

## **An Analysis of Wiki Writing on Writing Performance in Saudi EFL Learners: Exploring New Pedagogies in COVID Times**

**Mohammad Imran Khan**

Department of English Language, College of Arts and Sciences  
Methnab Qassim University, Saudi Arabia  
mi.khan@qu.edu.sa

**Paiker Fatima Mazhar Hameed**

Department of English Language, College of Arts and Sciences  
Methnab Qassim University, Saudi Arabia  
f.paiker@qu.edu.sa

### **Bio-profiles:**

1. **Dr. Mohammad Imran Khan**, born in India, is currently working as an Assistant Professor of English and Linguistics (Applied Linguistics and Language Teaching) in the College of Sciences and Arts, Methnab, Qassim University, KSA. He was awarded MA Degree (Linguistics) from Aligarh Muslim University, India, in 2007; he earned his PhD in 2011 from the same prestigious and famous Institution (AMU). He has taught Language and Linguistics to graduate and undergraduate students in the Department of Linguistics, Aligarh Muslim University, India and Saudi Arabia. He was awarded prestigious Doctoral scholarship offered by AMU Doctoral fellowship. He is multilingual and has widely published research in leading journals. His interests include Translation, ESP, Second Language Acquisition, Foreign Language Teaching, Phonetics and Phonology, Psycholinguistics, apart from Vocabulary learning strategies and assessment. One book by him "A Linguistic study of treatment of polysemous words in translation studies" has been published by LAP LAMBERT, Germany. He has also conducted, attended and presented many Seminars and Conferences, nationally and internationally.
2. **Dr. Paiker Fatima Mazhar Hameed**, born in India (Aligarh) 1981, is currently working as an Assistant Professor of English and Linguistics (Applied Linguistics and Language

Teaching) in the College of Sciences and Arts, Methnab, Qassim University, KSA. She was awarded MA Degree (Linguistics) from Aligarh Muslim University, India, in 2005; she earned her PhD in 2012 from the same prestigious and famous Institution (AMU). She has taught Linguistics to graduate and undergraduate students in Women's College & Department of Linguistics, Aligarh Muslim University, India and Saudi Arabia. She was awarded prestigious Doctoral scholarship offered by NTS, Mysore and apex body of the Government of India for language study and AMU Doctoral fellowship. She is bilingual and has widely published research in leading journals. Her interests include ESP, Second Language Acquisition, Foreign Language Teaching, Phonetics and Phonology, Psycholinguistics, apart from Vocabulary learning strategies and assessment. One book by her "A Linguistics study of Spelling Mistakes" has been published by LAP LAMBERT, Germany. She has also presented many papers in Seminars and Conferences.

### **Abstract**

The exponential rise in social networking sites in COVID 19 pandemic increased interest in them in terms of pedagogical value. Social networking tools like wiki have been suggested to allow shared and interactive online learning. This study examined the role of wikis in fostering mutual writing standards among Saudi EFL learners. Students from a KSA university were engaged using the wiki tool in group projects. Data was gathered from (1) the historic supervision of the revision, (2) the pedagogical value for the Wiki, and (3) group interviews with students. Findings also showed that students who made further collaborative modifications to the wiki received better writing performance. Students generally indicated that the pedagogical meaning of the wiki was reasonably positive as a learning tool in EFL writing environment. The findings demonstrate that wikis encourage collaborative writing amongst EFL learners, but teachers must adopt pedagogical techniques that allow students to use wikis effectively for the purpose during the current period of COVID 19 learn-from-home conjunction.

**Keyword:** *Wiki writing, Saudi EFL, English, language skills, cooperative writing, collaborative writing*

## Introduction

The usage of social networking sites has grown for educational purposes as they are considered to be simple to use and to render online learning constructive and interactive. These tools provide wikis for sharing notes, images, and audio. Moreover, comparatively few technological pieces of knowledge are required for practical use. Centered on these appealing qualities, technology is a powerful tool (Al-Ahdal, 2013; Al-Ahdal & Shariq, 2019) to facilitate interactive learning amongst students notably during the current COVID 19 pandemic (Dhawan, 2020; Adnan & Anwar, 2020; Verawardina et al., 2020). Due to their unique features, Wikis are appropriate and powerful tools for collaboratively uploading and editing content (Ali, 2020; Sharp & Whaley, 2018). They allow a community of users, in addition to being content management systems, to share information and encourage individuals to connect, collaborate, and interact through technology (Franco-Camargo & Camacho-Vásquez, 2018). Three points can be used to summarize the possible importance of wikis. One, through a web forum and group discussions, wikis allow students to express their opinions in an interactive and free manner (Al-Shehari & Al-Sharafi, 2020). Second, students have more opportunities to engage actively in group learning, thereby potentially improving their ability to read, compose, reflect, and learn collaboratively (Altay, 2018; Chen & Hapgood, 2019; Pinto-Llrente, Sánchez-Gómez & García-Peñalvo, 2017). Thirdly, wikis give teachers a versatile environment to appeal to students with different learning styles (Wang & Li, 2020; Zeidan, Alhalafawy, & Tawfiq, 2017; Zhang, 2019). It is through such processes that the creation of collective or community information will benefit the users.

