web 2.0 has bolstered web-based group writing among linguistic scholars and language teachers. This research examined the impact of web-based group writing on intermediate-level sophomore students majoring in English in colleges in Saudi Arabia. It considered the students' work process during web-based group writing, unveiling students' opinions and attitudes toward web-based tools. Employing a questionnaire survey after a writing task, data were gathered after respondents experienced the benefits of web-based writing. The theoretical framework for the research was based on Vygotsky's social constructivist theory and Li and colleagues' wiki-based collaborative process writing pedagogy (WCPWP). The results indicated that using web-based tools in the group writing of essays helped learners make fewer grammatical errors and also fostered group interactions. Many learners positively reacted to the web-based group writing. This research provides a better understanding of the modern technology and pedagogy used by educators, thereby contributing to the existing literature. Based on the study results, the research presents recommendations of appropriate web-based applications for second language writing.

Keywords: *web-based tools, group writing, grammatical accuracy, social constructivist theory, wiki-based collaborative process writing pedagogy (WCPWP) model*

1. Introduction

For more than two decades, teachers have employed group writing in second language learner (L2) classrooms. In this writing activity, students negotiate ideas, interact to make joint decisions, and engage in a composition process yielding a single outcome resulting from co-ownership and shared responsibility (Storch, 2013). By enabling learners to construct knowledge through cooperative efforts, the writing practice also helps them collect language resources. Experts in the L2 field have demonstrated that group writing motivates students to use recurrent editing to promote L2 development (Williams, 2012). Scholars have explored how writing collectively has impacted language learning (Wigglesworth & Storch, 2012). As L2 students complete a mutual writing project, they subconsciously cultivate the skills needed for group, interactive writing (Storch, 2005). Moreover, the collective efforts enhance L2 learning, as they generate a joint scaffolding that helps students identify linguistic gaps, form hypotheses, and talk about other languages while they cohesively develop a co-constructed text (Hanjani & Li, 2014).

Many experts have illustrated the benefits of group writing, including the increased discussion of language forms and heightened audience awareness (Storch, 2012). Students can apply these newly acquired skills and knowledge as they produce a composition together (Hirvela, 1999). Recent innovations in most Web 2.0 tools, such as Google Docs or wikis, have facilitated collaboration and participation. This technology has increased attention on computer-mediated group writing, especially for L2 students. Because of the technology's space–time independence, students can engage in virtual reflection and writing interactivity, thereby taking a highly beneficial research path (DiCamilla & Anton, 1997). Because group writing offers numerous advantages for L2 students, researchers should assess how it can also advance cultural learning and educational learning.

The present study examines the relationship between L2 group creative writing and modern technology. Specifically, it investigates how online group writing helps students produce grammatically accurate essays and promotes the self-correction of errors; it also measures students' perceptions of the adoption of wikis for writing assignments. The primary research purpose is to explore the use of online group writing in enhancing student writing and unmask

student views of the experience. Furthermore, the research aims to expand the way modern technology can enhance pedagogy, specifically language learning.

2. Literature Review

2.1 Teaching Grammar Through Technology

The methodological assumptions and underlying learning of instructors and students have led to the teaching of grammar through computer-assisted language learning (CALL). In the past, computers have offered structured or drilled response activities (multiple-choice questions or fill-in-the-blank exercises) to help learners review grammar. Grammatical exercises continue to be prevalent, especially among behaviouristic teachers who view language learning as involving audiolingual instruction (Bikowski, 2018). However, educators wishing to transcend rote behaviourism can leverage technology to teach grammar in new ways. Technology can benefit teaching when educators integrate it into the curriculum and their teaching practices after careful planning. Although some educators have focused on task-based instruction, the aspects of this instruction related to identifying problems, assessing practical tasks, and evaluating real-world events have not been assimilated in bottom-up grammar learning (Blake, 2013). Moreover, by basing instruction on tasks, both teachers and learners have a better opportunity to get involved in student work and immerse themselves in their grammatical structures.

Doughty and Long (2003) developed 10 methodological principles that can be applied to task-based language teaching with technological aids; they used inputs, learning tasks, learning styles, and student preferences. CALL implementation relies on structured tutorials, technology-based simulations, problem-based learning tasks, computer-mediated communication discussions, and autonomous learning tasks (Swain & Lapkin, 1998). A well-focused task for learning grammar can take any of these forms. Therefore, instruction using this perspective appears to be better suited here than traditional rule-based grammar teaching. Teachers today have three methodological choices: technology-based, language-based, and conventional context-based learning. Although traditionally, educators around the world have employed English as a foreign language (EFL) teaching strategies to teach grammar, new result-oriented tactics have emerged and are being put into practice. Most professional development programs present various techniques and approaches (Almuhammadi, 2020). However, more studies are needed to create a body of evidence about the

efficacy and effectiveness of modern techniques over traditional ones, so that more educators will incorporate them.

2.2 Group Writing

In group writing, two or more participants co-author a written text and, as they do so, combine a product and a process (Kale, 2013). The procedure encourages all members of the group to participate actively during the composition, proposal of ideas, negotiation of structures, and editing of the text. These activities constitute and result in a collective achievement. It is important to note that collaboration does not distribute projects independently among group members and then encourage them to assemble a final product (Cole, 2009). In collective writing, at some point—if not at all points—the participants share the task. Interaction problems emerging during web-based group writing can include reluctance to edit the work of others or comment on it, feelings of isolation, preference to work independently, and the discounting of group members (Boling et al., 2012). Researchers have asserted that writers can relate with each other in meaningful ways in group writing. The aim of this research is to focus on goals, contexts, and other similar aspects influencing interactions (Cho & Lim, 2017). The outcome of this research can improve the practice of collectivity and boost the perception of group writing, increasing its usage and reducing its negative connotations (Volet et al., 2009).

Vygotsky (1978) reported that collaboration helped students learn. He developed the zone of proximal development (ZPD) to measure what a student can learn and accomplish alone compared with the learning that student gains when working cooperatively. Group writing requires that a group work as a team to create documents; scholars have found that this mutuality encourages linguistic proficiency and better academic performance (Elola & Oskoz, 2010). Web-based writing is one effective means by which students can compose a text together to achieve a mutual goal. Learning through technology requires that all actors actively participate in a conducive learning environment.

