Using WhatsApp to Support English Language Learning: A Systematic Review

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Abstract

This study examines the use of WhatsApp as a learning platform for English language teaching and learning regarding the trends, ways, and main findings. Adopting the systematic review methodology, eighty-one empirical studies published between 2013 and 2022 were shortlisted, of which 39 were selected and analyzed utilizing a content analysis method. The findings revealed that the use of WhatsApp gained popularity in 2016 and sharply increased in 2021. Additionally, mixed methods became the most frequently used research method, while vocabulary was the most investigated language skill. Moreover, the ways WhatsApp was employed showed similar instructional activities with some variation among all studies. Further analysis revealed the advantages and challenges of employing WhatsApp for educational purposes such as supporting listening and reading comprehension, increasing students' motivation and participation, and technical issues. In addition, many studies measured the effectiveness of using WhatsApp, which reported positive results. Finally, synthesizing the selected studies resulted in recommendations for language teachers and further research agenda.

Keywords: WhatsApp, Mobile-Assisted Language Learning (MALL), systematic review, content analysis, English language education

Introduction

The advances in technology have led to changes in language learning practices. The application of Mobile-Assisted Language Learning (MALL) is one proof of this change. Over the last two decades, research on the use of MALL has continued to increase (e.g., Liu & Chen, 2015; Shadiev et al., 2022), including a series of reviews (e.g., Gutiérrez-Colón et al., 2020; Wang et al., 2017; Yang, 2013). These existing review studies on MALL indicate that MALL has become an integral part of language learning. It is also reported that MALL is one of the efficient tools for language learning purposes (Yu et al., 2022).

As one of the technological advancements in mobile communication, WhatsApp (hereafter, WA) is often employed as a learning tool in various fields of study. WA was first launched in 2009 as an instant messaging and gained around two billion monthly active users (Statista, 2022). In recent years, a growing body of literature has investigated the use of WA in large fields of education, including (to mention a few) computer (Güler, 2016), language learning (Farahian & Parhamnia, 2022; García-Gómez, 2022), midwifery (Gonenc et al., 2021), and psychology (Alshaibani & Qusti, 2021). In a recent study, Manca (2020) reviewed studies on social media platforms (i.e., Instagram, Pinterest, Snapchat, and WhatsApp) as language learning tools. It was reported that WA was the most explored of the four platforms for language learning.

In the context of English as a foreign and second language setting, studies have shown that using WA contributes to students' autonomous motivation (Alamer & Al Khateeb, 2021), students' engagement (Saritepeci et al., 2019), and students' vocabulary learning and retention (Ankeny, 2019; Balci & Kartal, 2021; Çetinkaya & Sütçü, 2018). Employing WA is also considered beneficial in language teachers' professional development. It functions as a platform to share and discuss particular issues, enables teachers to develop teaching materials, and contributes to teachers' English language knowledge (Motteram et al., 2020). Besides, Tragant et al. (2021) argued that integrating WA into language teaching has led learners to practice their language beyond the classroom. Andujar (2016) studied the benefits of WA in second-language learners' writing and concluded that WA could function as a powerful tool for educational purposes that support second-language interaction and encourage students' engagement. The participants of the study seem to have positive attitudes about the implementation of this

application. Similarly, Saritepeci et al. (2019) investigated learners' perceptions of using WA in language learning, especially in preparation for the national academic exam in Turkey. WA-supported foreign language activities facilitate active learning, learner-instructor interaction, learner satisfaction and motivation to learn languages and autonomous learning.

From a different methodological point of view, other studies reported inconclusive results. In the mixed-methods study by Akyildiz and Çelik (2021), conducted with the participation of 54 secondary students, the conclusions suggested incorporating WA as a complementary device for reading tasks can be considered an effective way to enhance students' reading comprehension skills, and it was perceived positively by students. In addition, in another study by Farahian and Parhamnia (2022), the impact of utilizing WA as the platform for knowledge sharing for teachers has led to reflective practice, contributing to their professional development. Unlike the other studies mentioned above, however, García-Gómez (2022) reported that the employment of WA did not provide a natural context for non-native English learners during their interaction with native English speakers. The findings also showed negative opinions about using WA because of the lack of pragmatic competence.

Despite the growing interest in integrating WA in language teaching and learning, there is still a lack of comprehensive research on the effectiveness of such action in foreign language education. In addition, of the many studies into WA employment in language learning, few studies addressed the challenges and advantages of utilizing WA in foreign language classrooms (e.g., Bouhnik & Deshen, 2014). Interestingly, although there are several review studies about the use of mobile phones, particularly the employment of WA in educational practices, few studies focus on the use of WA as a learning tool in English language teaching (Elaish et al., 2019; Kacetl & Klímová, 2019; Klímová, 2018). To fill this void, the present study aims to systematically review studies incorporating WA as a learning platform in ELT. The study sought to answer the following research questions:

(1) What are the trends in using WA in ELT research?
(2) In what ways is the WA employed in ELT research?
(3) What were the main findings from the available literature on WA?

The present study is important in the field because the findings of this systematic review can pave the way for future studies and provide insights for researchers and teachers, such as addressing gaps found in the literature on WA and informing teachers' instructional design when using WA as the language-learning tool.

