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Effects of Using the WhatsApp Application on Iranian Intermediate EFL Learners' Vocabulary Learning and Autonomy

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Article abstract

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Effects of Using WhatsApp: Iranian Intermediate EFL Learners' Vocabulary Learning and Autonomy

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Abstract

The current study was designed to determine if the use of blended learning (combining face-to-face instruction and mobile-assisted language learning using WhatsApp) contributed to the vocabulary learning and autonomy of Iranian English as a foreign language (EFL) learners, compared to the traditional method. To assess their English skills, the Preliminary English Test (PET) was given to 80 homogenous intermediate learners at the beginning of the study. The study's intended participants were 50 EFL learners whose scores were within the intermediate competency level. Then, the participants were divided randomly between experimental and control groups. One-way between-groups analysis of covariance was run. Findings from post-test scores indicated a statistically significant difference between the experimental and control groups. Another one-way between-groups analysis of covariance was performed to assess the impact of two distinct blended learning versus traditional teaching treatments on EFL learners' autonomy. In the post-test results, a significant difference between the control and experimental groups' performance was observed. This study provided insights into how technology may be applied to teach language components and skills.

Keywords: autonomy, blended learning, Iranian intermediate EFL learners, vocabulary learning, WhatsApp

Introduction

With the rapid development of new types of online technologies and applications, language teaching and learning has entered a new stage. Most learners from around the world have tried learning languages through Websites, online applications, and Internet-based technologies. Undoubtedly, the COVID-19 pandemic has highlighted the vital role of online learning; learner-teachers and learner-learner interaction has been one of the most important issues when considering the quality and availability of online platforms for academic instruction. Although many studies have advocated the use of online applications in teaching the English language, it was the COVID-19 pandemic that forced English language teachers to use different types of applications and platforms in place of face-to-face classes (e.g., Mardiah, 2020; Wu & Miller, 2020; Yulia, 2020).

Vocabulary is the backbone of language classes (Torki, 2011). It is a significant key to teaching English because without adequate vocabulary, students cannot comprehend others or declare their opinions. According to Nation (2006), vocabulary knowledge forms the basis for developing communicative competence in English. Lack of vocabulary knowledge in second and foreign language learning contexts may be a significant barrier to learners' development of reading and listening skills. Grabe and Stoller (2018) asserted that a wide variety of important issues are typically grouped under the topic of vocabulary learning, including (a) learners' specific vocabulary demands and wishes, (b) word saliency as well as word frequency, and (c) learning burden. However, in the past, the role of vocabulary in language teaching has been overlooked; it was assumed that vocabulary would take care of itself. Insufficient vocabulary knowledge not only leads to communication breakdowns in language learners, but it also makes the acquisition of other language skills more challenging (Liu et al., 2014). As a result, the study of vocabulary teaching has become increasingly important in language teaching research (Milton & Alexiou, 2012). Furthermore, due to changes in learners' needs and the appeal of new technologies, new methods have emerged. The use of new digital technologies, computers, and the Internet have become the most appealing and widely accessed tools for language teaching and learning.

Developing learner independence is a crucial factor in the language teaching process. The concept of learner independence or learner autonomy refers to a notion in which learners can direct and monitor their own learning. It indicates the types of activities that happen with no immediate supervision from the teacher. Autonomous learners determine their own activities and strategies to foster independent learning. Therefore, learners alone are responsible for their learning. This independence requires learner engagement which may lead to better and more comprehensive learning. Autonomy is initiated in the class and extends beyond the classroom walls.

Learners who begin and take responsibility for their learning, as well as share their learning with teachers and peers, may benefit from mobile devices (Vavoula & Sharples, 2008). Mobile gadgets can also provide a more independent learning environment (Benson & Chik, 2010; Fisher & Baird, 2006). Consequently, mobile learning complements the more traditional methods and approaches to education.