For the success of wikis, the ability to promote rivalry rather than cooperation is fundamental. In a well-integrated problem-solving process, collaboration requires participants' mutual involvement, while collaboration occurs when tasks are spread among a variety of participants who perform them independently. Previous studies have shown that students who work in groups perform better in writing than students who work individually (Alharbi & Al-Ahdal, 2013), and that teamwork can increase the writing effectiveness of students (Biasutti, 2017; Chu, et al, 2017; Elola & Oskoz, 2017; Gokbel, 2020; Herrera-Pavo, 2021; Issa, 2020; Luo & Chea, 2020). Therefore, wikis are fantastic tools to allow students to complete teamwork tasks, monitor their success in school, and encourage teachers to track individual contributions to group work. Despite promising indications, conclusive evidence is yet to be identified that collaboration in wiki

environments tends to improve writing efficiency. Research has provided objective data for wikis's efficacy, demonstrating that wikis facilitate cooperation and earn favorable feedback from students and instructors. However, a comprehensive analysis found that wikis's efficacy relies on many aspects, several not thoroughly explored yet. One challenge to be discussed also is if teamwork is connected to the standard of community writing on a wiki platform (Alkhataba, Abdul-Hamid, & Ibrahim, 2018; Franco-Camargo & Camacho-Vásquez, 2018; Konstantina, 2017). Therefore, this current analysis examines whether there is a strong positive connection between the degree of coordination and the level of writing in the wiki culture.

### **Wiki as Tool for Writing**

Social networking instruments are user-centered and promote collaboration, exchange of knowledge, and cooperation (Al-Samarraie & Saeed, 2018; Arnold, Ducate, & Kost, 2018; Sundgren & Jaldemark, 2020; Shane-Simpson & Gillespie-Lynch, 2017; Firat, & Köksal, 2019). Such tools encourage collaborative online exchange and enable media integration while allowing individuals to rely on each other's awareness collectively. Social networking enables information to be "decentralized, available, and co-constructed by and among a broad user base." Common social networking resources include blogs, wikis, social bookmarking, RSS feeds, and podcasts. The popularity of these tools for social networking relies on promoting the exchange of knowledge and their engagement with other programs. The central tenet of all these instruments, as mentioned, is the element of social networking in which a user group is engaged in a shared cause. Specifically, wikis allow users to create and change a hypertext by inserting, removing or modifying any portion of it whenever and wherever they are, as long as digital devices have an Internet link (Lacabex & Gallardo-del-Puerto, 2020; Schmidtke-Bode & Kachel, 2020). In various forms of schooling, including primary and secondary schools, colleges and universities, they have been used for instruction. Wikis are known as forums where students can carry out their collective activity and where research is scaffolded by publishing practices in real time, observing work-in-progress, sharing and debating. As such, wikis for inquiry-based learning and co-construction of information are deemed appropriate. The value of Wikis focuses on three categories: educational, social, and technological (Berdun, Armentano, Berdun, & Mineo, 2018; Zenouzagh, 2020). The researchers observed that wikis's largely social affordability offers a straightforward medium for collaborative dispute resolution and peer review. The advantages of wiki include: (1) reducing the cognitive

workload of students, providing functionalities such as spell checks; (2) improving the reasoning bundle for the individual students, thereby reducing the need for information-searches.

### **Collaborative and Cooperative Writing**

As a positive method of student promotion, collaboration is widely recognized. In this regard, the wiki is a virtual application that encourages shared production of content, as has been shown in empirical studies of collaborative writing activities (Azkarai & Kopinska, 2020; Marcos, Fernández, González & Phillips-Silver, 2020; Murphy, Harris, Estabrooks & Wolf, 2020; Reig, 2020). However, the degree to which coordination occurs has yet to be clarified. Students have been inspired to perform more than standard mainstream teaching and learning approaches through the pedagogical concepts of utilizing wikis in classrooms and the collaborative architecture of wikis. Typically, community learning tasks are divided into two main types, 'cooperation' and 'collaboration,' in which groups compose of people working together for a common objective. Collaboration refers to a coordinated, synchronous mechanism that is the product of a constant attempt to establish and preserve a shared view of an issue, while cooperation refers to the division of work between entities, with each and every entity being responsible for a certain part of the problem solving (Méndez-Medina, et al, 2020; Jiang & Zhang, 2020). We can identify three critical aspects of collaborative prose. One, participants' contributions are expressed in gratitude. Participants contribute their talents, personal perspectives, and observations equally and independently to fulfill a common goal, and peers evaluate these contributions. Two, group research is achieved by constructive negotiation. Even if members of the group respect each other's efforts, agreements would not be made without the negotiation process. Three, collective success is improved by cycles of exploratory conversations. Daily discussions that capture the results of difficulties, counter-challenges, justifications, and alternative hypotheses and explanations create essential awareness.

