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# The Digital Classroom: Systematic Review of Use of English as a Foreign Language (EFL) in Teaching in Collaborative Online Settings

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**Abstract.** This study systematically reviews existing literature on the use of collaborative online settings for teaching English as a foreign language (EFL). Covering 37 peer-reviewed articles published between 2013 and 2024, the review examines various aspects of online collaborative EFL teaching, including the digital platforms utilized, the educational environments, and the specific language skills targeted. The findings indicate that collaborative online environments can enhance EFL learners' language proficiency through interactive learning, feedback techniques, and personalized learning. Additionally, the review found that such environments primarily improve learners' writing skills, with oral and speaking skills also benefiting. However, challenges such as learner distraction, Internet connectivity issues, lack of resources, and limited technical skills were identified as barriers to adopting collaborative online settings in EFL teaching. Strategies to mitigate these challenges such as the use self-created video materials, training, access to the Internet, among others, were discussed. The implications of these findings suggest that educators should incorporate digital collaborative tools to enhance learning outcomes, policymakers should support technological integration in language education, and researchers should address the identified gaps to develop more effective teaching strategies and educational policies.

**Keywords:** digital classroom; collaborative online learning; EFL; systematic review; digital learning

## 1. Introduction

Since the emergence of necessary technology developments, online education, or e-learning, has been a part of education. Many researchers and scholars have questioned and explored the effectiveness of online education and its effects on educators and learners since the COVID-19 global pandemic began (Yagmur, 2022). The COVID-19 epidemic has resulted in substantial modifications to all facets of education to accommodate the altered circumstances. The economy, health, education, and other sectors were all affected at the same time as the community was warned against having direct face-to-face encounters (Prasetya et al., 2022). Electronic learning has emerged as a suitable substitute for the pedagogical process, particularly in the field of education (Sun et al., 2020). Nowadays, a renewed focus on the use of technology in educational contexts has been sparked by the introduction of innovative technology applications (Smith et al., 2020). The proliferation of the Internet has contributed to a notable surge in the usage of technology in recent times. Many instructors have made the integration of technology in education their top priority owing to the excellent

effects it has had on their pupils (Hung et al., 2022; Teo et al., 2022; Yang et al., 2022). One of the most important aspects of using technology is communication because it allows friends, classmates, and specialists to interact globally. Students are exposed to more learning possibilities as a result of the development in communication (Sun, 2010).

In the field of instruction and learning English as a foreign language (EFL), the usage of technology has recently experienced a groundbreaking expansion (Kukulska-Hulme et al., 2017; Fathi & Rahimi, 2022). Students become active content creators with the help of technology (Du and Wagner, 2007). Technology also makes it possible for students to access an unrestricted variety of real resources. It raises the sense of ownership and responsibility and promotes real communication between teachers and peers (Sun, 2009; Arslan & Sahin-Kızıl, 2010).

Collaborative learning is a method of education that emphasizes students' active contributions to expand their knowledge with minimal teacher support. Typically, students work in groups of two or more, engaging in activities such as finding learning materials, creating study plans, absorbing information, discussing topics, and completing tasks. This approach relies heavily on students' self-study skills and their ability to cooperate with one another (Bui et al., 2021). Recently, collaborative learning has become a prominent trend in education, encouraging students to build knowledge through discovery, discussion, and teamwork. Collaboration is now recognized as one of the four essential skills for the 21st century, along with communication, critical thinking, and creativity (Cox, 2014; Nadiyah & Faaizah, 2015). This collaborative learning environment can occur either face-to-face or online.

Many of the advantages of in-person collaborative learning are also enjoyed by students who participate in online collaborative learning (Badr, 2020). In order to enhance and improve student learning, online collaborative learning, also known as computer-supported collaborative learning, attempts to give a group of students access to an online environment that supports and facilitates cooperation (Kreijns et al., 2003). This is typically accomplished by giving students additional opportunity and time to practise what they have learned, as well as by providing online resources that are intended to facilitate the process of c-constructing and exchanging information, knowledge, and ideas (Fjermestad, 2004). According to González-Lloret (2020), online collaborative learning offers significant benefits when students are given equal opportunities to participate, more time for interaction, and more constructive feedback. The rapid development of new technologies that support both individual and group writing has sparked a growing interest in online collaborative writing. With the advancement of Web 2.0 technologies and educational social software, EFL tasks are shifting from being self-directed to more collaborative. This shift is due to the benefits collaborative work brings to text production (Dobao, 2014; McDonough & De Vleeschauwer, 2019; Storch, 2013). Furthermore, active collaboration has been shown to provide cognitive advantages and promote development (Hsu, 2020). Online collaboration encourages active use of the English language among students. Through

socializing and working together, many students demonstrate strong commitment and high levels of interaction to solve problems and complete tasks. This process tests both their writing and interpersonal skills as students learn to make new friends, share their views, accept differing opinions, and delegate tasks (Shehadeh, 2011).

The COVID-19 epidemic has caused a swift transition to digital classrooms, which has drastically changed how English is taught to foreign students (Kılınç & Yüksel, 2024). There are frequently few opportunities for students to practise speaking and writing in English in traditional EFL classrooms (Hwang et al., 2016). Because non-English speaking students lack confidence to speak English, they cannot be motivated to do so (Tai & Chen, 2020). With the help of online language exchanges, students may be able to interact authentically with native speakers and other L2 learners (Watkins, 2019; Hagley, 2020; O'Dowd, 2021). This could improve their speaking abilities and willingness to communicate (Rahimi & Fathi, 2022).

Current studies have highlighted the importance of flexible strategies for integrating technology in EFL classrooms; however, there is a need for more standardized frameworks that can be universally applied. For instance, the systematic review by Shamshul et al. (2024) emphasizes the significance of digital literacy; nevertheless, a comprehensive framework for implementation has not been fully explored. Furthermore, while research has shown that teachers' confidence in using technology is crucial, there is a gap in understanding the specific training needs and the impact of technological competence on teaching effectiveness in collaborative online settings. Studies such as those by Bui (2022) touch on these issues but do not provide detailed insights into the training programmes that could bridge this gap. Hence, the primary objective of this systematic review is to evaluate and synthesize current research on EFL teaching in collaborative online settings. By examining a range of studies, this review aims to identify and assess the impact of collaborative online teaching and learning on student engagement and learning outcomes, and uncover the challenges and limitations encountered by educators and learners.