The growth of the Internet, software, and mobile applications and devices has resulted in the rise of social media programs built for electronic devices (Karpisek et al., 2015). WhatsApp, the most popular mobile communication program, is a free messaging and calling program that also allows users to share material

such as audio, video, photos, location, and contacts. Because of the popularity of such applications, many language instructors are interested in seeing how they may use WhatsApp to teach aspects of second language teaching. As a result, it is worthwhile to investigate the possibility of enhancing language students' vocabulary learning outside the classroom in order to accelerate learners' vocabulary acquisition (Schmitt, 2019).

While many researchers have investigated vocabulary teaching through using the Internet and different applications, very few studies can be found that have discussed the advantages of applying WhatsApp in vocabulary teaching in Iranian English as a foreign language (EFL) contexts. This study examined the use of blended learning with WhatsApp with Iranian women learning EFL at an intermediate level. This study was framed by two research questions:

1. Compared with conventional approaches, is there any significant difference in Iranian women's EFL vocabulary acquisition at an intermediate level when blended learning via WhatsApp is used?

2. Compared with conventional approaches, is there any significant difference in autonomy for Iranian women learning EFL at an intermediate level when blended learning via WhatsApp is used?

Literature Review

To learn a language, building a comprehensive vocabulary reservoir is a must. Because of the large number of words involved, understanding the meaning of a second language vocabulary is a substantial learning difficulty for second language learners (Schmitt, 2014), and learners must grasp as well as connect the form and meaning of a term (Nation, 2013).

Blended learning (BL) was introduced to bring a more active and student-centered style to instructional situations. By presenting course content online, instructors were able to implement varieties activities before and after class; this provided learners an opportunity where both teachers and students were actively engaged in language learning activities. Application of new online technology has enhanced students' willingness to participate in vocabulary learning and decreased teachers' authoritative role (Wang & Young, 2014).

Blending traditional instruction with technology-mediated instructional methods satisfied learners' needs and increased their learning levels. This new approach is called "hybrid or blended learning" (Rogers, 2018, p. 11). It mixes face-to-face with virtual learning and teaching experiences to bring about interactive textual exchange in learning networks. According to Picciano (2009), blended classes are those in which face-to-face and online activities are joined, with both contributing to instruction. Moreover, he asserted that in blended classes, online activities substituted for part of traditional face-to-face sessions. Similarly, Tomlinson and Whittaker (2013) asserted that "blended learning is the term most commonly used to refer to any combination of face-to-face teaching with computer technology (online and offline activities/materials" (p. 12). Anthony et al. (2019) indicated that blended learning had a positive effect on the development, assessment, methods of knowledge transmission, and encouragement of teaching instructors. In short, for both teachers and learners, blended learning has provided different benefits and

eradicated the constraints of time and place. Teaching and learning can occur wherever and whenever students need and want to learn.

WhatsApp, a free downloadable program, is an instant messaging application compatible with almost all smartphone operating systems. WhatsApp has gained popularity around the world as a social network application able to satisfy many people's communication needs (Bouhnik et al., 2014). WhatsApp is capable of sending different kinds of media like pictures, video, and audio, among others. Moreover, recording and sending voice files immediately to other users is one of the outstanding characteristics of WhatsApp. It also allows users to form a group of individuals with whom they may wish to talk.