Method

This present study used a systematic review method which is a systematic study guided by research questions to determine which literature is being investigated. The systematic review aims to compile evidence of numerous research findings on particular developing events to "information and possible courses of action for teachers and policymakers" (Macaro, 2020, p. 231). Compared to traditional reviews, this method also aims to limit error potentials such as bias and less systematic ways of reviewing processes. In traditional reviews, as Macaro (2020) observes, bias can be "in terms of how many and which previously published studies are selected for inclusion", while less systematic ways in terms of "whether these studies are read in any kind of depth, the extent to which they are then described in the review, how they are juxtaposed against other studies, and whether and how they are critiqued" (p. 230). To address these issues, a research team should be available in a systematic review project (Macaro, 2020). Therefore, we worked as a team involving three researchers in this study to minimize biases and applied systematic frameworks, as discussed below, when reviewing the selected studies.

Data collection

Our target studies included all potential studies incorporating WA as the tool for teaching and learning English as a foreign language. The systematic search was conducted and focused on the SCOPUS database. This database was selected due to its popularity as one of the world-leading databases for research publication. It is a reliable bibliographic data source (e.g., Pranckute, 2021; Zhu & Liu, 2020). In 2018, it was reported that SCOPUS received the highest average citations for journal articles, and many documents found in other databases were also indexed in SCOPUS (Bar-Ilan, 2018). Likewise, Zhu and Liu (2020) reported that SCOPUS had challenged the domination role

of the first most popular database (i.e., Web of Science). Following Pranckute's argument (2021), SCOPUS covers wider and more inclusive content coverage.

In this database, we conducted the following search: "WhatsApp", "WhatsApp in language learning", "WhatsApp in ELT", "WhatsApp in English teaching and learning", and "WhatsApp in EFL learning". For the purpose of advanced search, we also adopted a technique called Boolean Searching (University of London, n.d.). Thus, we combined our keywords as "WhatsApp" OR "WA" AND "teaching" OR "pedagogy" AND "learning" AND "English Language Teaching" OR "ELT". Additionally, our inclusion criteria for the studies were:

(1) Indexed in SCOPUS
(2) Published between 2013 and 2022
(3) Contained empirical research
(4) Conducted in ELT context
(5) Incorporated WA as the (additional) tool for English language teaching and learning
(6) Written in English

As we required studies that contained empirical research, it should be pointed out that we excluded theoretical articles and included practices without research methodology. Also, we excluded articles published in inactive (i.e., discontinued) and non-English journals. Additionally, we decided 2013 as the cut-off date for the inclusion; our initial search of papers showed this to be an obvious year when the available related research began to appear. Besides, our initial search was inspired by the result of Barrot's (2022) study, reviewing studies on social media as a language learning environment. These inclusion and exclusion criteria were applied as our focus in the review is to understand better what research was conducted to date with a view of pedagogical approaches and methods.

Figure 1

Data search and retrieval framework
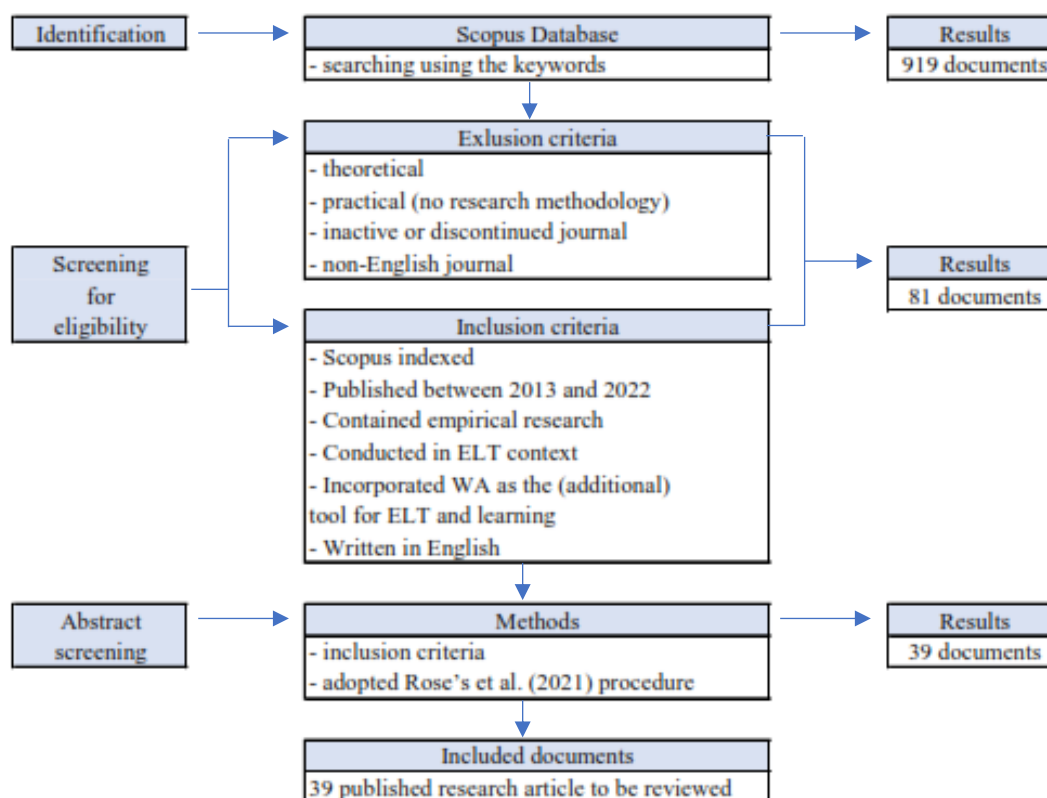
The search was conducted on 1–2 April 2022, and we searched again on 2 June 2022 (Figure 1), anticipating that we missed some (recent) articles. We found over 900 potential articles from the database in the initial search. Then, we compiled the data in a Microsoft Excel-based data processing and manually read the articles' titles and author(s). During this phase, we collected 81 articles to be shortlisted for abstract screening. Furthermore, we worked together to read the abstract guided by the selected criteria and checked the articles as "include", "exclude", or "maybe". Following Rose's et al. (2021) procedure for abstract screening, we reviewed those checked as "maybe" together to decide whether to be included for a full-text review. After the above-mentioned procedure, 39 papers were finally reviewed.