This review seeks to address several key research questions:

1. How do collaborative online settings impact the language proficiency of EFL learners?
2. What are the specific learning outcomes mostly studied and positively affected by collaborative online EFL teaching?
3. What digital tools and platforms are mostly used to facilitate collaborative learning in EFL classrooms?
4. What are the common challenges faced by students and teachers in collaborative online EFL classrooms? How can these challenges be mitigated to improve the effectiveness of EFL teaching in digital collaborative environments?

The significance of this study extends beyond immediate educational practice. Its findings have the potential to inform policy decisions, guide the development of new teaching methodologies, and inspire future research in the field of EFL. By

systematically reviewing the current landscape of EFL teaching in collaborative online settings, this study aims to contribute to the ongoing enhancement of language education in the digital age.

## **2. Methodology**

For this review, data collection and analysis were conducted using a systematic methodology in accordance with Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) principles (Page et al., 2021; Bamiro et al., 2024). As a first step, a review procedure, precise inclusion and exclusion standards, and a search plan were established. Articles released in the years 2013 through 2024 were taken into consideration for this assessment to cover current and modern research on technology use in EFL teaching within the past decade.

### **2.1 Search strategy**

In-depth searches were conducted of all relevant databases, including Scopus and Google Scholar, to find academic publications relating to the use of collaborative online environments in EFL instruction. For this inquiry, only articles released after 2013 were taken into consideration. Google Scholar was also utilised to find relevant papers that answered the study questions. The search technique was improved by using a wide variety of terms and creating a complex search query in Scopus that made use of Boolean operators, truncation, wildcard entries, and phrase searches. According to earlier research, these databases were chosen because of their large collections and strong search capabilities (Gusenbauer & Haddaway, 2020). With the use of Boolean operators, users of Scopus may conduct both simple and advanced searches and filter their results according to a variety of parameters, including document type, date, subject, author, and recent publications. In accordance with the study topic and research objectives, pertinent keywords were chosen and employed. Keywords used include “digital classroom”, “collaborative online learning”, “collaborative online setting”, “EFL”, “English as foreign language”, “language proficiency”, “digital tools”, “digital platform”, “challenges”, “barriers”. The research methodology was further reinforced by employing Boolean operators "AND" and "OR" in conjunction with keywords related to the research questions.

### **2.2 Eligibility**

A thorough examination of article titles and abstracts was conducted as part of the selection process to ensure that they were pertinent to the study topic (Rus et al., 2023; Utaminingsih et al., 2023). Excluded from the final compilation were duplicates and articles that did not directly pertain to online collaborative learning, conference papers, books, book chapters, or collaborative learning in the context of English language learning or teaching. Articles that at different points met the inclusion criteria were taken into consideration for additional analysis (Table 1). These papers' methodology, findings, and discussion sections were carefully examined to determine how well they addressed the research questions. In all, 37 publications were determined to be study-eligible.

**Table 1. Inclusion and Exclusion Criteria**

<b>Criteria</b>	<b>Inclusion</b>	<b>Exclusion</b>
Article language	English	Non-English
Year	2013 and above	Below 2013
Paper type	Peer reviewed articles	Conference paper, book, book chapters, online articles
Collaborative learning type	English as foreign language, online	Not English as foreign language and not online collaborative learning or digital collaborative learning

### 2.3 Selection process

The effectiveness of collaborative online environments in teaching English to speakers of other languages was investigated through an extensive and methodical assessment of the literature. Using specific keywords, 235 relevant articles were first found. A total of 202 papers were left for initial screening based on their titles and abstracts after duplicates had been eliminated. From these, 114 articles were selected for a detailed full-text review following further exclusions. The methodology, findings, and discussions of these articles were carefully scrutinized in order to determine their applicability to the study topics. To guarantee the calibre and relevance of the chosen articles, a number of standards were applied, such as the removal of conference proceedings, pointless articles, books, and extra copies. A total of 37 papers were found to be relevant and included in the systematic literature review as a consequence of this meticulous methodology. Important data was taken from these publications and methodically arranged for ease of understanding and analysis, including author names, publication years, research methodologies, conclusions, and implications (Salisu et al., 2024).

### 2.4 Data collection and analysis

During the analysis phase, the evaluated publications were scrutinized for particular details, such as publication details including the title, author, country of the authors, country where the research was conducted, and year of publication. The study also took a number of other factors into account that described the projects in the publications, including the language skills studied, the digital tools and platform used for online collaborative learning, and the target audience (which was divided into pre-schools, primary schools, secondary schools, and higher education institutions). In addition, the research findings were enriched with insights from the examined research publications. These, along with the goals of the study, allowed inferences to be made about the effects of collaborative online contexts on EFL instruction. The identification of gaps in the research field was facilitated by exploring suggestions for more study. The PRISMA flow diagram of the included articles is shown in Figure 1. The data extracted are presented in Table 2.