Cooperation tends to help support student learning by leveraging web-based technologies such as the wiki (Al-Ahdal, 2020; Al-Ahdal, et al, 2017; Elabdali & Arnold, 2020; Teng, 2020). A wiki environment allows learners to engage in group tasks, such as communicating and exchanging thoughts, joining dialogs, observing the learning process, and decision-making. However, researchers have indicated that actual collective literature cannot be supported effectively by this. The definition of teamwork itself must be grasped correctly and students must be presented with

the expertise and tools to handle and upgrade the technology's benefits (Yanguas, 2020; Sundgren & Jaldemark, 2020). Therefore, it is important to assess shared interaction metrics when assessing wiki usage for collaborative writing and to research whether students are actually engaged in constructive dialog in a sense of mutual respect.

### **Research Objectives**

This paper set out to analyze the pedagogical importance of wikis by utilizing a combined qualitative and quantitative method and analyzing shared written interventions. The study's goal was to explore the direct relation between joint activities and the quality of the group's performance. We assessed the level of participation of students in collective community writing in a wiki project and whether this cooperation was related to positive learning performance.

### **Methodology**

#### **Research Design**

Due to such a hybrid process, both qualitative and quantitative data were obtained. By triangulation, the method promotes concrete meanings. Research on mixed approaches builds on the possible benefits of both qualitative and quantitative methods that allow researchers to investigate multiple viewpoints and reveal interactions within the dynamic layers of our multifaceted research questions.

#### **Research Participants**

In the 2019-2020 academic year, 50 Saudi EFL students from 6 classes participated voluntarily in this study. Of these students, 25 were students from Form 1 and 25 were students from Form 3. The questionnaire was addressed by all members, while a subgroup attended the community interviews.

#### **Procedure**

The classrooms engaged in a five-month group initiative during the COVID 19 time to increase instructor awareness. Students chose a relevant topic, gathered similar details and published a lengthy article (2500-3500 words) in groups of 4 or 5. The project involved the usage of a PBworks

wiki, a text-based networking web site, for which learners would swap files and outputs, share ideas and feedback, and co-construct their written content. A step-by-step video guide to use PBworks for collaborative community writing was introduced to the students before the group project was initiated. Teachers funded the collaboration activities during the initiative. Whilst our objective was to track the natural number of events posted on the Wiki, there were little specific rules for teachers other than their daily lesson plans a part of which was to monitor the writing activity on a daily basis.

## **Research Measurement**

### **Writing Performance**

The quality of the group writing projects was analyzed by 6 secondary school teachers of EFL based on a rating rubric consisting of seven fields: scope of analysis, research methods, perception of evidence, conclusion, viable proposals, visual presentation and oral presentation. The students were ranked from 0 to 5 in each area (0 being bad, 5 being excellent).

### **Perception of the Value of Wiki Writing**

To analyze students' thoughts about the pedagogical importance of PBworks, a questionnaire was used. According to five classes, fifteen questions evaluated the views of the students on the utility of PBworks: (1) learning performance, (2) inspiration, (3) community engagement, (4) ease of usage of technology, and (5) information management. Students gave scores from "Strongly Disagree" (1) to "Strongly Agree" (5) on the five-point Likert scale. Aspects assumed to contribute to the pedagogical importance of wikis were discussed in the first four categories. The role of wikis in knowledge building was discussed in the fifth category, as wikis are intended to promote knowledge management. A fluent Cantonese-speaker, who is also an English language professor, translated the questionnaire into Chinese.

### **Data Analysis**

All data was analysed using the SPSS software (Windows version 16.0). The intra-class affiliation of the revision type raters was determined. A good deal was achieved with the two raters that showed 82.1% consensus. In addition, an agreement was achieved among the raters of the Cohen's Kappa Group interviews. The overall solution was good to decent ( $K=66$ ) and in terms of

individual problems ranged from fair to exceptional. The single-sample examination of Kolmogorov Smirnov showed that the survey findings were not generally distributed and the non-parametric method was used for review of data. The interactions between the five latent groups were determined to verify whether empirically acceptable theoretical reasons for the analysis existed. Cronbach's alpha coefficient 0.7 or higher was rated sufficient for use of the questionnaire.