Figure 1

The WhatsApp Logo

WhatsApp can be a powerful application to support foreign language learning; many teachers use it in online classes because of its capacity to enhance interaction between teachers and learners (Cifuentes & Lents, 2010). WhatsApp allows teachers to save time and better manage the classroom while also keeping students informed about what is going on in class (Lauricella & Kay, 2013), increases learners' language abilities and technical skills (Rambe & Chipunza, 2013), and enhances learners motivation (Abdullah & Al Khateeb, 2021). Moreover, WhatsApp promotes active learning through informal communication between students (Smit & Goede, 2012) and the development of strong communication standards; it also improves learners' engagement in EFL classrooms (Baffour-Awuah, 2015). For example, WhatsApp enhances peer communication and student-instructor engagement, (Bouhnik et al., 2014), and second language development (Andujar-Vaca & Cruz-Martnez, 2017), both of which create a feeling of belonging to a learning community (Doering et al., 2008). Because their comments in a WhatsApp group are public, students may take assignments more seriously (Sweeny, 2010) and be more diligent in doing their homework (Cifuentes & Lents, 2010). Researchers have investigated the impact of WhatsApp for vocabulary learning (Barhoumi, 2015; Basal et al., 2016; Church & De Oliveria, 2013; Lawrence, 2014). As a result, WhatsApp has established itself as a superior option for vocabulary development, particularly for weak pupils. Therefore, many language teachers have selected WhatsApp as the venue for language learners to obtain and submit their assignments.

Learner autonomy combines concepts from different perspectives. At first, learner autonomy was characterized as "ability to take responsibility for one's own learning" (Holec, 1981, p. 3), Holec (1981) believed that language learners need opportunities to be responsible for making decisions regarding specific learning methods, needs, and capabilities. Thus, learner autonomy refers to the ability to learn actively in a self-contained environment (Little, 1991). Cotterall (1995) characterized autonomous learners as those who

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solve the difficulties which cultural criteria, educational background, and previous experience might have created. These learners realize their educational and personal needs, and are also able to plan the aims and targets for their own learning. Furthermore, Little (2012) stated that learner autonomy is "the product of interdependence rather than independence" (p. 20) which alludes to the synergy between whole and individual activities. Serdyukova and Serdyukov (2013) believed that learner autonomy is crucial for a learner's continuous development and learning efficiency.

A variety of perspectives and principles have emerged from the literature on learner autonomy. For instance, Benson (2007) classified learner autonomy into four categories—psychological, technical, socio-cultural, and political-critical. Furthermore, Benson (2007, 2011) presented five principles for gaining autonomy in learning. The first was active involvement in student learning; students should be discouraged from too much dependence on teachers, who should act as facilitators. The second principle was to provide options and resources, and the third was to present selection and decision-making opportunities. As a result, students will be motivated to decide what they wish to learn about. The fourth and the fifth principles were supporting learners to improve their learning strategies and providing sufficient motivating reflection.

According to Little (1991), autonomy is a "capacity for detachment, critical reflection, decision-making, and independent action" (p. 4). Learning can be "more focused and more purposeful and thus more effective both immediately and in the longer term" (Little, 1991, p. 8). Little (2012) also argued that learners can determine their own learning purpose and the content they wish to study. Moreover, he believed meta-cognitive awareness was crucial in accelerating learner autonomy. Nearly all definitions of learner autonomy have included the idea that learners' own learning process is the pivotal point in learning. Learners bring their own beliefs and thoughts to their engagement with the world outside of the physical classroom. Particularly for foreign language learning, this means not merely practicing the target language in the classroom. Learning extends beyond the time when classes finish and is more than simply rote memorization. As proposed by Reeve (2016), the main purpose of supporting autonomy is to clarify and sustain the learning process, class environment, and relationship between teacher and student in ways that encourage autonomy. Shirzad and Ebadi (2019) claimed that learners should be encouraged to collaborate with peers in the classroom to achieve higher levels of autonomy in the language learning process.

Hamilton (2013) stated that technology improved the accessibility and availability of the second or foreign language environment and provided learners with independence necessary for self-directed learning. Furthermore, it offered "structured unpredictability," believed to be crucial to the development of learner autonomy (Little & Throne, 2017, p. 20). According to Little and Throne (2017), current technology helped create and mediate social learning environments which supported learners. In the context of EFL, the use of mobile technologies enhanced learners' autonomy. In the Saudi EFL setting, Almekhlafy and Alzubi (2016) discovered that students gained a sense of independence by choosing what to converse about on WhatsApp. In India, Ramamuruthy and Rao (2015) claimed that the use of mobile phones encouraged EFL undergraduates to learn independently. Similarly, learners in Japan, according to Leis et al. (2015), had a propensity to be autonomous in terms of investing their spare time and taking care of their own learning.