### 3. Results and Discussion

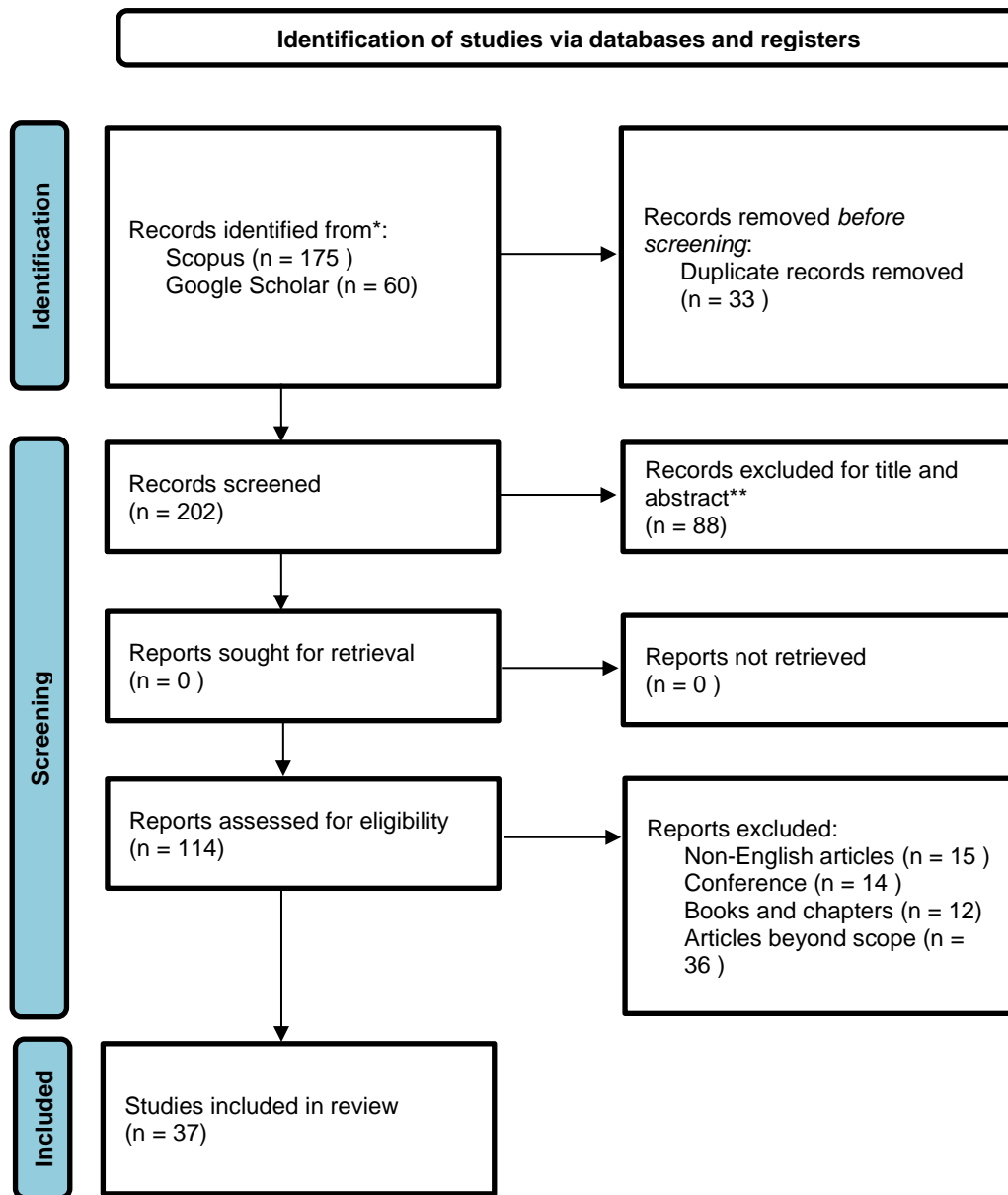


Figure 1. PRISMA flow diagram

Table 2. Data Extraction Table

S/N	Author (Year)	Data collection method	Sample size and research domain	Country of research	Digital tool/platform	Journal
1	Shahidan et al. (2022)	Descriptive survey	80 university students	Malaysia	Google Docs	International Journal of Social Science and Human Research
2	Abdullah et al. (2022)	online descriptive survey	80 university students	Jordan	Facebook, Twitter, and YouTube	Pubmedia Jurnal Pendidikan Bahasa Inggris
3	Wu et al. (2022)	Survey and interview	51 post-secondary students	China	WhatsApp Moodle, Microsoft Teams	Lingustic, Literature and English Education
4	Al Ghazali (2020)	Survey questionnaire	350 undergraduate university students	UAE	SNS (Livemocha, iTalki, Lang-8, Hello-Hello, Duolingo, Palabea)	International Journal of TESOL & Education
5	Bikowski and Vithanage (2016)	Pre-test post-test research model, survey questionnaire, interview, and observation	59 university students	USA	Not mentioned	International Journal of Social Science and Human Research
6	Bui et al. (2021)	Survey questionnaire	60 university students	Vietnam	Not mentioned	Pubmedia Jurnal Pendidikan Bahasa Inggris
7	Ashraf and Salami (2014)	Pre-test and post-test	118 pre-intermediate university students	Iran	Emailing, chatting, and weblogging	Lingustic, Literature and English Education
8	Rahimzadeh and Gilakjani (2022)	Pre-test and post-test	60 EFL learners	Iran	Not mentioned	International Journal of TESOL & Education
9	Challob et al. (2016)	Semi-structured interview	12 high school students	Malaysia	Class blog and online Viber discussion	International Journal of Social Science & Human Research
10	Razak et al. (2013)	Survey questionnaire	24 active and regular EFL learners	Malaysia	Facebook	Pubmedia Jurnal Pendidikan Bahasa Inggris
11	Bailey and Judd (2018)	Pre-test post-test	65 university students	South Korean	Facebook	Lingustic, Literature and English Education
12	Avci and Adiguzel (2017)	Semi-structured interview and focus group discussion	85 university students	Turkey	WhatsApp	International Journal of TESOL & Education