Both groups and individuals must remain regulated for group writing to succeed. In De Wever et al.'s (2015) study, students confirmed that activity supervision improved learner participation and confidence and reduced anxiety about group writing. Few researchers have examined student influences and interactions during group writing sessions (Wigglesworth & Storch, 2012). The current study examines student interaction and its effects during group writing to address this gap.

It is hoped that future researchers can explore the impact of teacher supervision during group writing.

2.3 Wiki Usage in Writing Courses

Wikis constitute a useful and easily accessible tool for foreign language learning and L2. Few researchers have explored wiki efficiency and technological efficacy for language acquisition or its impact on grammar learning because it is a relatively new field. Because of their flexible web settings, wikis are a unique web tool (Aydin, 2014) that offers an editable online space in which a group text can be created to facilitate knowledge and information sharing. The wiki allows users to send and post messages, draft and modify the text, and manage materials within a prescribed space (Wang, 2015). Many researchers have used wikis to modify, delete, or add content while collaborating with others. The group writing tool tracks source information and stores edits, recording how they influence student writing and collaboration (Alghammas, 2016). Li and Zhu (2017) discussed the four dimensions of wiki-based group writing: (1) factors mediating group interactions, (2) text negotiation and co-construction, (3) final wiki product generation, and (4) the student perception of wiki-based writing assignments (Figure 1).

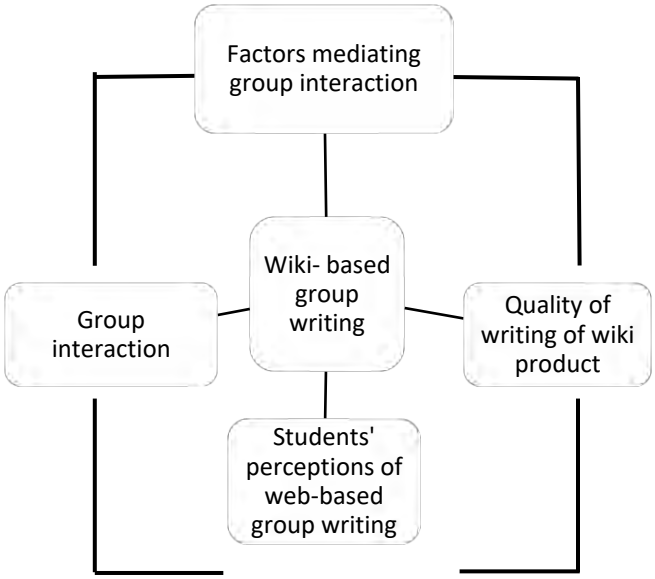


Figure 1. Li and Zhu's (2017) four dimensions of wiki-based group writing

Accessing wiki effectiveness as a web-based learning tool is easy because the web browser stores the composition and its editing changes. Therefore, wiki collaboration enhances group writing

completed outside the classroom. It also incorporates editing structures and open reviews to help students co-construct L2 knowledge through proper negotiations, revisions, and discussion points. This asynchronous, online, common platform fosters additional reflection on the L2, thereby promoting language acquisition. A wiki also gives writing trainers another means of integrating group writing into the classroom (Jung & Suzuki, 2015).

Many researchers have examined wiki-mediated L2 group writing, and others have focused on the steps students use to revise their text when engaging in group writing. For example, Lee (2010) observed that, while using wiki tools to write, students have linguistically supported one another to make corrections regarding word and sentence formation. Other experts have contended that students generate form, content-related information, and other changes in joint wiki projects (Arnold et al., 2009). Arnold et al. (2009) discovered that students focus better on content presented in a more formal style of writing. Li (2013) and Mak and Coniam (2008) also found that learners rephrased, formed, reorganized, and established ideas while correcting others' errors in joint projects. Some language learners have explored L2 interactions as they have co-constructed wiki projects. Li and Kim (2016) investigated student interactions and found that changes in language writing and grammar resulted from the projects on which L2 students were working; in addition, student interactions while working on wiki projects had significant effects on the students' writing proficiency and sociocultural factors (dynamic goals, socially constructed emotions, and flexible agency) also affected their performance.

Scholars have examined the effects of group wiki writing on L2 students from Taiwan (Hsu & Lo, 2018). The researchers divided 52 learners into two groups: an individual writing group and a wiki group writing group. The wiki students shared ideas about the project to produce a joint essay, and the students in the other group wrote papers individually. The researchers assessed the students' individual written assignments before the exercise and the group and individual assignments after the exercise for content organization and value and language accuracy and complexity. The outcomes indicated that the wiki group made remarkable improvements in organization and content quality along with language accuracy. The comparison also demonstrated that the wiki group had become superior to the individual writers in terms of language accuracy and content quality after their group wiki-writing experience. Hsu and Lo (2018) focused on problem solving and found that group writing effectively improved the quality of essays written by L2 students; this advantage might be attributable to the collective wiki-facilitated conversations among the L2

students who were co-constructing the text. Although many experts define a wiki as a technological development allowing L2 students to recreate skills from a sociocultural constructive learning perspective, most wiki-based studies primarily concentrate on student interactions and revisions in group writing (Castañeda & Cho, 2013).

Few researchers have explored student collaboration beyond interactions and revisions; most researchers have concentrated on the joint student dialogue and how students can develop better L2 skills. Kuteeva (2011) reported that wiki writing increased the structural coherence and grammatical accuracy of student efforts. Both Kuteeva (2011) and Kessler (2009) asserted that, while teaching non-native speakers, EFL teacher candidates gave more time and attention to the nature of the content when they were editing via a wiki. Teachers encouraged students to use language and maintain accuracy while revising and writing texts. Although they could have made the necessary changes, the learners in Kessler's (2009) study did not engage in correcting grammatical errors that did not change the meaning. Meanwhile, Wheeler and Wheeler (2009) and Kuteeva (2011) revealed that students significantly advanced their academic writing abilities when they engaged in group wiki writing.

On the other hand, Wheeler and Wheeler (2009) and Lee (2010) discovered that reluctance limited group writing for most participants because they ignored the errors in other students' texts on the wiki. Wheeler and Wheeler (2009) reported that participant unwillingness stemmed from the fact that a significant number of participants were instructors with several years of experience, which may have increased their fears about questioning the competence of their peers. Conversely, Lee (2010) found that 40% of her participants lacked confidence in their writing skills, making them unwilling to correct peer texts. However, students in Kessler's (2009) study developed increased confidence and easily analysed and corrected other students' work. Therefore, wiki writing did enhance grammatical accuracy, and shared learning enhanced the benefits accrued by participants.