In formal learning environments, study of the interplay of technology and autonomy has mostly focused on the extent to which technology impacted learners' performance and growth of autonomy. For example, Pellerin (2017) argued that learners had more independence in online learning environments, and their

digital identities were reinforced through technology. Recently, several studies (Alshammari et al., 2017; Hashemifardnia et al., 2018; Kartal, 2019; Kholis, 2020) focused on the effect of applying WhatsApp, and all agreed that this application played an effective role in facilitating language teaching and learning by increasing learners' autonomy.

On the other hand, technology may create roadblocks to the establishment and implementation of learner autonomy (Reinders & Hubbard, 2013). These authors asserted that for some learners, real language communication via technology may be difficult in practice. Also, Lai and Zheng (2018) believed that some technological instruments and the contexts of their use (e.g., tiny displays, loud locations, limited time for mobile phone use) may limit learners' ability to utilize them for independent behaviors.

Methodology

Participants

Fifty Iranian EFL learners were the participants of this study. They were registered in an English institute in Kermanshah province (Iran) at an intermediate level of language proficiency. All participants were women, with ages ranging between 16 and 19 years with an average mean age of 17.5 years. Based on a convenience sampling method, they were selected for their availability and ease of access. All the learners completed a consent form and agreed to the use of their test data for the current study. Participants were assured that their test scores would be kept confidential and never associated with their names.

Data Collection Instruments

The Preliminary English Test (PET) was used to ensure that the participants were homogeneous concerning their level of language proficiency. The vocabulary knowledge scale (VKS; Paribakht & Wesche, 1999) was applied to assess how well learners knew each word. Although, Paribakht and Wesche (1999) confirmed the practicality of the VKS and asserted that it may be applied with any selected series of words, the reliability of VKS using Cronbach's alpha was estimated to be 0.91. In order to measure students' knowledge of words, a vocabulary achievement test was constructed. Forty items were taken from vocabulary lists the students had previously studied. First, 100 words were chosen from their course book, Touchstone 4. Then, drawing on the scale developed by Paribakht and Wesche (1999), these words were administered to the learners in order to select the 40 words that none of the students knew. Finally, the selected words were used as the items of the vocabulary test to measure the students' vocabulary achievement.

The test items were reviewed by experts; modifications and revisions were done after piloting the test with learners who were similar to the study sample. Using Cronbach alpha, the reliability of this test was estimated to be 0.76, which is acceptable. The vocabulary test was administrated twice to evaluate vocabulary achievement, first as a pre-test and later as a post-test. Since it aligns with the definition of language learner autonomy discussed above, the learner autonomy questionnaire (LAQ; Zhang & Li, 2004) was used at the beginning and end of the experiments to account for the participants' autonomy. Zhang and Li (2004) reported that the questionnaire had high validity and estimated its reliability to be 0.80.

Learner Resources

The *Touchstone* series (2nd ed.) was designed for adult learners to encompass four language skills and components. There are 12 units in each of four student books which cover a broad range of topics. Each unit consists of four lessons.

The WhatsApp application was included in this study as it had the capability to send messages from one person to another or to a group. A whole class, typically a teacher and a group of students, might participate in activities through WhatsApp's content sharing and messaging functions. This made it possible to have classroom activity or language study outside of school time. Users could easily monitor the operation; anytime and anywhere, they only needed to open their WhatsApp application.

Procedure

At the beginning of the study, the researcher administered the PET to 80 intermediate learners to measure their English proficiency. Then, 50 female learners were selected as the intended participant sample. These participants' scores fell within the range of intermediate proficiency. The selected participants were divided into two groups, an experimental and a control group. The Learner Autonomy Questionnaire and vocabulary knowledge test were given to these learners before and after the treatment to determine their autonomy and vocabulary proficiency at the beginning of the study.