13	Zhou (2023)	Survey questionnaire and semi-structured interview	58 postgraduate students	China	Tandem language learning program	International Journal of Social Science and Human Research
14	Han (2023)	Pre-test post-test	49 EFL students in a language school	China	Blog	Pubmedia Jurnal Pendidikan Bahasa Inggris
15	Dai et al. (2023)	Pre-test post-test	53 EFL students in a foreign language school	China	wiki	Lingustic, Literature and English Education
16	Badr (2020)	Pre-test post-test	25 first-year university students	Egypt	Zoom	International Journal of TESOL & Education
17	Azodi et al. (2020)	Pre-test post-test	74 university students	Iran	Telegram	International Journal of Social Science and Human Research
18	Jiang and Eslami (2022)	Pre-test post-test	135 non-native English speakers with in a language school	Qatar	Not mentioned	Pubmedia Jurnal Pendidikan Bahasa Inggris
19	Khalifa (2022)	Pre-test post-test	60 secondary school students	Egypt	Emails and blogs, app (Edmodo)	Lingustic, Literature and English Education
20	Jeong (2019)	Survey questionnaire and semi-structured interview	64 university students	South Korea	Not mentioned	International Journal of TESOL & Education
21	Kılınç and Yüksel (2024)	Pre-test post-test	26 university students	Turkey	Not mentioned	International Journal of Social Science and Human Research
22	Hosseinpour et al. (2019)	Pre-test post-test	120 university students	Iran	Edmodo	Pubmedia Jurnal Pendidikan Bahasa Inggris
23	Edwards et al. (2019)	Survey and interviews	154 university students	Ecuador	Moodle platform	Lingustic, Literature and English Education
24	Rahimi and Fathi (2022)	Survey	67 university students	Iran	Wiki platform	International Journal of TESOL & Education
25	Fischer and Yang (2022)	Pre-test post-test	54 university students	Taiwan	YouTube	International Journal of Social Science and Human Research
26	Kitjaroonchai and Suppasetsee (2022)	Pre-test post-test	102 undergraduate university students	Thailand	Not mentioned	Pubmedia Jurnal Pendidikan Bahasa Inggris
27	Li (2023)	Pre-test post-test	58 intermediate Chinese EFL learners	China	Tencent Docs	Lingustic, Literature and English Education

28	Syarifudin (2023)	Survey and semi-structured interview	26 university students	Indonesia	Zoom and Google Docs	International Journal of TESOL & Education
29	Fitria et al. (2023)	Close-ended questionnaire	20 university students	Indonesia	Google Docs	International Journal of Social Science and Human Research
30	Ermawati et al. (2021)	In depth interview	3 EFL teachers	Indonesia	Not mentioned	Pubmedia Jurnal Pendidikan Bahasa Inggris
31	Dewi et al. (2023)	Interview	16 EFL teachers	Indonesia	Not mentioned	Lingustic, Literature and English Education
32	Zangana and Nesrallah (2023)	Interview	41 English language instructors at a university	Iraq	Not mentioned	International Journal of TESOL & Education
33	Altakhaineh et al. (2023)	Interview	30 secondary school teachers and 20 secondary school students	Jordan	Not mentioned	International Journal of Social Science and Human Research
34	Utami et al. (2023)	Interview	2 English teachers	Indonesia	Not mentioned	Pubmedia Jurnal Pendidikan Bahasa Inggris
35	A'isy et al. (2024)	Interview	2 English teachers	Indonesia	Zoom	Lingustic, Literature and English Education
36	Lodo and Ajito (2022)	Interview	10 university students	Indonesia	Not mentioned	International Journal of TESOL & Education
37	Nguyen Tat and Nguyen Thi Ngoc (2023)	Interview	10 EFL instructors	Vietnam	Video conferencing	International Journal of Social Science and Human Research

### 3.1 Distribution of reviewed articles by year

To capture the implementation of online collaborative learning in EFL teaching and assess its impact on learning outcomes, this study reviewed scholarly articles published in the past decade. Analysis of these articles revealed that six articles, representing only 16%, were published between 2013 and 2018. However, there was a noticeable increase in the number of published articles from 2019 to 2023. The years 2022 and 2023 had the highest numbers, with ten and eleven articles, respectively. This surge is likely due to the COVID-19 pandemic, which prompted a shift from traditional face-to-face classes to online and digital learning environments. According to Saraç and Doğan (2022), since more and more people were becoming interested in using digital platforms, many educational institutions had already planned to provide online courses. However, the COVID-19 pandemic hastened this process, making it imperative for schools to adopt online learning. Figure 2 shows the yearly distribution of the reviewed articles:

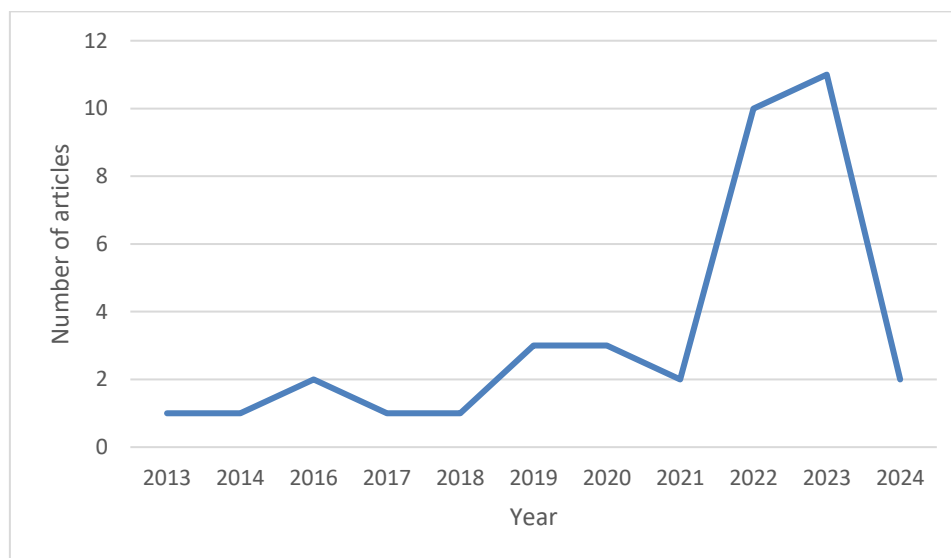
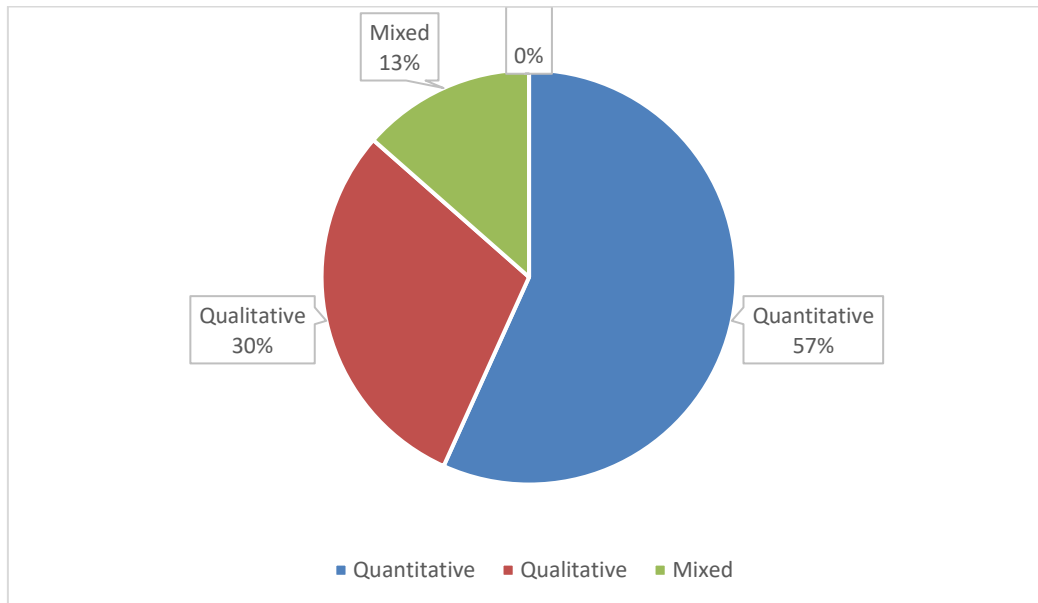