Data analysis

Guided by the research questions, the papers were analyzed to examine their trends, how the tool is employed, and their main findings. Responses to these questions

would provide insights for researchers and teachers to develop ideas regarding the practice of using WA as a language education learning tool. To this end, two researchers coded and analyzed the data using the content analysis method. This method enables the researchers to categorize, compare, and contrast the data (Fraenkel & Wallen, 2000). Firstly, subcategories were made to answer each research question. As seen in Table 1, the data were coded based on these subcategories for further analysis. To answer the first research question, the analysis focused on the years and countries of the studies undertaken, the participants' education level, and the research methods used. For the second research question, the analysis focused on how WA was employed in ELT within the studies. While to answer the last research question, the analysis was concerned with the main findings of the studies, such as language skills being investigated, advantages and challenges of incorporating WA, and how effective such support is for ELT.

Table 1

Research questions' subcategories

| Research questions	Subcategories
RQ 1. What are the trends in using WA in ELT research?	- Studies by years - Studies by countries - Participants' education level - Research methods used
RQ 2. In what ways are the WA employed in ELT research?	Make use of WA: the data were coded and analyzed to document how WA was employed during the teaching-learning process.
RQ 3. What were the main findings from the available literature?	- Language skills - Advantages and challenges of WA use - Effectiveness of WA use

Secondly, single-spreadsheet data extraction was prepared to evaluate the studies' relevance to this review by scoring them as high, medium, and low for their methodological appropriateness and trustworthiness of the analysis. Then, the full papers were divided into the first and second authors for coding and analysis following each subcategory. In addition, a discussion space was then opened to compare the researcher's individual reviews to reach a consensus (i.e., resolving any disagreement). Upon this agreement, the researchers collected the findings based on the research questions. The researchers also sought to relate how recommendations can be drawn from these findings for further research agenda. Cohen's Kappa coefficient value was also sought to ensure inter-coder reliability. 19 studies were chosen randomly and coded by two researchers. Two sets of codes were then analyzed using SPSS, which resulted in 0.61. Following Viera and Garret (2005), this value indicated substantial agreement among coders.

Findings

This systematic review examined 39 research articles (See Appendix) retrieved from the SCOPUS database. The findings are presented based on the research questions along with each subcategory.

Trends in the use of WA in ELT research

In this section, the findings in response to RQ1 included the distribution of the years and countries of the studies undertaken, the participants' education level, and the research methods used. The descriptions of each category are presented as follows.

Figure 2

The number of articles by years
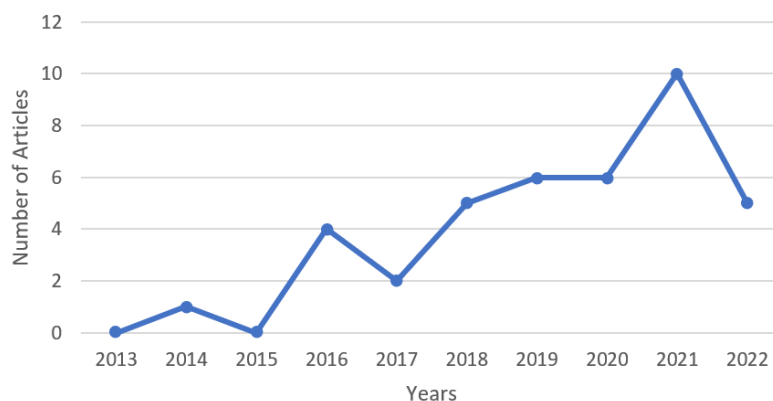
Figure 3

The number of articles by countries
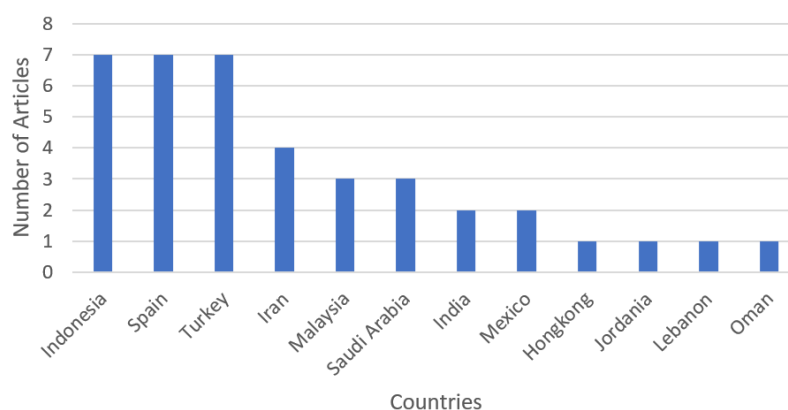
As shown in Figures 2 and 3, the highest number of studies was published in 2021 (n = 10), while most were conducted in Indonesia, Spain, and Turkey, which had an equal number of studies. Based on the data, the employment of WA as a language learning tool is more commonly seen in Asia. The first study into the area was published in 2014 (n = 1) and was undertaken in Oman, while the latest studies (per 2 June 2022) were conducted in India (n = 1), Indonesia (n = 2), Iran (n = 1), and Mexico (n = 1). The number of studies published in 2021 was the highest among the trends. This may be due to the COVID-19 pandemic, which has made educational practices delivered asynchronously or virtually.