3. Theoretical Framework for Group Writing

The theoretical framework for this study, based on Long's (1981) second language acquisition interactionist theory focusing on input, notice, and interaction, plays a vital role when creating CALL materials integrating grammar within group language learning in computer-mediated communication (Kessler & Bikowski, 2010). This paradigm resides in the notion that group writing facilitates L2 student interactions and, thereby, contributes to the development of language.

Vygotsky's (1978) sociocultural theory also pointed out that collaboration among professionals and beginners (students) facilitates learning.

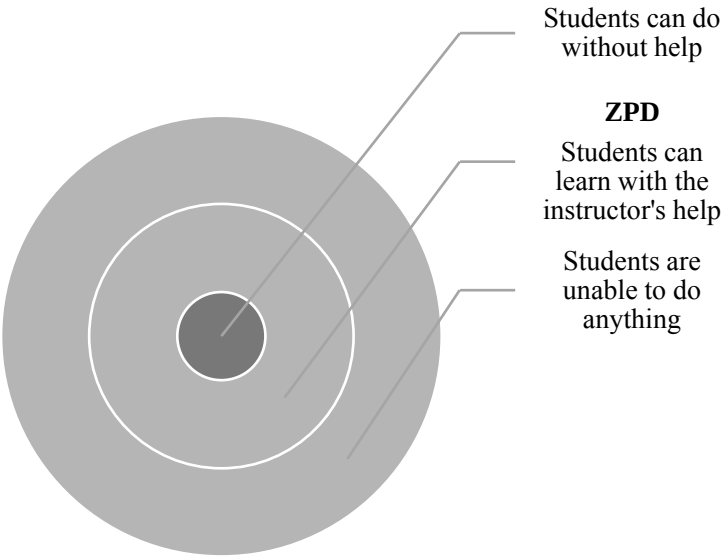


Figure 2. Vygotsky's (1978) model of the zone of proximal development (ZPD)

Figure 2 depicts the underlying premise of the sociocultural theory. It explains the difference between what learners can learn self-sufficiently and what they learn with the help of instructors or peers. When in the zone of proximal development, L2s engaged in group tasks pool their expertise to create a final product through a mechanism called collective scaffolding (Donato, 1994). The theoretical framework guiding this study posits that, although students can learn independently, they also garner additional benefits from others' assistance.

3.1 Conceptual Model for Web-Based Group Writing

The conceptual framework for wiki-based group writing resides in the wiki-based collaborative process writing pedagogy (WCPWP) created by Li et al. (2012). This model, also based on the sociocultural theory, uses the sociocultural perspective of writing. According to this paradigm, social theory supports the use of wikis in writing where composition activities occur grouply. A wiki allows learners to observe the ideas of other people and then build on their knowledge while interacting with their fellow peers (Witts, 2008). According to Figure 3, learners can build their knowledge and understanding through cultural interactions with other group members (Kessler et al., 2012). This model displays groups G1 to G3 in the group writing process being monitored,

which showed that their interactions with teachers and among themselves improved communication and accuracy.

3.2 Teaching Grammar in Saudi Arabia

Instructional strategies play a significant role in teaching grammar. Throughout the 1970s, Saudi Arabia—like other countries in which English is not a native language—utilized antiquated methods in teaching grammar (Raja et al., 2016). According to Jin and Cortazzi (2011), traditional grammar instruction in EFL uses an approach in which vocabulary and grammar reinforce words and grammar rules translated from one language to another. In Saudi Arabia, this grammar translation places the teacher at the centre. This prevailing style needs to be shifted to a more dynamic type of student-centred training, allowing more interaction among students to strengthen classroom grammar teaching. According to Yuan et al. (2016), the lag in updating teaching methods may result from the fact that many instructors have long engaged in language coaching and are resistant to engaging in a new pedagogy.