### **Group Writing Quality**

Based on instructor points, the most successful group and the least effective group were selected from each class. Further, when two classes shared the same scores, 4 top-performing groups and 4 poor-performing groups were selected. The major dependent variable was the number of collaborative transformation strategies. Independent variables for uniformity (best or worst), curriculum norms (form 1 or form 3) and instructional strategies were used (accommodation or assimilation). Although the dependence component was not consistently calculated, it was not necessary to take vernacular statistics such as ANOVA or linear regression. Therefore, a Generalized Linear Mixed Model (GLMM) was used to quantify the effect of group writing on coordination as a GLMM does not have to follow requirements, for example normality or uniformity and is therefore a workable choice. Secondly, an appropriate model is chosen and only the independent variables are used, which together have the strongest variable-based estimate. Independent variables were included in the better fitting model if the Aikake Knowledge Parameters (AIC) were decreased by 2 level. The answers of the participants to the interview questions were illustrated in the above sense to promote the research phase. In semi-structured interviews, students' answers to open queries and their written input are compiled as an important way to evaluate the textual data or correspondence material within a defined framework through content review.

### **Results and Discussion**

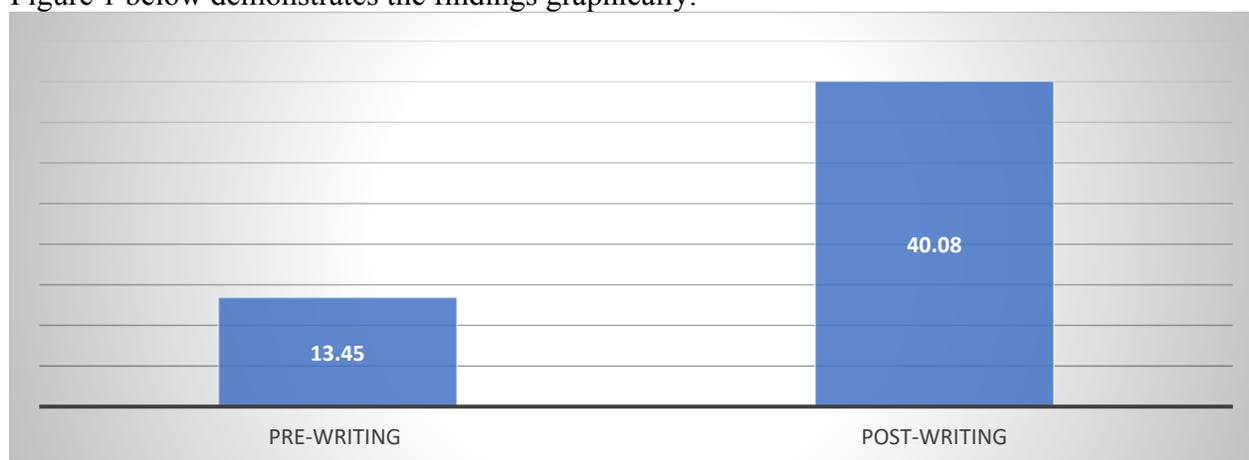
Table 1 shows the pre-writing and post-writing performance of the respondents using the wikis when standardized writing tests were administered to them in the two phases. It can also be seen in table 1 below that the post writing score of the students is an improved value of 40.08 as compared to the prewriting score of 13.45. Though the post-writing score is higher than the pre-writing score, the descriptive interpretation is just the same, which is very good. Since there was

no other change in the writing class pedagogy except for the lanned intervention, we can conclude that the use of wiki writing technique during the pandemic improved the students' writing.

**Table 1. Academic Performance of the Respondents**

Score Range	Descriptive Interpretation	Pretest f	Posttest f
41-50	Excellent	3	16
31-40	Very good	5	4
21-30	Good	15	4
11-20	Fair	0	1
10 below	Poor	0	0
	<b>Total</b>	<b>25</b>	<b>25</b>
Pre-writing score= 13.45 (Fair)		Post-writing score= 40.08 (Very good)	

Figure 1 below demonstrates the findings graphically.



**Figure 1. Test of Difference on the Perception of the Respondents o the use of Wiki Activities**

### **Difference between the Pre and Post Writing Scores of the respondents using wiki writing**

As reflected in Table 2, a significant difference is seen between the pretest and posttest administered to the students with the computed t-value of 24 and p value of 0.003, which is more than the significance value of ( $p < 0.05$ ) despite the increase in the mean computation. This finding generally implies that when requiring students to write, the teacher must consider the learner's multiple intelligences. Although it requires critical thinking in the wiki writing strategy, various different bits of intelligence are not considered. The intervention must be based on the strengths and weaknesses of the learners.