Figure 2. Distribution of Articles by Year of Publication

### 3.2 Methodology used by reviewed articles and data collection technique

The methodologies used in the reviewed articles were analyzed to understand the approaches researchers adopt in exploring collaborative online learning in EFL teaching. A significant majority, 57%, employed quantitative methods, while 30% used qualitative methods. The remaining 13% utilized a mixed-methods approach. The type of methodologies used by the reviewed articles are depicted in Figure 3.

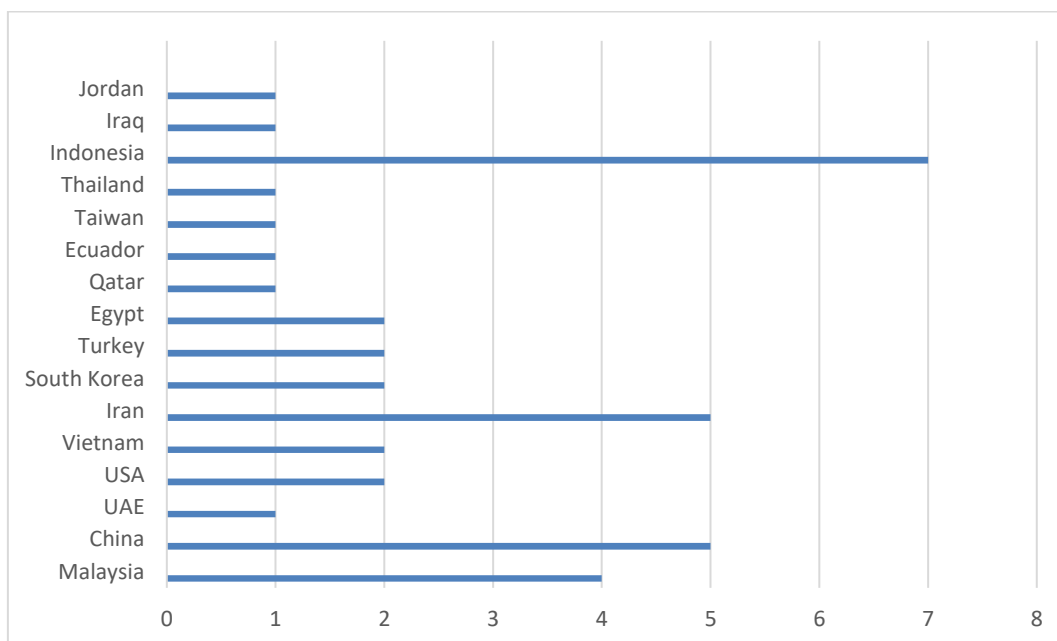


**Figure 3. Distribution of Reviewed Articles by Methodology**

In terms of data collection methods, out of the 21 articles employing quantitative methodologies, six collected data via survey questionnaires. The remaining 15 used a quasi-experimental design with pre-test and post-test experiments. For the articles utilizing qualitative methodologies, nine collected data through interviews, one used a closed-ended questionnaire, and the study by Avci and Adiguzel (2017) combined interviews with focus group discussions. Articles using mixed methodologies collected data through both surveys and interviews.

### 3.3 Authors' Countries of Affiliation

Regarding the authors' countries of affiliation, Indonesia has the highest number of affiliated institutions with seven institutions. This is followed by Iran and China, with five institutions each, and Malaysia, with four institutions. All other countries have either two or one institution affiliated with them, as shown in Figure 4. All authors, except for Bikowski and Vithanage (2016) and Jiang and Eslami (2022), are affiliated with countries where English is the first language. Additionally, the article by Jiang and Eslami (2022) is the only one with authors from two different countries, bringing the total number of authors to 38. The affiliation of authors by country is shown in Figure 4 below:



**Figure 4. Authors' countries of affiliation**

### 3.4 Domain of study of reviewed articles

This review also explores the educational levels at which the studies were conducted to understand how collaborative online learning in EFL is implemented across different educational settings. The analysis reveals that higher education institutions dominate, accounting for 62% of the reviewed articles, as shown in Table 3. Research in high schools and language schools combined makes up 16% (6 articles) of the total. The remaining 22% (8 articles) did not specify an educational setting. Notably, no research was conducted among preschool or elementary students, likely owing to the challenges these younger students would face using an online setting.