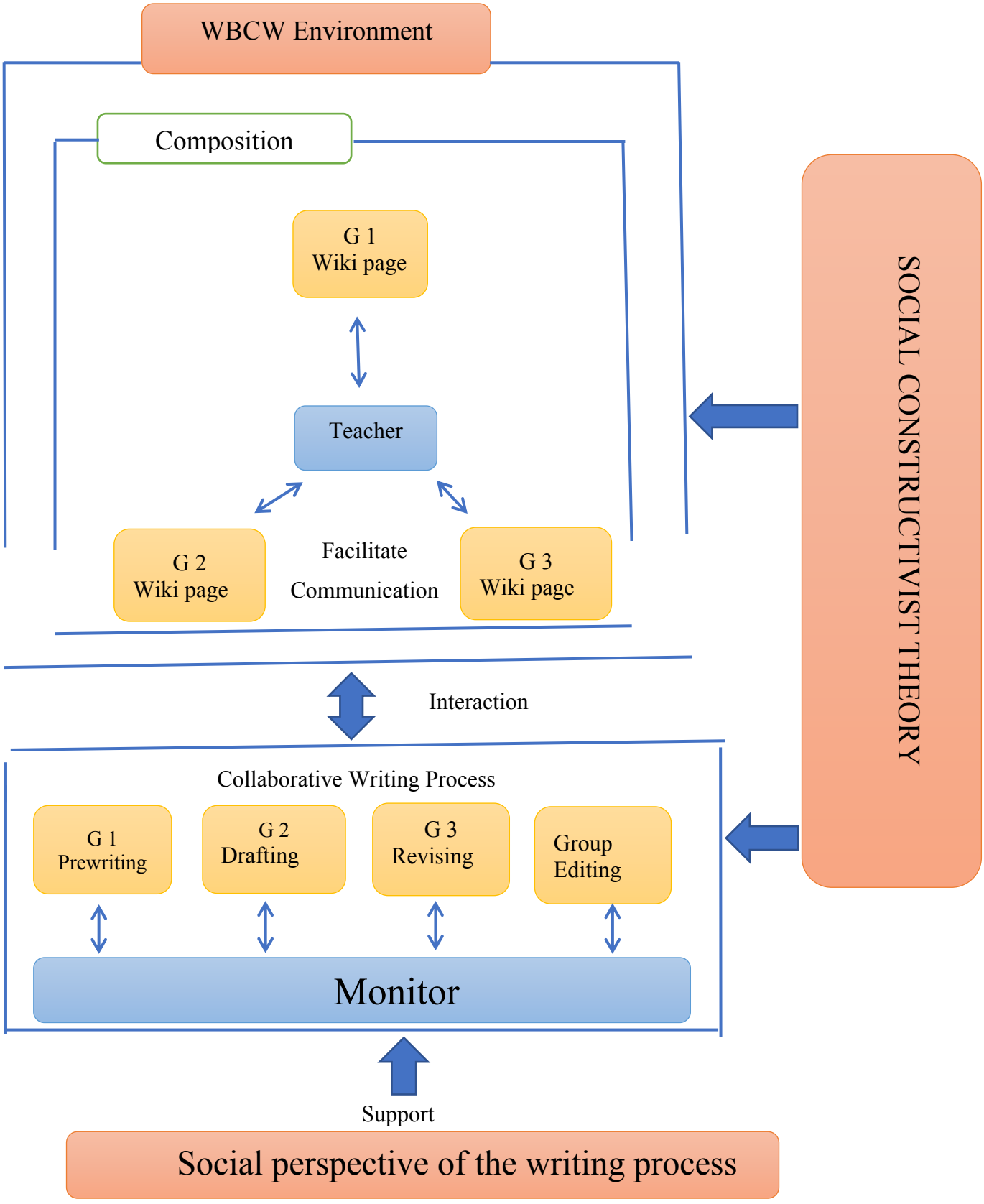


Figure 3. Li et al.'s (2012) conceptual model of web-based collaborative process writing pedagogy

Experts have found that wikis have influenced student grammar. Kessler (2009) investigated the effect of wikis among 40 non-English speaking instructors who aimed to advance their language skills in 16 weeks. The teachers were encouraged to pay attention to language accuracy while interacting with their peers. The research outcomes indicated that students who focused more on meaning than language form, spelling errors, or word choices when editing peer posts had better language development. Castañeda (2011) studied 57 undergraduates learning imperfect Spanish tenses at a public university. No significant differences were seen in the photo/video blog and wiki production between participants who used video and photographic blogs with wiki technology and those who used more traditional forms of technology. However, some recognition variations existed. The results showed that wikis and photo/video blogs enhanced the learning and teaching of more challenging structures (Godwin-Jones, 2018).

Kuteeva (2011) explored how wikis in courses contributed to effective communication in English, building writing skills for professional and academic purposes. The ESL texts produced in an English communication course were examined for interactional meta-discourse resources and reader-oriented elements. Kuteeva (2011) contended that exposing learners to writing activities enhanced their ability to identify proper grammar use, text organization, and structural cohesiveness. In the study, 60% of students declared that using wikis while writing made them focus on their audience and engage their readers more than when writing in an argumentative style. Lund (2008), on the other hand, explained wikis in sociocultural terms as developed social and psychological phenomena. This exploratory study centred on student interactions among EFL learners while using wikis. The researchers discovered that wikis' cooperative practices semantically expanded lexicogrammatical expression. Therefore, a wiki was the epitome of a viable technological tool for enhancing language learning (Yim & Warschauer, 2017).

4. Research Methodology

The researcher employed mixed methods to explore the impact of wiki-based group writing. Vygotsky's (1978) theoretical zone of proximal development framework and Li et al.'s (2012) conceptual framework of the WCPWP suited the mixed-method design. The questionnaire (see Appendix) was adapted and modified from (Alghammas, 2016). The first item asked respondents to provide their identification numbers, which the researcher had assigned as a random sequence of numbers to protect respondents' identities. The second item was a yes/no question asking about

respondents' previous experience with wikis. The next 11 items employed a 3-point Likert scale to score the answers, with 1 showing disagreement, 2 neutrality, and 3 agreement. The last three items were open-ended questions that collected qualitative data detailing participants' feelings and opinions about wikis. A statistician and an applied linguistics professor assessed the final questionnaire to bolster its reliability and validity. The sample was made up of 28 Arabic students majoring in English at a Saudi university who completed the online questionnaire using SurveyMonkey.

The questionnaire survey was administered after a group writing task in which seven groups of students, with four learners in each group, used wikis to write about the impact of COVID-19 on education. After brainstorming ideas in an online activity, where all students shared their wiki knowledge, the group jointly composed an essay using built-in wikis on the Blackboard learning management system. These assignments were collected electronically and copied into Microsoft Word; the researcher used the grammar check tool to analyse the document's grammatical accuracy and then manually reviewed the document.

The researcher coded the responses to the subsequent Likert scale items according to common themes, calculated the percentages of students who had agreed with, been neutral about, or disagreed with each item, and reported the results. The open-ended question responses were coded into common themes and analysed using a thematic analysis.

Research Questions

This study focused on addressing three research questions:

1. Does wiki-based group writing enhance the grammatical accuracy of students' essays?
2. Does wiki-based group writing help students identify grammatical errors?
3. What perceptions do students have about incorporating wikis into writing assignments?

5. Results

Participants' responses provided the main findings of the study, which are presented in this section. Among the respondents, 89.29% (n = 25) had not used wikis before and 10.71% (n = 3) had previous experience with wikis (Item 1). Table 1 presents the percentages of answers to six of the Likert scale items on the questionnaire as well as their means and standard deviations.

Table 1

Respondents' Views on the Value of Wikis in Identifying Grammatical Errors

Statement	*Disagree*	*Neutral*	*Agree*	*Mean*	*Standard Deviation*
Item 5. Wiki writing helped me focus on meaning development	7.14%	32.14%	60.71%	3.61	0.86
Item 6. Wiki writing helped me focus on grammar use	7.14%	39.29%	53.57%	3.61	1.05
Item 7. Wiki writing helped me write with no grammatical errors	32.14%	21.43%	46.42%	3.21	1.08
Item 8. Wiki writing helped me notice grammatical errors	7.14%	32.14%	60.72%	3.71	0.96
Item 9. My wiki group focused on grammar more than meaning	57.14%	35.71%	7.14%	2.43	0.73
Item 10. Wiki writing helped me correct my grammatical errors	3.57%	39.29%	57.15%	3.68	0.89

Two items related to identifying grammatical mistakes generated the greatest agreement: "wiki writing helped me notice grammatical errors" (60.72% agreement) and "wiki writing helped me focus on meaning development" (60.71% agreement). The items "wiki writing helped me correct grammatical errors" (57.15% agreement) and "wiki writing helped me focus on grammar use" (53.57% agreement) generated agreements among more than half of the respondents. The statements that generated the most disagreement among the respondents were "my wiki group focused on grammar more than meaning" (57.14% disagreement) and "wiki writing helped me write with no grammatical errors" (32.14% disagreement).