**Table 2. The difference between the pretest and posttest performance of the experimental group**

Writing scores	Mean score	SD	Interpretation	t-value	Df	P
Pre-writing score	13.45	5.35	Very good	24	-3.31	0.003**
Post-writing score	40.08	7.79	Very good			

\*\*= significant at 0.05 level

**Table 3. The difference between the pre-intervention attitude scores and post intervention attitudes scores of the experimental group**

Writing Attitude	Mean score	SD	t-value	Df	P
Pre-intervention	2.45	.664	-0.426	24	0.002*
Post-intervention	3.55	.596			

Figure 2 below demonstrates the comparisons of the pre and post intervention changes in participants' writing attitudes and scores.

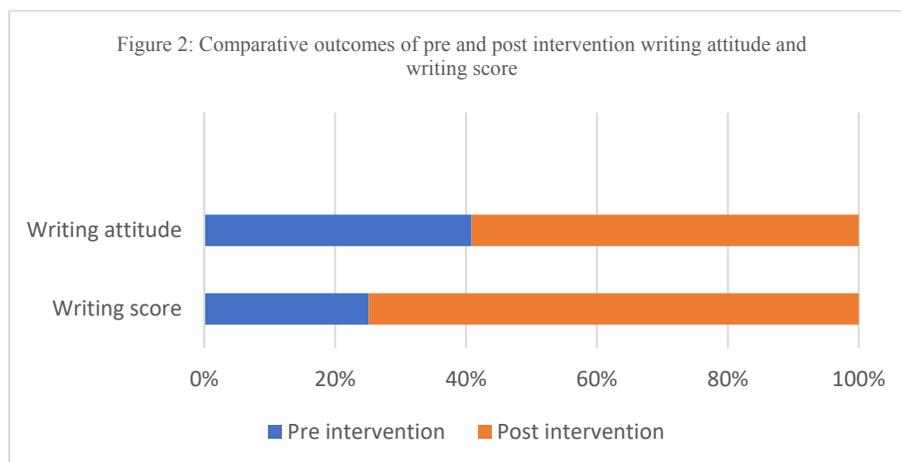


Figure 2 which is representative of data in tables 2 and 3 displays the difference between the pre and post intervention attitude scores of the respondents. This was computed to determine whether there was a significant attitudinal change in students towards writing after implementing the wiki writing as a digital brainstorming technique. Though there is an increase in the mean of posttest attitude (3.55) compared to the pre-intervention attitude (2.45), the statistical difference is significant with the computed t-value of 0.426 and p value of 0.674 which is more than the significance value of ( $p < 0.05$ ).

## **Discussion**

This paper intended to add to the proof supporting the utilization of wikis as a learning resource in group writing activities by researching the degree to which Saudi EFL understudies occupied with coordinated effort while working collaboratively to write on wiki pages. Moreover, the examination sought to discover whether there was a positive relationship between this coordinated effort and collaborative work execution. The following segments discuss the key findings in relation to previous studies.

### **Collaboration and Writing Quality**

In accordance with past studies (Issa, 2020; Khoynaroud, et al, 2020; Lau, et al, 2017; Qiu & Lee, 2020; Sharp, 2018; Yamaç Öztürk, & Mutlu, 2020), the current investigation found a positive relationship between cooperation and the nature of collective/gathering composing. Cooperation positively affects learning results, and this seems to have been the case in the current investigation. By and large, the principal results recommend that wiki gathering composing execution through coordinated effort (instead of collaboration) contributed to enhancement of writing proficiency. Eight kinds of modifications were recognized and isolated from the wiki stage, and the discoveries show that understudy groups with higher composing execution were the ones who occupied with more prominent shared exercises on the wiki. This proposes that an immediate connection between community-oriented exercises and yield quality exists in wiki-based gathering composing. Besides adding to the developing proof supporting wiki for communitarian composing, the novel procedure utilized in this current examination for dissecting synergistic exercises on the wiki is one that future investigations may utilize. In general, the participants who habitually amended their work on PBworks seemed to have connected generously in the eight kinds of correction. They added and changed their own work, yet redesigned and revised others' work, subsequently appearing to be occupied with cooperation. Interestingly, the groups that produced poor writing quality were scarcely occupied with community-oriented learning despite the wiki site's shared functionalities. These discoveries propose that the wiki might uphold online synergistic composition. At the point when the participants utilized the accessible synergistic functionalities, they had the option to create great written products. Notwithstanding, a few of the participants didn't like the advantages of this sort of learning technique.