**Table 3. Domain of Study of Reviewed Articles**

Educational settings	Number of articles (%)
Higher education institutions	62%
High school	8%
Language school	8%
Not specified	22%

### 3.5 Language skills and language components

The analysis focused on the most studied language skills and components in the reviewed articles. The results revealed that writing skills, whether related to writing performance or writing efficacy, were the most frequently researched language skills. Specifically, 74% (20 articles) of the reviewed articles examined writing skills, followed by speaking skills at 19% (5 articles), and reading skills at 7% (2 articles). Out of the 27 articles that investigated a specific language skill, the majority concentrated on writing. Other articles either focused on various language components or did not specify a particular skill or component. Among language components, vocabulary was the most widely researched, with five

articles dedicated to it, while pronunciation was the subject of just one article. The detailed results of this analysis are presented in Table 4.

**Table 4. Language Skills and Language Components Researched by Reviewed Articles**

Language skills	Number of articles	Language components	Number of articles
Writing skills	20	Vocabulary	6
Reading skills	2	Pronunciation	1
Speaking skills	5		
Not specified	6		

It is important to note that some articles examined both language skills and language components, while others focused on multiple language skills. This is why the total number of articles exceeds the number of those reviewed.

### **3.6 How collaborative online settings impact the language proficiency of EFL learners**

#### *Interactive learning*

The interactive nature of collaborative online learning was the most frequently cited factor influencing the language proficiency of EFL learners among the reviewed articles. This interaction could occur between teachers and learners or among the learners themselves. In their study, Shahidan et al. (2022) found that learners were motivated to use Google Docs by two different kinds of interactions: peer and lecturer contact. The results show that using Google Docs to collaborate on writing with classmates has benefits that can be compared to working alone on writing assignments. When using Google Docs to interact with their peers, learners feel more self-assured and driven. In contrast to typical face-to-face classes, Rahimzadeh and Gilakjani (2022) claim that the experimental group's participants who used collaborative online learning in their study were greatly influenced by the freedom to learn and the contact between teachers and students. The environments encouraged students to actively engage and answer questions, which increased their self-assurance and made them feel proud of their accomplishments.

The teachers' ability to answer questions from the children was another indication of this development. This is further supported by a study by Rasak et al. (2013), the results of which showed how interactive this collaborative online learning was and how it helped EFL students actively participate in worthwhile writing activities through cooperation, interaction, and support on both the learner-teacher and learner-learner levels. Additionally, Fischer and Yang (2022) asserted that in the context of teaching EFL, learners in flipped group classrooms with online instruction performed better than traditional flipped classrooms. Their findings highlight the value of teamwork in online instruction for improving students' oral English proficiency.

Collaborative online learning enables interaction between native and non-native English speakers. According to Zhou (2023), e-tandem classes positively

influenced students' speaking abilities and their willingness to communicate. This effect may be attributed to the students' interactions with online foreign English speakers, which they perceived as more enthusiastic compared to in-person interactions with fellow learners.

The interactive nature of collaborative online settings in EFL instruction enables students to engage in group work with their peers. As noted by Avci and Adiguzel (2017), this environment provides students with opportunities to use the target language in authentic group projects, in particular, allowing them to practise vocabulary. Through the experience of texting in English during discussions and conversations, students typically focus on writing their sentences accurately and selecting appropriate words according to standard writing conventions.

Online collaborative learning offers a method of working with students that values and recognizes the skills and contributions of collaborative group members, which in turn encourages greater participation in the learning process. Additionally, by allowing students to communicate verbally and obtain feedback from classmates and the researcher, Zoom facilitates the development of students' EFL speaking abilities (Badr, 2020; Ashraf & Salami, 2014). Jeong (2019) asserts that social networking platforms have a significant impact on students' comprehension of the integration of online group collaboration as a beneficial and successful language learning technique. According to the study, students found collaborative online English learning activities to be a stimulating and encouraging learning environment.

### ***Feedback***

Feedback was the second most frequently mentioned attribute of collaborative online settings in EFL teaching among the reviewed articles. Shahidan et al. (2022) highlighted that using digital online platforms allows students to enhance their writing skills. Specifically, feedback and comments from peers helped students improve their writing. Additionally, students actively participated in discussions and were open to their peers correcting their mistakes. Khalifa's (2022) study found statistically significant differences in the mean scores of learners using collaborative online learning versus traditional classroom learning in EFL writing skills. The results indicated that the collaborative online group performed better, attributing this to the corrective feedback inherent in the online setting.

Fitria et al. (2023) found that peer and teacher feedback greatly benefited learners' writing development during online collaborative writing. Wu et al. (2022) found that an online, teacher-guided out-of-class learning approach in EFL teaching was more effective than traditional classroom learning, largely owing to the strong feedback mechanisms in online collaborative settings. These mechanisms, including both teacher and peer feedback, along with increased engagement and satisfaction, significantly enhance EFL learners' language proficiency. Additionally, Bailey and Judd (2018) demonstrated that students in the online collaborative writing group showed a marked improvement in L2 writing accuracy, highlighting the positive impact of online collaborative environments

on EFL learners' language skills. Feedback is crucial in this process, providing the guidance, reinforcement, and motivation necessary for learners to achieve higher levels of writing accuracy and competence.

### *Individualized learning*

One such feature of collaborative online teaching that was found in the examined publications is individualized learning. Wu et al. (2022) claim that the usage of WhatsApp as a platform for collaborative academic writing outside of the classroom to create an online learning community promoted a collaborative learning environment. Additionally, encouraging students to do the optional learning assignments in their own time and to seek teacher guidance when needed promoted better time management and an increased desire for learning. According to Al Ghazali (2020), social networking sites (SNSs) are used in online collaborative EFL contexts that support learners' autonomy and independence. They are not bound to the limited information that they learn in class. Instead, they can choose from a limitless array of online resources to bolster each language competency. Azodi et al. (2020) further asserted that the Telegram program can alter learners' attitudes about English writing. The students' desire to write beyond the classroom at home suggests this as they stated that writing in class is stressful owing to a variety of factors, including noise, time constraints, and lack of focus. According to Edwards et al. (2019), because online platforms allow for student autonomy in their learning, they have a substantial effect on students' motivation and participation in collaborative learning.