In terms of the level of participants' education (Figure 4), most studies were undertaken in higher education, which comprised 25 studies, eight studies in secondary

education, one study in primary education, and five studies in other categories (e.g., adults' learners, pre-intermediate learners, EFL teachers). This indicated that most studies focused much on higher education levels, while little attention has been paid to primary and secondary education.

Figure 4

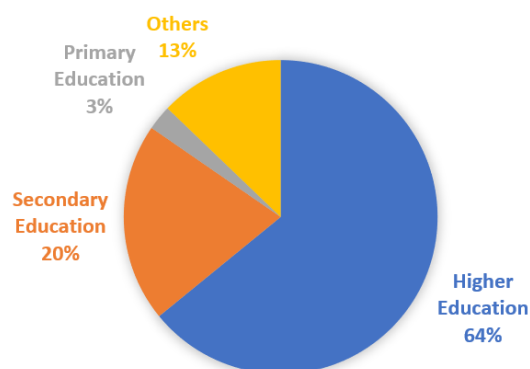*The number of articles by education levels*

Figure 5

Research methods used in the reviewed articles
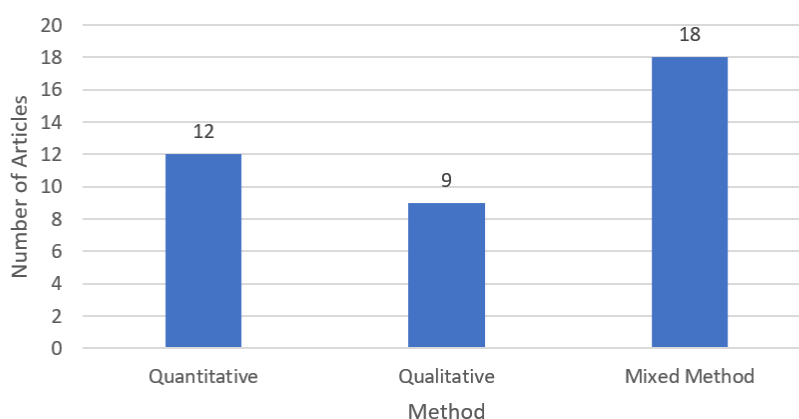
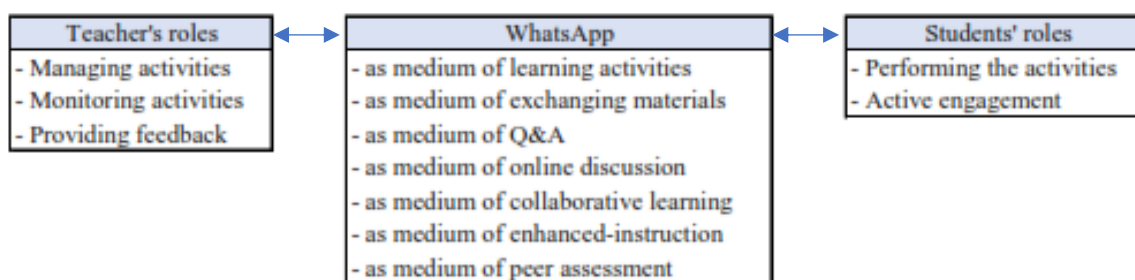As shown in Figure 5, the mixed method was the most commonly used research method in the studies, while the quantitative method was in second place and closely followed by the qualitative method. This finding implied that since the commencement of the present study, few WA studies in the realm of ELT had been found that adopted the literature review method.

Ways the WA employed in ELT research

In most studies, the use of WA in language teaching and the learning process has something in common in each study. It was used to share materials for further discussion or examination/posting tasks, question and answer, and deliver the teacher's feedback (Figure 6).

Figure 6

Teacher's and students' roles in employing WA

Teacher's roles	WhatsApp	Students' roles
- Managing activities	- as medium of learning activities	- Performing the activities
- Monitoring activities	- as medium of exchanging materials	- Active engagement
- Providing feedback	- as medium of Q&A	
	- as medium of online discussion	
	- as medium of collaborative learning	
	- as medium of enhanced-instruction	
	- as medium of peer assessment	

For instance, Alamer and Al Khateeb (2021) employed WA to "share knowledge, extend learning time and encourage mutual collaboration with the students and instructors" (p. 11). For 5 weeks, students were required to respond to 10 tasks (two tasks each week to be completed before the next meeting) submitted via the students' WA group. The teacher's role was to monitor and encourage student-student interaction and peer feedback. At the same time, students did the listening and reading tasks per week and provided brief information about the two tasks at the end of every week. In addition, WA was used outside the classroom as a learning platform for exchanging material, sharing messages via screenshots or forwarding media, and promoting student-student and teacher-student informal interaction. Meanwhile, WA was used in the class as a tool to build confidence and support face-to-face teaching.