## **Practical Implications**

While PBworks promoted teamwork and significantly increased community writing standards, there seemed to be space for progress. For instance, not all students displayed strong degrees of cooperation; while some also showed no coordination at all. In comparison, observations from the interviews and questionnaires found that students still had marginally favorable attitudes towards PBworks' pedagogical importance as compared to conventional writing classrooms. This is not to suggest that the students displayed pessimistic views. Overall, even though the interview questions expressly questioned students to share their unpleasant experiences, the findings tended to be more optimistic than negative attitudes. Rather, it is possible to interpret the questionnaire and interview answers as not uniformly favorable and thus have potential for change. A potential future change may be to eliminate some barriers currently stopping certain students from making more comprehensive use of wikis, considering the wiki's beneficial function in promoting communication and writing results. One significant obstacle seemed to be the shortcomings of students in running the technology. Some reported that it was challenging to run PBworks, although others considered it inconvenient, being unused to it. Indeed, it was proposed in a recent study by Stoddart and colleagues that interactive wiki-based writing may be effectively encouraged if an instructor, who is a specialist in wiki usage, properly applied the technology to students. Teachers' competency with their own technology is considered a requirement for helping students who have challenges in operating emerging technologies. Therefore, we suggest that teachers themselves strive to sustain a reasonable degree of technical literacy. The actions of teachers and school administrators affect the usage of technology by pupils, in addition to the teacher's experience. Students' values and aspirations are implicitly influenced by whether their mentors show their tolerance to multimedia tools for learning. In the current research, several students focused on other known applications, such as MS Word, despite technological assistance while utilizing an online tool, before uploading the result. This means that educators will need to inspire students to cooperate and utilize the technology that facilitates cooperation and not be stuck in paradigms for the sake of familiarity. The future rewards of competition over teamwork might also be necessary for teachers to make clear. Pedagogical activities will need to be directed at developing students' behaviors and abilities through the usage of social media instruments.

## **Conclusion**

Wiki writing as a language education mechanism is still under study and is one of the most debated subjects for linguists, methodologists, and students. However, the study indicates that wiki writing is a strong pedagogical tool. The study clearly established that young learners today are inseparable from technology, it now rests on the teaching community to utilize this fact to the best advantage of the students. When integrated into the everyday school experiences, wiki writing will enable students to learn, listen, write, grammar and vocabulary. Further, it can be a great tool in foreign language learning as users get exposure to writing in other language(s) which promotes comprehension of two language systems and strengthens students' translating abilities. It is an efficient, legitimate way of learning the foreign language to build English awareness in the university classroom. Wiki writings cannot be overused and incorporated into language education at the right moment with the right students.

## **Recommendation and Implications**

Due to the structural and cultural barriers in Arabic wiki writing into English, teachers can use an independent learning method that encourages low-level English mastery through constructive learning and self-monitoring and only calls on colleagues and teachers to fix mistakes. The effects of the research on pre-wiki writing techniques provide realistic lessons and learning consequences in language learning to provide students a greater chance to improve their communicative skills. This research notes that even though students' grammatical abilities are poor in English, their desire to communicate in English is undeterred. It ensures that language teachers must be prepared to follow an eclectic approach to teaching in English such that students are interested in learning the language rules and introducing them to the actual implementation of language usage. The use of appropriate approaches for the personalities, types and inclinations of students should be considered in language teaching.

## **Limitation of the Study**

Experiments with students in various contexts, for example, in different universities in Saudi Arabia, may also be feasible. Alternatively, wiki writing can be tested at varying times in the same environment. Also, participants' accuracy outcomes may be triangulated through inventories and surveys of interviews of a reasonably limited number of participants in each group.