According to Abdullah et al. (2022), students found it easy to communicate with their teachers using Google Docs because they could receive immediate feedback from them. The learners were also motivated to enhance their writing abilities by the remarks and feedback. Additionally, they preferred turning in their work using Google Docs over the conventional method.

### **3.7 Learning outcomes positively affected by collaborative online EFL teaching**

The findings of this review indicate that writing skills were the most positively impacted learning outcomes across the majority of the reviewed articles. This can be attributed to the fact that approximately 74% of the reviewed articles focused on this specific language skill within EFL teaching. Challob et al. (2016) found that students had positive perceptions of the collaborative blended learning writing environment they experienced in their study. Their research showed that online collaborative learning helped reduce students' writing apprehension and enhanced students' writing performance by deepening their understanding of both micro and macro aspects of writing. Additionally, Dai et al. (2023) demonstrated that Wiki-based writing instruction through online collaborative learning significantly improved the writing skills and self-efficacy of Chinese EFL learners in the experimental group compared to those in traditional classroom settings.

Hosseinpour et al. (2019) claim that the incorporation of the Edmodo mobile application into essay writing classes effectively enhanced the students' writing abilities because the experimental group, which used the Edmodo application to practise collaborative essay writing, performed better than the control group. The



latter was in traditional classroom settings in terms of writing proficiency overall as well as writing mechanics, organization, and vocabulary. Furthermore, the results of Rahimi and Fathi's (2022) study showed that EFL students in Wiki-mediated collaborative writing groups performed better in terms of writing performances than those in non-Wiki collaborative writing groups. Numerous peer writing mediations were found to contribute to the EFL students' writing content (i.e., the clarity of the produced message), writing organization (i.e., the sequencing of information), and language use (i.e., grammar, lexicon, and writing mechanics) in the Wiki space. These findings were made possible by the qualitative data analyses.

When compared to their pre-test writing, Kitjaroonchai and Suppasetserree (2022) also found that students' writing performance improved after participating in two lengthy collaborative writing assignments. The increase in mean scores for each language domain content, structure, vocabulary, language use, and mechanics described in the scoring rubric indicated that learners' writing skill had improved. Li (2023) asserted, however, that the experimental group which utilized Tencent Docs showed noticeably higher gains in motivation, self-efficacy, and writing performance as compared to the control group, which received instruction in conventional classroom settings.

However, the findings of Kılınc and Yüksel (2024) demonstrated that while online collaborative writing in an EFL writing course increased students' compositions' lexical complexity and fluency, it had no influence on their syntactic complexity. The students had an A2 level of English competence. Furthermore, Jiang and Eslami's (2022) research shows that when using online collaborative learning in EFL teaching, intermediate learners gained more than advanced learners did. Additionally, task type, dyadic type, and language proficiency significantly support improvements in overall writing performance and fluency but not in accuracy or complexity.

It has also been demonstrated that learners utilizing online collaborative learning benefit from having strong oral and communication skills. Al Ghazali (2020) claims that social networking sites helped students' oral and written communication skills during their studies; however, they were less helpful for developing their grammar and writing skills. Zhou (2023) looked examined how two sets of students' reading capabilities were affected by e-tandem collaborative learning. The groups' speaking abilities and communication willingness improved, according to the results. The e-tandem group did better than the traditional group, nevertheless. The results show that EFL learners' speaking abilities and communication willingness are enhanced by online language exchanges.

This review also demonstrated the beneficial effects of collaborative online learning on students' language and reading comprehension. According to Abdullah et al. (2022), Facebook, Twitter, and YouTube helped EFL learners improve their vocabulary, reading comprehension, and pronunciation, respectively. According to Avci and Adiguzel's (2017) findings, learning English

in an online environment where students utilized the language for authentic purposes aided in their language acquisition, enhanced their vocabulary and communication abilities, and helped them identify colloquial English.

### 3.8 Digital platforms and digital tools used

Table 5 presents an overview of the digital tools and platforms most frequently used in the reviewed articles. According to Table 2 (data extraction table), Facebook and Zoom are the most commonly used digital platforms. They are followed by YouTube, WhatsApp, Moodle, Wiki, and Edmodo. Other platforms were each used in at least one article each.

Regarding digital tools, blogs were the most frequently used, appearing in four of the reviewed articles. Google Docs was used in three articles, and email was used in two. Other tools were mentioned in only one article each.

**Table 5. Digital Platforms and Digital Tools used in the Reviewed Articles**

Digital tools	Digital platform
Google Docs	Facebook
Email	Twitter
Chat	YouTube
Weblog	WhatsApp
Tencent Docs	Moodle
Video conferencing	Microsoft teams
	Livemocha
	italki
	Lang
	Hello-ho
	Duolingo
	Palaba
	Viber
	Wiki
	Zoom
	Telegram
	Edmodo

### 3.9 Common challenges faced by students and teachers in collaborative online EFL classrooms

#### *Lack of concentration by learners*

Bui et al. (2021) and Fitria et al. (2023) identified learners' lack of concentration as a significant challenge in online digital classrooms. Bui et al. (2021) found that distractions such as social media, noisy environments, and talkative group members negatively affected learning progress. Fitria et al. (2023) observed that a lack of participation among learners was a notable drawback. Additionally, Utami et al. (2023) highlighted several factors contributing to learners' lack of concentration, including difficulties teachers face in monitoring students, lack of student motivation, network instability, and low participation levels. These factors collectively hinder effective participation in online collaborative learning.