In another study, Akyildiz and Çelik (2021) used WA to support EFL reading comprehension skills for 6 weeks. While most studies use WA groups, this study did not create a WA group for some reason. Instead, the material was delivered directly to the WA of each student. Two reading texts and several questions related to the texts were sent every week on a different day. The reading text was based on the material taught in class. Songs and lyrics were also given as a reading activity variation to provide a fun learning situation and, at the same time, maintain student motivation. In addition, the teacher also provided additional questions through voice recording and the answer keys.

Thus, the student's role was to read the texts, answer the questions, write their answers on a paper sheet, and then send it through the teacher's WA. While the teacher's role was to ensure that the implementation of learning was fun, student motivation was maintained, and answer keys were provided.

Likewise, in Çetinkaya's (2020) study, WA was used to investigate students' experience during an extracurricular writing class. The 21 WA writing prompts were sent twice a week to students individually for four months. In addition, each student was required to comment on the question prompt and interact with the teacher as an extended communication with additional questions posed by the teacher. The teacher stressed to students to focus on the message they want to convey and not to worry about the possibility of making errors. The teacher did not provide corrections for any mistakes, but when corrective feedback was needed, the teacher rephrased the student's sentences into the correct form. Thus, the teacher's role was to maintain the flow of conversation with additional questions and to provide feedback when required, while the students were required to respond to the prompt given and to focus on their message rather than on form.

The main findings from the available literature

In response to RQ3, we examined language skills, the advantages and challenges of incorporating WA, and how effective such support is for ELT. These topics are described in detail in the following section.

As shown in Figure 7, 28 of the 39 articles explicitly mentioned what language skills were investigated, while the rest were for other purposes. Vocabulary was the most investigated language skill with nine articles, followed by Writing (n = 8), Speaking (n = 4), Listening (n = 1), Reading (n = 1), Collocation (n = 1), and a combination of language skills such as Listening and Pronunciation (n = 1), Reading and Writing (n = 1), Vocabulary and Speaking (n = 1), and Vocabulary, Listening, and Speaking (n = 1). In contrast, other articles adopted WA to support the teaching and learning process (n = 11), such as teacher-student or student-student communication, assessment, learning motivation, and learning engagement.

Figure 7

The number of articles by language skills
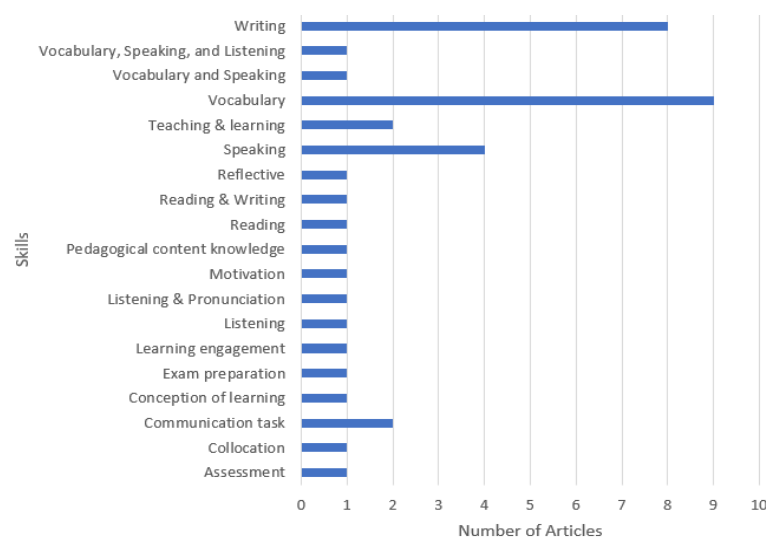
Some advantages were identified and grouped into themes. Table 2 shows the identified themes regarding the benefits of using WA to support language teaching and learning processes. The most advantages commonly reported were facilitating the teaching and learning process (n = 17), enhancing motivation and reducing anxiety (n = 11), engaging students in the learning process (n = 7), and providing a chance to go beyond the target content and exploring more language-related materials (n = 2). In addition, other advantages were found as a platform for student-teacher negotiation, collaborative learning, promoting confident learning, reflective practices, and a more flexible, dynamic, and interactive learning environment.

Table 2

Advantages of employing WA presented in themes

Themes	*f*	Articles
Learning facilitation	17	Akyildiz and Çelik (2021), Akyildiz and Çelik (2021), Allagui (2014), Andujar (2016), Andujar (2017, 2020), Ankeny (2019), Annamalai

		(2018, 2019), Arifani and Jumadi (2021), Bataineh, et al. (2018), Budianto and Arifani (2021), Çetinkaya (2020), Çetinkaya and Sütçü (2019), Dehghan et al. (2017), Haron et al. (2021), Tahounehchi (2021), Yavuz (2016)
Motivational increase	11	Alamer and Al Khateeb (2021), Allagui (2014), Arifani (2019), Arifani and Jumadi (2021), Awada and Wang (2016), Balcı and Kartal (2021), Bensalem (2018), Ratminingsih (2022), Setyowati (2019), Soria et al. (2020)
Learning engagement	7	Arifani (2019), Haron et al. (2021), Imamyartha (2022), Jeyasivanesan and Selvam (2022), Khan et al. (2021), Soria et al. (2020), Tragant et al. (2021), Imamyartha et al. (2022)
Learning beyond the classroom and the content materials	2	Alamer and Al Khateeb (2021), Sandoval-Cruz et al. (2022)
Learning negotiation	1	Sandoval-Cruz et al. (2022)
Collaborative learning	1	Jeyasivanesan and Selvam (2022)
Learning confidently	1	Khan et al. (2021)
Reflective practice	1	Farahian and Parhamnia (2022)