5.1 Value of Wikis in Improving Grammatical Accuracy

When asked whether wiki writing had helped students focus on their grammar, 53.57% of the respondents agreed that it had while 39.29% were neutral and two respondents (7.14%) felt that it had not helped them. The mean value for this item was 3.61, and the standard deviation was 1.05. An open-ended question in item 14 provided more clarity about how wikis helped students write an essay with no grammatical mistakes. The thematic analysis revealed commonalities in the responses (see Table 2). Each entry in Table 2 shows a common theme identified through an analysis of respondents' opinions.

Table 2

Students' Views of the Value of Wikis in Improving Grammatical Accuracy

Theme	*Number of Respondents*
Helped remove mistakes and weaknesses through collaboration	8
Corrected grammatical errors	7
Shared information	4
Took less time	3
Generated more ideas and better details	3
Was more enjoyable	2
Resulted in lack of coherence in wiki writing	1

Respondent 3 summarized wiki writing well by stating, "In individual writing, it's only you, so there is no one to correct your mistakes and help you, but in a wiki, you have people in the same group to work with." Respondent 10's views added to this:

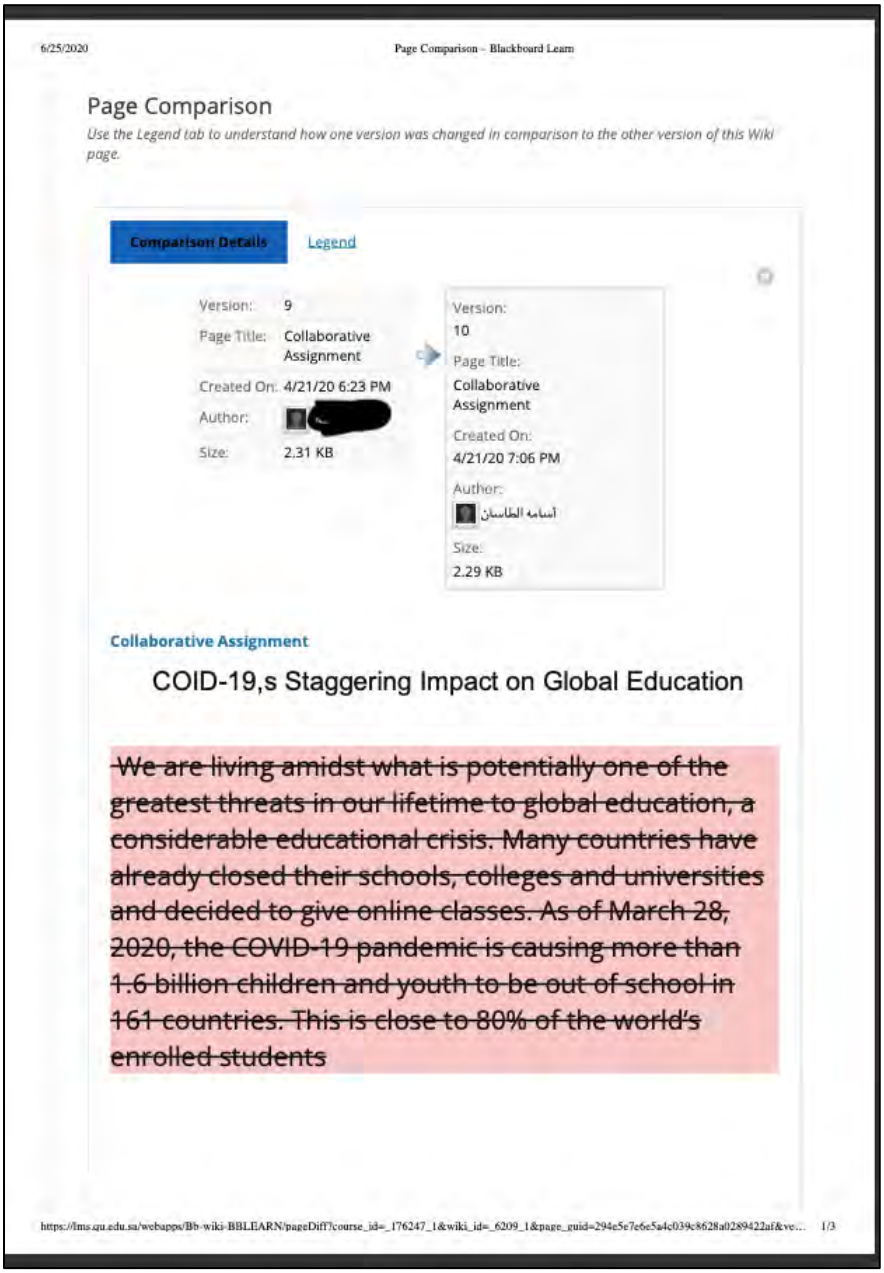
> In a wiki, some of the members might have good thoughts, and [one can] write them down but can't arrange them, so [another member] might be excellent [at] writing [and] can arrange them in a good writing style, and [a third member] may be good with grammar [and] can correct the grammatical errors if (they) exist, and so on.