### *Lack of technical ability*

The inability to use Realia was one of the biggest obstacles that teachers had when teaching English vocabulary online, according to a study by Altakhaineh et al. (2023). However, the report also drew attention to a few other issues, such as inadequate Internet access, mismanaged classrooms, and huge class numbers. According to Bui et al. (2021), insufficient computer skills continue to be a major barrier to the use of digital online collaboration in EFL teaching and learning, which can result in contentious situations amongst colleagues. However, Al Ghazali (2020) also supports the idea that the adoption of collaborative online learning environments in EFL instruction may be hampered by a lack of technical proficiency with digital tools and platforms.

Ermawati et al. (2021) also found that teaching English skills online presented a great many challenges for EFL teachers. Instructors find it difficult to identify students' comprehension and to locate sufficient listening resources, to rely solely on YouTube, and do not think that students from the previous year are relevant. Video conferencing is generally not accepted on the internal network, response is often lacking, and the process takes a long time. Instructors find it challenging to keep an eye on their students' reading activities as well as a loss of reading proficiency, increasingly student-centred behaviour, and low reading attendance. Finally, teachers fail to assign any critical thinking exercises, and students struggle to create complete sentences.

### *Lack of Internet connection*

According to research by Lodo and Ajito (2022), Dewi et al. (2023), Nguyen Tat and Nguyen (2023), Syarifudin (2023), Zangana and Nesrallah (2023), and A'isy et al. (2024), the most frequent issue that teachers and students encounter in online collaborative settings for EFL instruction is the lack of an Internet connection. Dewi et al. (2023) listed the academic integrity of students, teacher time allocation, punctuality, and supervision and feedback as issues experienced by teachers in collaborative online learning, in addition to a lack of Internet connectivity.

### **3.10 Mitigating the challenges to improve the effectiveness of EFL teaching in digital collaborative environments**

Syarifudin (2023) proposed several mitigation strategies to enhance the effectiveness of online collaborative environments in EFL teaching. To address students' lack of concentration, the study recommended that writing instructors actively monitor the collaborative writing process to ensure that each student contributes to the joint authorship of texts. Additionally, lecturers can use self-created video materials to prevent misunderstandings and promote cohesive learning in both synchronous and asynchronous settings.

Zangana and Nesrallah (2023) claimed that collaborative online EFL teaching can be advantageous by saving time and effort, provided that both teachers and students undergo intensive training and have access to a reliable Internet service. Altakhaineh et al. (2023) proposed several solutions to address the challenges faced in collaborative online EFL environments, including the use of advanced online platforms such as Google Meet, World Word, and Microsoft Teams,

creating small online breakout rooms for students, and incorporating games and plays.

Utami et al. (2023) identified several effective strategies for incorporating online digital platforms in EFL teaching. The predominant approach used by teachers in their study involved a combination of video conferencing (synchronous) and online chat (asynchronous). According to interviews and documentary videos, teachers used Zoom for face-to-face communication and platforms such as WhatsApp groups and Google Classroom for sharing materials and assigning tasks. These dual online learning methods were employed to achieve educational goals. Additionally, to address students' network instability, teachers utilized other learning applications that consume less Internet data, such as Google Classroom.

#### **4. Limitations of the review**

The use of small sample sizes in most research, which restricts the findings' capacity to be generalized, is one of the review's major limitations. Furthermore, the diversity of learners, particularly with regard to social settings, educational systems, and cultural backgrounds, was generally ignored in the examined studies. Owing to this omission, the results are not as applicable in other circumstances and do not take into consideration the key variations that may have an impact on learning outcomes. Another drawback is that the majority of research was restricted to higher education establishments, which makes it more difficult to apply the findings in other contexts such as elementary and secondary schools. Furthermore, the bulk of the studies ignored other important language components such as vocabulary, grammar, and affective aspects such as motivation and anxiety in favour of focusing on language abilities such as speaking and listening. Finally, there was not sufficient consideration of how cultural variations could affect the effectiveness of online language interactions, which is a crucial factor in comprehending the whole dynamics of EFL learning in cooperative online environments.

#### **5. Recommendations for future research**

To increase the generalizability of the results, larger and more varied sample sizes should be the goal of future study. Investigating how different social contexts, educational institutions, and cultural backgrounds affect online EFL learning is equally crucial. This would guarantee that the findings are applicable to a wider range of situations and offer more thorough insights. To make the research more applicable to various EFL student types, it should also be expanded beyond higher education and cover settings in primary, secondary, and adult education. In order to provide a comprehensive knowledge of language learning, future research should look into not only language abilities but also other crucial language elements including vocabulary, grammar, and affective variables such as motivation and anxiety. Finally, researchers should take cultural variations into account when studying the effects of language learning and exchanges online, specifically looking at how these differences affect interaction dynamics and learning results.

## 6. Conclusion

This systematic review highlights the significant potential of collaborative online settings in enhancing EFL teaching and learning. The review synthesizes findings from various studies, demonstrating that the interactive nature of online collaborative settings fosters student engagement and motivation, providing a platform for meaningful interactions between peers and instructors. The findings reveal that collaborative online environments can impact EFL learners' language proficiency through interactive learning, feedback techniques and personalised learning. Furthermore, findings from the review showed that collaborative online learning mostly improves the writing skills of learners while oral and speaking skills of participants in the reviewed study were also improved. Challenges such as lack of concentration by learners, poor Internet connectivity, lack of resources and lack of technical ability were also highlighted as barriers facing learners and teachers in adopting collaborative online setting in EFL teaching. Strategies in mitigating these challenges were identified and discussed.

The findings of this study have several important implications for educators, policymakers, and researchers in the field of EFL teaching. For educators, the review underscores the effectiveness of collaborative online settings in enhancing student engagement and language proficiency. This suggests that incorporating digital collaborative tools into EFL curricula can lead to improved learning outcomes. Policymakers can draw on these insights to support the integration of technology in language education, ensuring that teachers have the resources and training needed to utilize these tools effectively. For researchers, the study highlights critical gaps in the literature, such as the need for larger and more diverse sample sizes, the exploration of various educational settings beyond higher education, and a focus on neglected language components and affective factors. Addressing these gaps can lead to a more nuanced understanding of how different elements influence EFL learning in online environments, ultimately contributing to the development of more effective teaching strategies and educational policies.

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