Others	4	Arifani et al. (2020), Lai (2016), Saritepeci et al. (2019), Sherine et al. (2020)

Table 3

The effectiveness of employing WA reported in the literature

Findings	*f*	Articles
Employing WA is more effective	13	Akyildiz and Çelik (2021), Alamer and Al Khateeb (2021), Andújar-Vaca and Cruz-Martínez (2017), Arifani and Jumadi (2021), Awada and Wang (2016), Balci and Kartal (2021), Bensalem (2018), Çetinkaya and Sütçü (2018), Çetinkaya and Sütçü (2019), Farahian and Parhamnia (2022), Haron et al. (2021), Setyowati (2019), Tahounehchi (2021)
Employing WA makes no difference	3	Dehghan et al. (2017), Lai (2016), Yavuz (2016)
Employing WA makes no difference and/or is more effective	1	Andujar (2016)

As shown in Table 3, a total of 17 articles were found to measure the effectiveness of WA through experimental methods, pre-test and post-test, and group comparisons. Of the 17 articles, 13 reported that employing WA as a learning tool was effective. However, three studies reported that the use of WA was ineffective, as indicated by no significant difference in the treatment results. In contrast, one study reported inconclusive results because the treatment of the investigated topics led to mixed results; the experimental group showed a significant result compared to the control group in one aspect and at the same time, showed an insignificant result in the other aspect.

Table 4

Challenges of employing WA as a learning tool

Challenges	*f*	Articles
Technical issues	16	Allagui (2014), Andujar (2016), Annamalai (2019), Bataineh, et al. (2018), Budianto and Arifani (2021), Çetinkaya (2018, 2019, 2020), García-Gómez (2022), Imamyartha (2022), Khan et al. (2021), Lai (2016), Saritepeci (2019), Setyowati (2019), Sherine et a. (2020), Tragant et al. (2021)
Participants' self-awareness	3	Çetinkaya (2020), Farahian and Parhamnia (2022), García-Gómez (2022)
Instructional design	2	Ankeny (2019), Çetinkaya (2020)
Assessment model	1	Budianto and Arifani (2021)

Although incorporating WA into language learning and teaching is reported to have many benefits and is effective, it does not mean there are no challenges in the implementation process. Table 4 shows some of the most mentioned challenges, such as technical issues (n = 16), participants' self-awareness (n = 3), instructional design (n = 2), and assessment model (n = 1). Technical issues with using WA include spending much time texting and sorting irrelevant/improper/unnecessary messages or comments. This leads to extensive work on the gadget. Other technical issues involve internet problems (e.g., Bataineh et al., 2018), participants' cheating, not being quick to respond, battery problems, being out of the discussion, and ineffective time management, such as

inconvenient hours for texting. The use of WA may also lead to misuse of the gadget for entertainment, such as chatting with other participants or friends rather than studying. From the teachers' perspective, the main challenge is controlling the quantity and quality of chats, inactive participants, participants' online behaviour, and excessive or inappropriate use of colloquial language and slang. It also noted that the technology's incorporation with the intended language learning goals should be designed properly to yield positive results. In addition, providing effective assessment models is also a challenge for teachers.

Discussion

This study analyzed the use of WA as a learning platform for English language teaching and learning. Thirty-nine articles retrieved from the Scopus database were examined regarding their trends, ways of employing WA, and main findings. The analysis showed that the use of WA had increased since 2018, and a significant increase was found in 2021. This increasing number may be due to the popular synchronous-asynchronous teaching-learning mode that occurred almost worldwide last year. Looking at the data in the recent year, this suggests that the use of WA in ELT will continue to experience popularity. However, based on the result of this review on the part of how WA is employed, teachers must inform their designs with available empirical evidence. This will open an opportunity to innovate the practices of ELT and learning when using WA as an additional tool.

Although the findings showed that Indonesia, Spain, and Turkey have the most studies that integrated WA as a teaching and learning tool in ELT, more research was conducted in Asian countries (i.e., Iran, Malaysia, Saudi Arabia, India, Hongkong, Jordan, Lebanon, Oman) than in European or other countries. This may be due to this review's limitations or not many teachers have reported their teaching practices when using WA. In terms of education level, many educators reported their studies in the context of higher education, while the percentage is found to be low at other levels of education. This indicates that few ELT teachers conduct or report their research on the such topic in the primary (e.g., Soria et al., 2020) and secondary level of education (e.g., Akyildiz & Çelik;

2021; Budianto & Arifani, 2021; Çetinkaya & Sütçü, 2019; Lai, 2016). Nevertheless, most of these studies' contributors are affiliated with higher education institutions.