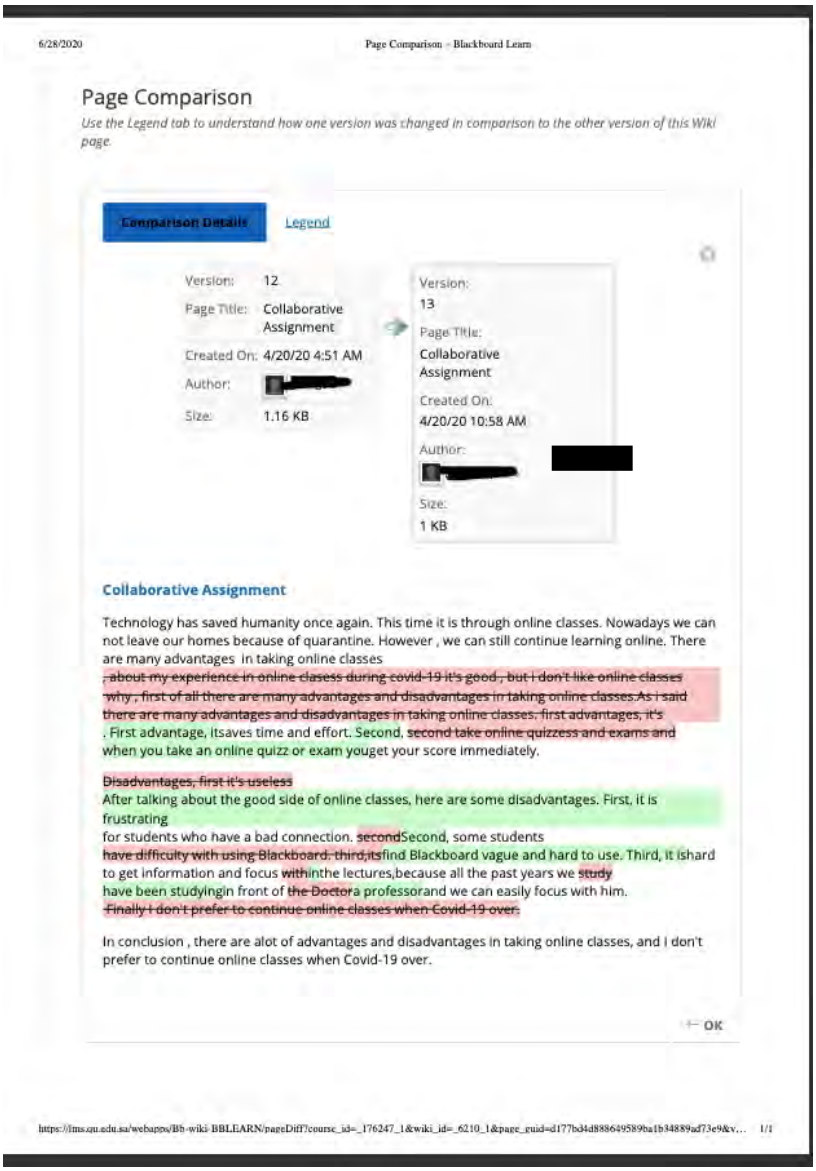
Respondent 17 corroborated this by asserting,

> the difference between individual learning and group learning is that group learning can modify mistakes, [lead to the] shar[ing of] ideas, and [allow the] exchange [of] opinions. From my point of view, group learning gives a better product than individual learning.

However, Respondent 5 pointed out a weakness in wiki writing, citing differences in writing styles and the ability to organize ideas in paragraphs.

Figure 4 presents screenshots of some of the students' work to illustrate how learners achieved grammatical accuracy while working grouply. The words in red and the comments show group members' efforts at editing.





6/28/2020 Page Comparison - Blackboard Learn

Page Comparison

Use the Legend tab to understand how one version was changed in comparison to the other version of this Wiki page.

Comparison Details | Legend

	Version: 12	Version: 13
Page Title:	Collaborative Assignment	Collaborative Assignment
Created On:	4/20/20 4:51 AM	4/20/20 10:58 AM
Author:	[redacted]	[redacted]
Size:	1.16 KB	1 KB

Collaborative Assignment

Technology has saved humanity once again. This time it is through online classes. Nowadays we can not leave our homes because of quarantine. However , we can still continue learning online. There are many advantages in taking online classes

~~, about my experience in online clasess during covid-19 it's good., but i don't like online classes why , first of all there are many advantages and disadvantages in taking online classes.As i said there are many advantages and disadvantages in taking online classes. first advantages, it's~~ . First advantage, itsaves time and effort. Second, ~~second take online quizzess and exams and~~ when you take an online quizz or exam youget your score immediately.

~~Disadvantages, first it's useless~~

After talking about the good side of online classes, here are some disadvantages. First, it is frustrating

for students who have a bad connection. ~~second~~Second, some students ~~have difficulty with using Blackboard. third,its~~find Blackboard vague and hard to use. Third, it ishard to get information and focus ~~with~~inthe lectures,because all the past years we ~~study~~ have been studyingin front of ~~the Doctor~~a professorand we can easily focus with him. ~~Finally I don't prefer to continue online classes when Covid-19 over.~~

In conclusion , there are alot of advantages and disadvantages in taking online classes, and I don't prefer to continue online classes when Covid-19 over.

OK

https://lms.qu.edu.sa/webapps/Bb-wiki-BBLEARN/pageDiff?course_id=_176247_1&wiki_id=_6210_1&page_guid=d177bd4d888649589ba1b34889ad73e9&v... 1/1