## References

- Adnan, M., & Anwar, K. (2020). Online learning amid the COVID-19 pandemic: Students' perspectives. *Online Submission*, 2(1), 45-51.
- Al-Ahdal, A. A. M. H. (2020). Translanguagism and the Bilingual EFL Learner of Saudi Arabia: Exploring New Vistas. *Asian EFL Journal*, 27(1), 14-26.
- Al-Ahdal, A. A. M. H., Alfallaj, F. S. S., Al-Awaid, S. A. A., & Al-Mashaqba, N. J. A. H. (2017). Translation courses at Qassim University, Saudi Arabia: A study of existing problems and possible solutions. *US-China Foreign Language*, 15(3), 173-188
- Alfallaj, F. S. S. (2020). Technology in Saudi EFL undergraduate classrooms: learning tool or weapon of distraction? *The Asian ESP Journal*, 16 (4), 97-115.
- Al-Ahdal, A. A. M. H. (2013). Integration of information and communication technology (ICT) into the education system of Yemen: The need of the hour. *International Journal of Social Science & Education*, 3(3)-597-604.
- Alharbi, M. A. & Al-Ahdal, A.A.M.H. (2013). MALL in collaborative learning as a vocabulary enhancing tool for EFL learners: A study across two universities in Saudi Arabia. <http://doi.org/10.31124/advance.10053137.v1>.
- Ali, A. M. H. A. (2020). Effectiveness of the use of electronic educational blogs in teaching computers on the achievement of students. *Indonesian Journal of Electrical Engineering and Computer Science*, 17(1), 489-499.
- Alkhataba, E. H. A., Abdul-Hamid, S., & Ibrahim, B. (2018). Technology-supported online writing: an overview of six major web 2.0 tools for collaborative-online writing. *Arab World English Journal (AWEJ) Volume*, 9.
- Almakrob, A, Y., & Al-Ahdal, A. A. M. H. (2020). An Investigation of the Near-Synonyms in the Quran: A collocational Analysis. *The Asian ESP Journal*, 21, 327-341.
- Al-Samarraie, H., & Saeed, N. (2018). A systematic review of cloud computing tools for collaborative learning: Opportunities and challenges to the blended-learning environment. *Computers & Education*, 124, 77-91.
- Al-Shehari, K., & Al-Sharafi, A. G. (2020). Negotiating Wikipedia narratives about the Yemeni crisis: Who are the alleged supporters of the Houthis?. *Media, War & Conflict*, 1750635220938404.
- Altay, A. (2018). *Exploring the effects of feedback types and wiki on EFL learners' writing performance* (Master's thesis, Master's Thesis). Retrieved from YÖK database.(Accession No: 514548)).
- Arnold, N., Ducate, L., & Kost, C. (2018). Collaboration Two-Way. *IALLT Journal of Language Learning Technologies*, 48, 1-24.
- Azkarai, A., & Kopinska, M. (2020). Young EFL learners and collaborative writing: A study on patterns of interaction, engagement in LREs, and task motivation. *System*, 94, 102338.
- Berdun, F. D., Armentano, M. G., Berdun, L., & Mineo, M. (2018). Classification of collaborative behavior from free text interactions. *Computers & Electrical Engineering*, 65, 428-437.
- Biasutti, M. (2017). A comparative analysis of forums and wikis as tools for online collaborative learning. *Computers & Education*, 111, 158-171.
- Biasutti, M. (2017). A comparative analysis of forums and wikis as tools for online collaborative learning. *Computers & Education*, 111, 158-171.
- Chen, W., & Hapgood, S. (2019). Understanding knowledge, participation and learning in L2 collaborative writing: A metacognitive theory perspective. *Language Teaching Research*, 1362168819837560.

- Chu, S. K. W., Zhang, Y., Chen, K., Chan, C. K., Lee, C. W. Y., Zou, E., & Lau, W. (2017). The effectiveness of wikis for project-based learning in different disciplines in higher education. *The internet and higher education, 33*, 49-60.
- Chu, S. K. W., Zhang, Y., Chen, K., Chan, C. K., Lee, C. W. Y., Zou, E., & Lau, W. (2017). The effectiveness of wikis for project-based learning in different disciplines in higher education. *The internet and higher education, 33*, 49-60.
- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems, 49*(1), 5-22.
- Elola, I., & Oskoz, A. (2017). Writing with 21st century social tools in the L2 classroom: New literacies, genres, and writing practices. *Journal of Second Language Writing, 36*, 52-60.
- Firat, E. A., & Köksal, M. S. (2019). Effects of instruction supported by web 2.0 tools on prospective teachers' biotechnology literacy. *Computers & Education, 135*, 61-74.
- Franco-Camargo, L. F., & Camacho-Vásquez, G. (2018). The Impact of Wikis & Videos Integration through Cooperative Writing Tasks Processes. *English Language Teaching, 11*(5), 116-129.
- Franco-Camargo, L. F., & Camacho-Vásquez, G. (2018). The Impact of Wikis & Videos Integration through Cooperative Writing Tasks Processes. *English Language Teaching, 11*(5), 116-129.
- Gokbel, E. N. (2020). Online Collaborative Learning in Pre-Service Teacher Education: A Literature Review. In *Handbook of Research on Fostering Student Engagement With Instructional Technology in Higher Education* (pp. 288-304). IGI Global.
- Herrera-Pavo, M. Á. (2021). Collaborative learning for virtual higher education. *Learning, Culture and Social Interaction, 28*, 100437.
- Issa, T. (2020). e-Assessments via Wiki and Blog Tools: Students' Perspective. In *Educational Networking* (pp. 235-268). Springer, Cham.
- Jiang, D., & Zhang, L. J. (2020). Collaborating with 'familiar' strangers in mobile-assisted environments: The effect of socializing activities on learning EFL writing. *Computers & Education, 150*, 103841.
- Khoyaroud, A. A., Akbarzadeh, A., Ghojazadeh, M., & Ghaffarifar, S. (2020). Integrative Application of an Educational Wiki and Flipped Classrooms: Student Learning Outcomes and Impacts on Doing Academic Group-Works.
- Konstantina, C. (2017). Collaborative Writing within Wikis: The Impact of the Interaction between Native and Non-Native Speakers of the Greek Language on their Writing Skills. *Aristotle University of Thessaloniki*.
- Lacabex, E. G., & Gallardo-del-Puerto, F. (2020). Explicit phonetic instruction vs. implicit attention to native exposure: phonological awareness of English schwa in CLIL. *International Review of Applied Linguistics in Language Teaching, 58*(4), 419-442.
- Lau, W. W., Lui, V., & Chu, S. K. (2017). The use of wikis in a science inquiry-based project in a primary school. *Educational Technology Research and Development, 65*(3), 533-553.
- Luo, M. M., & Chea, S. (2020). Wiki use for knowledge integration and learning: A three tier conceptualization. *Computers & Education, 103920*.