In terms of research method, the most commonly used research method was found to be mixed methods. This indicates that there is a desire on the part of the researchers to generalize their findings and, at the same time, gain an in-depth investigation of their research participants. In other words, the studies were intended to investigate the impact of using WA in language learning, measure its effectiveness, and reveal phenomena that may arise for further investigation. However, of the 39 articles reviewed, only seven papers investigated the effectiveness of using WA for language educational purposes (i.e., Alamer & Al-Khateeb 2021; Arifani & Jumadi, 2021; Bensalem, 2018; Dehghan et al., 2017; Lai, 2016; Tahounehchi, 2021; Yavuz, 2016). Thus, there lies a paucity of research that looks into the effect of using WA as a language learning and teaching tool. A longitudinal research design (i.e., action research) is worth conducting to measure the ongoing WA interventions' effects in the classroom. This enables researchers to enact innovation cycles and multi-layered data collection to determine the innovation's causality.

The findings of this review in the section on how WA was employed, show similarities across all studies. Only a few variations made the instructional design slightly different among them. As the findings of this study showed, the teacher's role was to encourage student interaction, monitor their communication activities, ensure their engagement, and provide feedback. Meanwhile, the role of students is to respond to the activities initiated or shared by the teacher and be actively involved in such activities. This calls for teachers and researchers to conduct more research exploring WA's features for creative language teaching and learning. Additionally, more research needs to be conducted on different language skills. The most identified language skills in the studies included vocabulary, writing, and speaking. Other language skills, such as listening and reading, are less investigated. Thus, it suggests that more innovative activities with different language skills need exploring. A similar suggestion was also offered in Klímová's (2018) study that there is a need to investigate "the efficacy of the use of mobile phone and smartphone apps on specific language skills and knowledge" particularly from the perspective of longitudinal quantitative research (p. 1098).

In terms of advantages, this review study unravelled that using WA facilitated the teaching and learning process by supporting listening and reading comprehension,

improving word retention, encouraging students to be more active, increasing students' motivation and participation, and providing convenience for instant communication and information sharing. Although the various benefits of using WA have been widely reported, this does not mean that the use of WA can replace traditional teaching and learning. However, it should be seen as a possible effective complement for educational purposes. As Samaie et al. (2018) suggest, the inclusion of WA should be based on its pedagogical characteristics to achieve the expected learning activities. Thus, the potential benefit of using WA should be maximized to help achieve learning objectives, not deter teaching and learning.

In relation to the effectiveness of WA, some studies reported that a group of students employing WA outperformed the other traditional group. Another study also reported that students gained better results in the post-test than in the pre-test. In the reviewed articles, only three studies reported significant differences were not found, and one study with an inconclusive result. This review revealed that using WA in language learning led to effective results. This concurs with the findings of Klímová's (2018) study that using mobile applications positively affects foreign language learning. However, research measuring the effectiveness of using WA in this review study is less compared to others. Thus, further research is needed to measure the effectiveness of using WA in ELT, particularly emphasizing methodological rigour and longitudinal investigations. So, there is enough substantial evidence to draw such a conclusion.

Regarding challenges, this study found that technical issues are the most common challenges reported in the literature. The challenges in the reviewed studies are also in line with what was reported by Bouhnik and Deshen (2014). They found some technical issues, such as too many messages and late responses, educational challenges, such as students' behaviour, and academic challenges, such as using informal language (e.g., slang). This implies that the teacher's role is central to managing issues that emerge during the implementation. Besides, the teacher's model of student instructional activities should also be considered. Ankeny (2019) rightly said that "it was not the application itself, but the manner in which the technology was incorporated with clear language learning goals aligned with the curriculum that yielded positive results" (p. 2). Thus, it is necessary to inform the teacher's instructional design with evidence from related empirical research.

The findings of this study contribute to teachers and researchers when it comes to developing instructional designs integrating WA in teaching. Teachers can use the findings of this systematic review to inform their instructional design for teaching. In addition, they can consider the challenges mentioned in this review to develop unique ideas to include in their instructional design. Besides, the findings can inspire researchers to undertake similar research to address the available gaps in the literature. However, this systematic review has one apparent weakness. The reviewed articles were retrieved mainly from a single database, which limits the number of reports to be reviewed. Thus, it is necessary to include other databases (e.g., Web of Science, although many studies reviewed here are also indexed in this database) to extend the current findings.

Conclusion

To the best of our knowledge, this is the first review study on using the WA as a language learning tool in ELT. This study provides information about the trends, ways of WA employed in ELT, and the main findings. It is expected that the findings of this study inspire language teachers or researchers to conduct more research on this topic.

The following suggestions are proposed for future research and practitioners based on the study's findings. The findings revealed that most research was conducted in the context of higher education institutions. Meanwhile, little research has been reported in the context of primary and secondary education, especially research reports conducted by teachers in these contexts. Thus, it is necessary to conduct more research on using WA in the context of primary and secondary education. In addition, systematic review research on using WA as a learning platform is still scarce. Therefore, other similar studies need to be carried out using different research methods, such as meta-analysis and scoping reviews or adopting critical perspectives. It aims, for instance, to extend the research findings regarding the effectiveness of using WA as a learning tool. Additionally, the limitation of the present study suggests that further systematic review, including more databases, should be undertaken. Finally, there also needs to be more research focusing on reading and listening skills, as this study found that research into the use of WA in language teaching mainly investigated the aspects of vocabulary, speaking, and writing skills.