To create the vocabulary knowledge test, the researcher created a list of words from the material taught in face-to-face instruction and attempted to include vocabulary from different parts of speech. These words were administered to the learners using the Paribakht and Wesche (1999) scale to select the 40 words students were unfamiliar with, to be used as elements of the test to assess the students' vocabulary.

The researcher then created the blended learning course, a mixture of face-to-face and WhatsApp-mediated instruction for the experimental group only. The same teacher taught the face-to-face group using the same curriculum, from the Touchstone 4 resources (McCarthy et al., 2014). The treatment lasted 15 sessions; each session was 90 minutes in duration. Prior to implementation, the researcher created a WhatsApp chat group for the teacher and students from the experimental class. For each vocabulary word, the teacher created an information message that included an English explanation, pronunciation, synonyms and antonyms, and a single example sentence. These messages were based on the vocabulary parts of the students' English coursebook. Information messages in the WhatsApp group were exchanged at random times between 09:00 and 21:00 every day. To ensure that all the messages were received and read by the learners, the messages were tracked and monitored. Participants were asked to use the words to make a sentence and share them in groups. If any errors were made, participants were expected to address their peers' sentences. The control group used only the traditional method (i.e., coursebook, classroom interaction, classroom participation, and activities). After the instruction was completed, the post-test of vocabulary achievement was given to all participants to check the impact of the instruction on developing learners' vocabulary knowledge. Additionally, the learners completed the Learner Autonomy Questionnaire to highlight the probable contribution of blended instruction in developing learners' autonomy.

Results

Participant Selection

The practical phase of this study began with selecting the participants by employing convenience sampling and random assignment. To do so, the PET was administered to a group of 80 students, which enabled the researcher to draw a sample of 50 homogenous learners and randomly assign them to one of the two groups in the study (i.e., experimental and control groups).

Table 1

Descriptive Statistics of Initial and Selected Participants' PET Scores

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Pet	80	141.00	169.00	154.86	6.72	-.051	.269
	50	150.00	160.00	154.78	2.40	-.22	.33
Valid N (listwise)	50						

As reported in Table 1, the initial group of 80 participants had a mean of 154.86 and a standard deviation of 6.72 in their PET. Accordingly, participants whose scores fell within the range of Mean ± 1 SD (148.14 and 161.58) were selected as homogenous participants. The results of descriptive statistics for selected participants showed that their minimum score was 150 and their maximum score was 160 with a mean of 154.78 and a standard deviation of 2.40.

Addressing the First Research Question

To investigate the contribution of blended learning via WhatsApp to Iranian intermediate EFL learners' vocabulary learning, ANCOVA was applied to the vocabulary knowledge data. First, the Kolmogorov-Smirnov Test was run to check the normal distribution of scores.

Table 2

Vocabulary Knowledge: One-Sample Kolmogorov-Smirnov Test

Data source	n	Normal parameters[a,b]		Most extreme differences			Kolmogorov-Smirnov Z	Asymp. sig. (2-tailed)
		Mean	SD	Absolute	Positive	Negative		
Pre-test	50	21.9200	2.07846	.158	.142	-.158	1.120	.163
Post-test	50	28.8800	5.72371	.191	.191	-.167	1.351	.052

[a]Test distribution is normal. [b]Calculated from data.

The results in Table 2 showed that participants' scores on pre- and post-instruction vocabulary knowledge tests were normally distributed (p = .16, .052; p > .05).

Table 3

Descriptive Statistics of the Vocabulary Post-Test

Group	Mean	SD	Number
Experimental	34.20	2.00	25
Control	23.56	1.98	25
Total	28.88	5.72	50

As illustrated in Table 3, the mean score for vocabulary knowledge among participants who were exposed to a blended learning course was 34.20; however, the mean score for vocabulary knowledge among participants who were exposed to traditional instruction was 23.56.