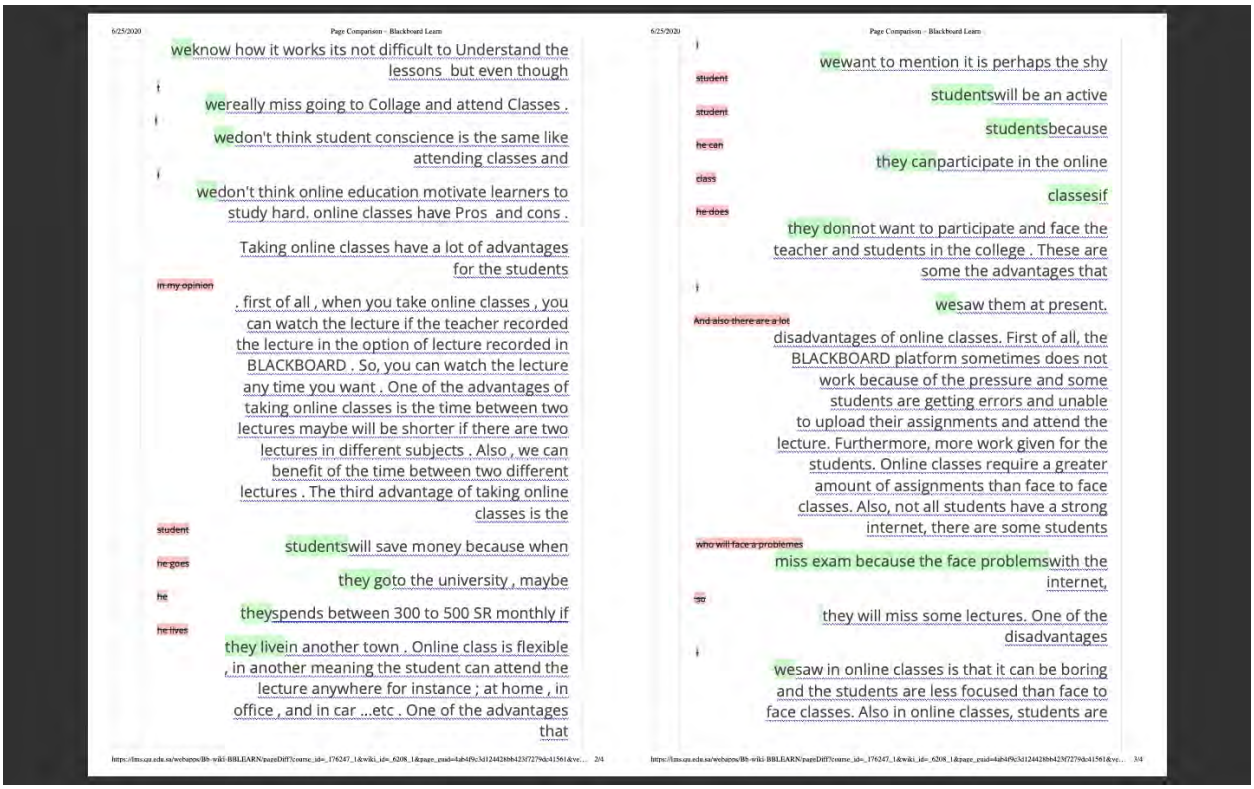


Figure 4. Group writing screenshots

5.2 Value of Wikis in Avoiding Grammatical Errors

Regarding the item "wiki writing helped me write with no grammatical errors," the percentages of agreement were lower (see Table 1): 32.14% of respondents disagreed, 21.43% remained neutral, and 46.42% agreed with the statement. The mean value (3.21) was also lower than for the other items, and the standard deviation was 1.08.

The item "wiki writing helped me notice grammatical errors" received more agreement: 60.72% of respondents agreed, 32.14% remained neutral, and 7.14% disagreed. The mean value was 3.71, and the standard deviation was 0.96—the highest among the writing benefit statements. Quite a high percentage of the respondents agreed with the item "wiki writing helped me to correct grammatical errors": 57.15% agreed with the statement, 39.29% remained neutral about it, and only one respondent (3.57%) disagreed with it. As a result, a high mean value of 3.68 was observed, and the standard deviation was 0.89.

Open-ended questions in item 14 further explored a wiki's contribution to removing grammatical mistakes. Some respondents felt that they were self-reliant in correcting their mistakes. According to Respondent 19, "[The wiki] highlights errors with red lines so I can correct them." Respondent

18, on the other hand, self-corrected his work, claiming "[The wiki] has no corrector like Microsoft Office Word." The researcher identified the respondents' common themes and their frequency, which are shown in Table 3.

Table 3

Common Themes Identified in Respondents' Views on the Value of Wikis in Helping Them Write Without Grammatical Mistakes

Theme	*Number of Respondents*
Respondent relied on self-correction	8
Wikis allowed group members to help correct spelling for others	8
Wikis were helpful and easy and fun to use	3
Wikis offered students more time to choose the right words	3
Wikis were not helpful	3
Wikis helped students to write continuous sentences	1
No response	1
Wikis motivated students by giving them the chance to compare themselves with others	1

5.3 Students' Perceptions of Wikis

The last research question inquired about students' perceptions of wiki writing, eliciting several more benefits of the medium. The results indicated that 71.4% of respondents agreed that they had enjoyed using wikis while 25% remained neutral when answering Item 3. Only 3.57% strongly disagreed, which reflected a single person's response. The mean value was 3.89, with a standard deviation of 0.90. Regarding the item "wiki writing helped me focus on meaning development," 60.71% agreed with the statement, 32.14% remained neutral about it, and 7.14% felt that it did not help. The mean value was slightly higher at 3.61 while the standard deviation was 0.86, demonstrating little variation between the responses. When students were asked if they preferred wiki writing to individual writing in item 4, the responses were more varied, with 42.85% agreeing that they preferred wiki writing, 25% being neutral about it, and 32.14% stating that they did not

prefer wiki writing to individual writing. The mean value was 3.14, and the standard deviation was 1.12.

To the item "my wiki group focused on grammar more than meaning," most of the respondents (57.14%) stated that they disagreed with the item, 35.71% remained neutral about it, and only 7.14% agrees with it. As a result, the mean value of this negatively worded statement was low (2.43), and the standard deviation was 0.73. Another benefit entailed the role of wikis in helping the group reach agreement faster as "wiki group agreed on the final product easily" (item 11). Only one respondent (3.57%) disagreed with the statement (i.e., felt that wikis did not help in this regard), and 64.28% of the respondents agreed with it; 32.14% were neutral. Hence, a relatively high mean value was observed at 3.68, and the standard deviation was 0.66. When asked about the agreement with item 12, which states that "wiki helped me make important contributions," only one participant (3.57%) disagreed, whereas 71.43% agreed and 25% were neutral. The mean value (3.82) was the highest observed, and the standard deviation was 0.71. Item 13 asked if students had found editing in the wiki enjoyable: 10.71% felt it had not been enjoyable, 14.29% were neutral, and 75% felt it had been enjoyable. A mean value of 3.82 and a standard deviation of 1.17 were observed.

The two principal themes that emerged from this open-ended question were that (1) students preferred to remain self-reliant and correct their own work and (2) the wiki enabled students to correct the work of peers and vice versa. Therefore, in cases where the students did use a wiki, they appreciated its ability to allow them to review their peers' work over other elements. In their answers to this question, respondents mentioned some conditions that affected wiki use. For instance, Respondent 2 stated that the wiki was easy and fun to use and helped his writing, but that its benefits depended on the group with whom he was working.