Since reports from primary and secondary teachers found in this study are limited, it is encouraged for them to report their teaching practices that incorporate WA. In addition, the researchers' ways of employing WA in their English teaching and learning share similar instructions with some variations. Thus, there is a call for more innovative activities that use WA in language teaching and learning, such as maximizing the use of WA's potential pedagogical features to support students learning. It is also suggested that instructors should inform their instructional designs of integrating WA with the findings of related empirical research.

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Appendix

Lists of selected articles

Title	Author(s)	Year	Research Method
Knowledge sharing through WhatsApp: Does it promote EFL teachers' reflective practice?	Farahian & Parhamnia	2022	Mix-methods
Learning through WhatsApp: Students' beliefs, L2 pragmatic development and interpersonal relationships	García-Gómez	2022	Qualitative
WhatsApp implementation on pedagogical content courses during COVID-19 pandemic: Students' learning activities and perception	Ratminingsih et al.	2022	Qualitative
EFL learners' engagement and learning motivation in team-based mobile language learning through WhatsApp	Imamyartha et al.	2022	Mix-methods
Accessible and engaging voices: Teaching English to adult second-language learners with visual impairment using WhatsApp voice notes in India	Karthika & Selvam	2022	Qualitative
Pre-service EFL teachers' conceptions of learning about SLA through online discussion forums and WhatsApp in blended learning	Sandoval-Cruz et al	2022	Qualitative

Effects of using the WhatsApp application on language learners motivation: A controlled investigation using structural equation modelling	Alamer & Al Khateeb	2021	Quantitative
Utilizing WhatsApp-driven learning during Covid-19 outbreak: EFL users' perceptions and practices	Budianto & Arifani	2021	Mix-methods
Learners' perceptions on WhatsApp integration as a learning tool to develop EFL vocabulary for speaking skill	Khan et al.	2021	Mix-methods
The impact of mobile technology on vocabulary learning of L2 learners: The case of WhatsApp application	Tahounehchi	2021	Quantitative
Using WhatsApp to support EFL reading comprehension skills with Turkish early secondary learners	Akyıldız & Celik	2021	Mix-methods
Enhancing EAP learners' academic vocabulary learning: An investigation of WhatsApp-based reporting and receiving activities	Arifani & Jumadi	2021	Quantitative
WhatsApp as part of an EFL programme: Participation and interaction	MacKay et al.	2021	Quantitative
Developing ESL writing content through online discussions on WhatsApp	Haron et al.	2021	Mix-methods

A new vocabulary revision technique using WhatsApp: Peer-chain	Balci & Kartal	2021	Mix-methods
Extending language learning beyond the EFL classroom through WhatsApp	Tragant et al.	2021	Qualitative
Impact of WhatsApp interaction on improving L2 speaking skills	Sherine et al.	2020	Mix-methods
Individual or collaborative WhatsApp learning? A flipped classroom model of EFL writing instruction	Arifani et al.	2020	Quantitative
Feedback and mobile instant messaging: Using WhatsApp as a feedback tool in EFL	Soria et al.	2020	Mix-methods
Bringing classroom and outside world together: Mobile instant messaging via WhatsApp© for extracurricular writing	Çetinkaya	2020	Qualitative
Mobile-mediated dynamic assessment: A new perspective for second language development	Andujar	2020	Mix-methods
Using WhatsApp to extend learning in a blended classroom environment	Annamalai	2019	Qualitative
The application of small WhatsApp groups and the individual flipped instruction model to boost EFL learners' mastery of collocation	Arifani	2019	Quantitative

A new trend in preparing for foreign language exam (YDS) in Turkey: Case of WhatsApp in mobile learning	Saritepeci et al.	2019	Qualitative
Students' success in English vocabulary acquisition through multimedia annotations sent via WhatsApp	Çetinkaya & Sütçü	2019	Mix-methods
Interweaving technology and language goals to promote academic vocabulary: The role of WhatsApp in an intensive English classroom	Ankeny	2019	Quantitative
Let's listen through WhatsApp: An energizing listening exercise in EFL Class	Setyowati	2019	Mix-methods
The impact of WhatsApp on EFL students' vocabulary learning	Bensalem	2018	Quantitative
The effects of Facebook and WhatsApp on success in English vocabulary instruction	Çetinkaya & Sütçü	2018	Mix-methods
Gender and EFL writing: Does WhatsApp make a difference?	Bataineh et al.	2018	Quantitative
How do we know what is happening in WhatsApp: A case study investigating pre-service teachers' online activity	Annamalai	2018	Qualitative
An inquiry into the efficiency of WhatsApp for self and peer-	Samaie et al.	2018	Mix-methods

assessments of oral language proficiency			
Social networks and their effectiveness in learning foreign language vocabulary: A comparative study using WhatsApp	Dehghan et al.	2017	Quantitative
Mobile instant messaging: WhatsApp and its potential to develop oral skills	Andujar	2017	Mix-methods
Effect of WhatsApp on critique writing proficiency and perceptions toward learning	Awada & Wang	2016	Mix-methods
Mobile immersion: an experiment using mobile instant messenger to support second-language learning	Lai	2016	Quantitative
Do smartphones spur or deter learning: A WhatsApp case study	Yavuz	2016	Quantitative
Benefits of mobile instant messaging to develop ESL writing	Andujar	2016	Mix-methods
Writing through WhatsApp: An evaluation of students writing performance	Allagui	2014	Qualitative