Table 4

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1455.88a	2	727.94	229.01	.00	.90
Intercept	152.92	1	152.92	48.10	.00	.50
Pre-vocabulary	40.76	1	40.76	12.82	.00	.21
Grouping	1271.57	1	1271.57	400.03	.00	.89
Error	149.39	47	3.17			
Total	43308.00	50				
Corrected Total	1605.28	49				

To determine the effectiveness of blended learning versus conventional instruction on learners' vocabulary knowledge, one-way between-groups analysis of covariance was run. The independent variable was the type of instruction (blended learning and conventional instruction), the dependent variable was learners' scores on the vocabulary knowledge post-test, and participants' scores on the vocabulary knowledge pre-test were used as the covariate in this analysis. The results revealed a significant difference between the control and experimental groups in terms of their post-test scores.

Addressing the Second Research Question

To address the effectiveness of the application of WhatsApp on Iranian intermediate EFL learners' autonomy, ANCOVA was applied. The Kolmogorov-Smirnov Test was used to determine the normal distribution of data.

Table 5

Learner Autonomy: One-Sample Kolmogorov-Smirnov Test

Data source	n	Normal parameters[a,b]		Most extreme differences			Kolmogorov-Smirnov Z	Asymp. sig. (2-tailed)
		Mean	SD	Absolute	Positive	Negative		
Pre-test	50	55.72	3.194	.115	.065	-.115	.813	.524
Post-test	50	66.64	10.69	.233	.233	-.214	1.645	.069

[a]Test distribution is normal. [b]Calculated from data.

The results in Table 5 indicated that learners' scores on the pre- and post-instruction autonomy scale had a normal distribution ($p = .52, .06; p > .05$).

Table 6

Descriptive Statistics Post-Instruction Administration of Autonomy Scale

Grouping	Mean	SD	Number
Experimental	76.88	3.018	25
Control	56.40	2.466	25
Total	66.64	10.69	50

Table 6 illustrates the descriptive statistics for the control and experimental group's scores on the post-instruction administration of the autonomy scale. For the experimental group, the mean was 76.88 with a standard deviation of 3.01, while for the control group, the mean was 56.40 with a standard deviation of 2.46.

Table 7

Tests of Between-Subjects Effects

Source	Type III sum of squares	df	Mean square	F	Sig.	Partial Eta squared
Corrected model	5358.146a	2	2679.073	504.930	.000	.956
Intercept	248.664	1	248.664	46.866	.000	.499
Pre-autonomy	115.266	1	115.266	21.724	.000	.316

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Grouping	4965.782	1	4965.782	935.91	.000	.952
Error	249.374	47	5.306			
Total	227652.000	50				
Corrected total	5607.520	49				

The control and experimental groups' post-test performances revealed a statistically significant difference. As Table 7 indicates, blending WhatsApp into teaching activities showed a positive effect on students' autonomy in learning vocabulary. Also, the findings confirmed that learner autonomy had a significant effect on these Iranian EFL learners and paved the way for them to learn vocabulary more effectively.

Discussion

The present study investigated how the impact of using WhatsApp contributed to the development of vocabulary learning and autonomy of Iranian intermediate EFL learners. The first research hypothesis postulated that applying blended learning via WhatsApp to Iranian intermediate EFL learners' vocabulary learning would make no difference. The results rejected this hypothesis. Applying WhatsApp in the process of language teaching significantly developed Iranian EFL learners' vocabulary knowledge. Hence, the findings show that using WhatsApp interaction to improve learners' vocabulary learning was more successful than traditional education alone. Similarly, the same results were reported by Kholis (2020) whose results indicated that WhatsApp was an effective and efficient tool for facilitating foreign language learning. Furthermore, the results of this current study align with Kartal (2019) who asserted that WhatsApp positively enhanced vocabulary learning. The results of this study were also consistent with Hashemifardnia et al. (2018) who argued that the application of WhatsApp greatly improved Iranian EFL learners' vocabulary learning.