- Marcos, R. I. S., Fernández, V. L., González, M. T. D., & Phillips-Silver, J. (2020). Promoting children's creative thinking through reading and writing in a cooperative learning classroom. *Thinking Skills and Creativity*, 100663.
- Méndez-Medina, C., Schmook, B., Basurto, X., Fulton, S., & Espinoza-Tenorio, A. (2020). Achieving coordination of decentralized fisheries governance through collaborative arrangements: A case study of the Sian Ka'an Biosphere Reserve in Mexico. *Marine Policy*, 117, 103939.
- Murphy, R., Harris, B., Estabrooks, A., & Wolf, N. (2020). Capturing stakeholder perspectives through a collaboration with a commercial fishing cooperative. *Marine Policy*, 117, 103948.
- Pinto-Llorente, A. M., Sánchez-Gómez, M. C., & García-Peñalvo, F. J. (2017, July). A mixed methods research of pre-service teachers' perceptions about the benefits of Wiki-based tasks and discussion boards. In *International Symposium on Qualitative Research* (pp. 260-276). Springer, Cham
- Qiu, X., & Lee, M. K. (2020). Regulated learning and self-efficacy beliefs in peer collaborative writing: An exploratory study of L2 learners' written products, task discussions, and self-reports. *System*, 93, 102312.
- Reig, A. (2020). Metacognitive regulation and metalinguistic activity during a collaborative writing composition process based on reading from sources. *Bellaterra Journal of Teaching & Learning Language & Literature*, 13(3), e857-e857.
- Schmidtke-Bode, K., & Kachel, G. (2020). Exploring the motivational antecedents of Nepalese learners of L2 English. *International Review of Applied Linguistics in Language Teaching*, 58(4), 379-418.
- Shane-Simpson, C., & Gillespie-Lynch, K. (2017). Examining potential mechanisms underlying the Wikipedia gender gap through a collaborative editing task. *Computers in Human Behavior*, 66, 312-328.
- Sharp, L. A. (2018). Collaborative Digital Literacy Practices among Adult Learners: Levels of Confidence and Perceptions of Importance. *International Journal of Instruction*, 11(1), 153-
- Sundgren, M., & Jaldemark, J. (2020). Visualizing online collaborative writing strategies in higher education group assignments. *The International Journal of Information and Learning Technology*.
- Verawardina, U., Asnur, L., Lubis, A. L., Hendriyani, Y., Ramadhani, D., Dewi, I. P., ... & Sriwahyuni, T. (2020). Reviewing online learning facing the COVID-19 outbreak. *Talent Development & Excellence*, 12.
- Wang, P., & Li, X. (2020). Assessing the quality of information on wikipedia: A deep-learning approach. *Journal of the Association for Information Science and Technology*, 71(1), 16-28.
- Yamaç, A., Öztürk, E., & Mutlu, N. (2020). Effect of digital writing instruction with tablets on primary school students' writing performance and writing knowledge. *Computers & Education*, 157, 103981.
- Yanguas, I. (2020). L1 vs L2 synchronous text-based interaction in computer-mediated L2 writing. *System*, 88, 102169.
- Zeidan, A. A., Alhalafawy, W. S., & Tawfiq, M. Z. (2017). The Effect of (Macro/Micro) Wiki Content Organization on Developing Metacognition Skills. *Life Science Journal*, 14(12).
- Zhang, S. (2019). The effectiveness of a wiki-enhanced TBLT approach implemented at the syllabus level in the teaching of Chinese as a foreign language. *Chinese as a Second Language Research*, 8(2), 197-225.