Table 4

Common Themes Found Regarding the Advantages of Wikis in Group Writing Efforts

Theme	*Number of Respondents*
Wikis facilitate teamwork and collaboration	10
Wikis help in the sharing of information and points of view	5
Wikis make writing more enjoyable and productive	5
Wikis facilitate caring and support among team members	3
Wikis are of no help	2
Wikis allow members to focus on their roles in the group	2
Wikis help in creating more ideas and alternatives	2
Wikis generate competition among students and negative challenges for them	1

The next open-ended question (item 15) inquired about the advantages of the wiki for group writing. Several respondents mentioned more than one theme about the advantages of wiki writing, including cooperation and teamwork. Respondent 17 asserted that the benefits included "cooperating, helping each other, correcting mistakes for each other, giving opinions without bias, but for the benefit of all." Some respondents reported that wikis did not help group writing, but they ascribed the failure to low levels of member commitment rather than a problem with the wiki. Respondent 8 said that his group copied answers from Google, rendering the experience useless.

6. Discussion

The results of this study indicate that wikis helped many respondents notice grammatical errors and produce more accurate essays. However, some participants felt differently and stated that they continued to feel the onus for producing work with fewer or even no errors. Some respondents echoed Kessler (2009), asserting that wiki writing focused more on developing meaning than form. Most students had positive perceptions of wiki writing because they believed it led to better productivity, a higher quality of work through collaboration, more skills that could make up for each other's weaknesses, more diversity in ideas, and enhanced sharing of knowledge. Wikis helped the respondents collaborate, buttressing the view of Storch (2011) and Williams (2012) that

group writing helped develop L2 skills. As Hanjani and Li (2014) found, collaboration helped students spot each other's mistakes and correct them. Furthermore, respondents reported hypothesizing about language and improving the text through discussions, as Wigglesworth and Storch (2012) found.

Respondents also mentioned a few weaknesses of wikis. If the group was unproductive or had a few social loafers (Respondent 8 mentioned a team member who copied text from Google), the group writing became uneven because it reflected the minimal efforts and negative aspects of the group. This substantiated the researcher's claims that using web collaboration does not automatically guarantee a better performance. The makeup of the wiki groups also affected participants' perceptions. The participants who felt that wikis played little, if any, role in improving their writing also mentioned that their group members did not participate fully in the exercises or were overly critical of others. For instance, Respondent 24 said he had to remain neutral in his opinions, and Respondent 8 claimed that he worked alone for the most part. Boling et al. (2012) highlighted similar issues.

7. Conclusion and Recommendations

This research explored the impact of wiki-based group writing on the ability of students to produce grammatically accurate essays. The study also investigated students' attitudes toward wiki-based group writing. Wiki-based group writing engenders a student-centred learning approach underpinned by the sociocultural theory. After the successful implementation of the WCPWP, the learners not only responded positively to the wiki tools, but also produced more grammatically accurate essays. The overall findings suggest that a well-developed model of the WCPWP applied successfully and constructively can improve the writing skills of Saudi students.

The findings of the current research generated several recommendations for future researchers. Because the present research was limited to online wiki-based group writing assignments, future researchers should compare wikis with other tools, such as Google Docs, to check the differences between the two writing approaches. Contextual factors, such as group composition and the lack of proper group formation, can affect participants' opinions; therefore, a further understanding of situations impacting wikis' effectiveness is required. A longitudinal assessment of certain parameters that indicate lasting changes in second language acquisition, as Kuteeva (2011) implied, is also needed. In this study, time limitations prevented the researcher from observing

students' subsequent use of wikis. Complicated sociocultural contexts, motivational analyses, organizational parameters, emotional aspects, and analyses of students' prelearning experiences remained outside the scope of this research. Future research may, therefore, examine additional variables, such as the roles of social context, class ideologies, gender, and student proficiency (Davidson, 2015).

The current research has significant pedagogical implications for learning grammar during wiki-based group writing. The wiki is an excellent group tool in L2 learning. The researcher put forth some suggestions for implementing wiki-based group writing in the L2 curriculum. Teachers and language instructors should design a syllabus comprehensively and explain the goals of wiki-based group writing. The curriculum should clearly outline participation criteria, time schedules, and expectations for the final paper. In addition to choosing interesting topics to motivate students, language instructors should provide additional resources that would help students learn more about the topic. Wiki-based group writing can be a new experience for L2s. Thus, professors must conduct training sessions to explain the primary aims of wiki writing. Wiki-based group writing shifts the focus from teacher-centred learning to student-centred learning. Teachers should foster student confidence so learners can navigate learning. Language instructors should assist students and help them solve technical or written problems. To motivate students to participate in wiki-based group writing, instructors should implement creative tasks. The more effort the teacher makes in offering innovative assignments, the more engaged the students will remain. Moreover, language instructors should consider how to form groups to enhance learner performance. Language instructors should restrict the group size because groups comprised of three to four members operate most efficiently (Dobao, 2012).

The teaching of grammar does not occur in software programs designed specifically for language learning; instead, the programs employ technologies for communicative learning. Thus, intensive teacher training remains vital, because it empowers instructors to choose the proper technological tools to build a curriculum to meet student needs. Moreover, teacher self-learning remains essential for teaching grammar because teachers must expand their knowledge and capacity to juggle more responsibilities. The learners, too, should be trained in how to learn when using tools or resources for noneducational purposes (Bikowski, 2018). Thus, preparing teachers and students will significantly affect the success of wiki-based writing and technological teaching for helping with L2 instruction.

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Appendix

Questionnaire

1. I used wikis before taking the CALT course.

Statement	*Disagree*	*Neutral*	*Agree*
2. I enjoyed the wiki for group writing.			
3. I preferred wiki writing to individual writing.			
4. Wiki writing helped me focus on meaning development.			
5. Wiki writing helped me focus on grammatical use.			
6. Wiki writing helped me write with no grammatical errors.			
7. Wiki writing helped me notice grammatical mistakes.			
8. My wiki group focused on grammar more than meaning.			
9. Wiki writing helped me correct my grammatical mistakes.			
10. My wiki group agreed on the final product easily.			
11. Wiki helped me make important contributions.			
12. The editing process in wiki writing was enjoyable.			

13. How did wiki help you write an essay with no grammatical mistakes?

14. What were the advantages of group writing on the wiki?

15. How did wiki writing differ from individual writing?