The findings of the current study showed that the achievement of students in the WhatsApp group improved considerably when compared to the other group, which is comparable to similar studies. For example, Ashiyan and Salehi (2016) investigated the influence of WhatsApp on the learning and retention of English collocation knowledge and found that using WhatsApp was a considerable help for learners in this regard. Similarly, Wang and Shih (2015) as well as Jafari and Chalak (2016) revealed that WhatsApp had a significant influence on students' vocabulary development. The present study's findings were consistent with several prior investigations that determined that using technology enhances vocabulary development (Naraghizadeh & Barimani, 2013; Thornton & Houser, 2005).

Similar to previous research, this current study found that the use of blended learning via WhatsApp increased EFL learners' level of autonomy (Alshammari et al., 2017). The findings of this current study reflected thos of Hazaea and Alzubi (2018) who asserted that a boost in a sense of autonomy was found among the learners who applied WhatsApp. Furthermore, they said that learners were not limited to the

classroom, rather they extended their learning outside the classroom walls. Also, the findings of this study correspond with Plana et al. (2013) who discovered WhatsApp enhanced students' interest in reading autonomously in foreign language learning.

Conclusion

This study's findings showed that the blended learning course was effective and helped students learn English. The learning context of this study encouraged students to learn at their own speed while providing rich resources that were available and convenient to use. It also provided traceable learning progress that enhanced students' awareness of autonomy and its significant role in their learning, and encouraged them to work at developing learner autonomy. The blended course extended limited class time and allowed students to learn in a constructive, supportive, and immersive learning environment.

This study determined the impact of using WhatsApp for vocabulary learning in Iranian contexts. Compared to face-to-face instruction, the findings demonstrated that using WhatsApp greatly enhanced learners' vocabulary learning. Furthermore, for most participants, using WhatsApp as a learning tool enhanced their autonomy, which was a pleasant experience. This study highlighted the importance of blending WhatsApp in teaching to boost learners' vocabulary knowledge and increase their autonomy. Students were interested in using this platform. Access to educational resources without barriers of time or space encouraged them to work on their studies. In addition, the feeling of virtual community that was formed among students and teachers via the use of WhatsApp group chat might also have encouraged them in their efforts.

The accessibility of WhatsApp and awareness of applicable features improved students' vocabulary learning. In this regard, Church and de Oliveira (2013) stated that easy access and affordability of WhatsApp made it more helpful and efficient than other social applications. WhatsApp may also be used as a discussion platform, so it allowed language instructors and pupils to start conversations that boosted learning and gave students more autonomy. WhatsApp also supported an anxiety-free environment, which enhanced students' sense of belonging. Using WhatsApp to teach vocabulary allowed learners and teachers to exchange data, as well as speed up cooperation among students. Similarly, WhatsApp can facilitate interaction between students and instructors. Overall, the findings provided empirical support for claims in the literature that synchronous blended learning positively affected students' autonomy in the context of technology-based instruction.

This study offered some beneficial pedagogical implications for instructors, educators, and learners. One recommendation from the findings is to use WhatsApp to compensate for time constraints. Another is to share a range of information (e.g., photos, text, audio, video), thereby providing genuine resources for various language skills and components. Instructors should consider using WhatsApp as a guide to conduct and create a responsible learning environment for students. Thus, educational policymakers should devote more time to developing an English language curriculum that includes various forms of social educational networks to improve students' language abilities, and the use of WhatsApp should be prioritized.

It is important to note that this study had some limitations. Since the participants were all women, findings may not be generalizable to different populations such as men only or heterogeneous groups. The second limitation of the study is the inclusion of Iranian EFL learners from a province in the west of Iran who may not be representative of EFL learners from all provinces in Iran. A similar study should be reproduced with other learners in various cultural situations, at various ages, and at various language levels. Finally, the study's focus was confined to vocabulary learning. Therefore, it is proposed that broader studies include additional language components and skills.

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