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Research Article

On the Effect of E-Portfolio and MALL-Oriented Recast on EFL Learners' Grammatical Knowledge

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ABSTRACT

The current study was done to assess the effect of using e-portfolio and MALL-oriented recast on Iranian English language teaching B.A. students. To do the study, 200 English language students of Islamic Azad University of Shiraz were selected to participate in the study. Initially, the Quick Oxford Placement Test was run to check their homogeneity, and based on the scores 120 students were chosen as the main participants of the research and were later divided into 3 groups, 38-45 participants in each. Then, a pre-test of grammar was administered to the participants (N= 120) of the three groups to reveal their grammatical knowledge before the treatment. Then, the 45 participants of the control group utilized conventional methods of grammar, the participants of the first experimental group (N=38) utilized e-portfolio and the participants of the second experimental group (N=37) utilized MALL-oriented recast to enhance their grammatical knowledge. Finally, a post-test of grammar was administered to the participants of the three groups. The results of the paired samples t-test showed that e-portfolios and MALL-oriented recast significantly enhance the grammatical knowledge of Iranian students. Furthermore, the findings showed that there was a significant difference between the effects of using the strategies on Iranian English language teaching B.A. students. The results of the study assist the students in enhancing their grammatical knowledge in the process of foreign language learning.

Introduction

The advent of the Internet has profoundly transformed how individuals conduct their activities and has significantly altered educational systems. It serves a pivotal role in facilitating interactions among people by acting as a primary medium of communication (Ayu, 2020). Educators and administrators have acknowledged the substantial role of the Internet as an instructional tool. Numerous universities are demonstrating growing interest in the potential of online learning to offer accessible modern education to students of diverse ages and backgrounds, irrespective of temporal and geographical constraints. Elango et al. (2008) argue that the Internet is considered a crucial tool for overcoming educational inequalities, offering young people the opportunity to become lifelong

learners in the 21st century, and enabling them to adopt learning methods that align with their individual educational needs and attitudes. In this technological era, where learners are expected to access extensive information, the Internet is regarded as the most essential tool for providing access to a vast array of knowledge. That is, it acts as a gateway to a vast library of information, empowering students to independently research, analyze, and synthesize knowledge from a multitude of sources (Elango et al., 2008). This fosters critical thinking skills and a deeper understanding of complex topics.

E-learning is widely perceived as the singular solution to addressing the challenges associated with distributing essential resources to enhance lifelong learning (European Commission, 2010). E-learning courses are also considered instrumental in enhancing students' knowledge and skills for future professional endeavors (Yilmaz, 2012). According to Fang (2007), e-learning encompasses a variety of methods, ranging from utilizing email communication with students to accessing comprehensive online courses. With the growing emphasis on lifelong learning, e-learning has emerged as a prevalent and widely accepted tool among 21st-century students. Kasworm (2011) acknowledges that e-learning facilitates flexible learning experiences, granting students access to resources tailored to their specific needs. It also provides additional resources for easily obtaining information and sending feedback. Furthermore, several universities have integrated technology by incorporating e-learning into their teaching methods to address diverse learning needs (Turney et al., 2009). Therefore, the integration of technology, education, and innovative pedagogical approaches in recent years has enabled teachers to create more engaging, stimulating, and practical learning environments. One notable example of this is the implementation of meaningful learning through e-portfolios.

One of the key benefits of effective language learning strategies is their transferability to real-life situations (Babaee, 2012). This means that students can not only understand and use the target language in a classroom setting, but also confidently apply their skills in everyday communication. Teachers have long strived to create engaging and enjoyable learning environments that motivate students and facilitate meaningful language acquisition (Dolati & Mikaili, 2011). Here's where technology can play a transformative role. Technology offers a variety of tools and platforms that can cater to different learning styles and preferences. Interactive exercises, simulations, and virtual environments can make language learning more interactive, stimulating, and student-centered. Technology can also provide access to authentic language materials, such as news articles, movies, and music, allowing students to experience the target language in its natural context. It can also foster a stress-free and supportive learning environment (Butler-Pascoe & Weinberg, 2003; Tabatabaei, 2012). For example, online learning platforms can offer immediate feedback and self-paced learning opportunities, allowing students to learn at their own rhythm and make mistakes without fear of judgment.

Alwraikat (2012) characterized an e-portfolio as a structured method for collecting students' work related to specific topics or lessons, overseen by teachers. Additionally, Ismail (2005) described an electronic portfolio as a compilation showcasing a student's finest work across classes or subjects, utilizing diverse resources and manageable through cloud-based platforms, potentially publishable on the Internet or CD-ROM.

E-portfolios have emerged as a powerful tool in language learning, fostering student engagement, promoting self-directed learning, and enhancing autonomy. Bakkar and Al-Bassam (2001) highlighted the role of e-portfolios as a repository for student work. These digital portfolios can showcase students' accomplishments and document their progress throughout a language course, be it academic or creative in focus. This allows them to reflect on their learning journey and celebrate their achievements. DiBiase (2002) emphasized the role of e-portfolios in fostering student engagement. These platforms provide opportunities for students to share their work, opinions, and experiences with peers and instructors. By receiving feedback and collaborating with others, students become more invested in the learning process and take greater ownership of their learning goals (DiBiase, 2002).

Studies by Kavaliauskiene (2004) advocated that e-portfolios can contribute to improved student self-esteem. The process of self-reflection

and documenting progress can empower students and foster a sense of accomplishment, leading to increased confidence in their language abilities E-portfolios can facilitate a shift towards learner-centered environments, promoting student autonomy (Nakata, 2011). By providing a platform for students to curate their learning experiences and set personal goals, e-portfolios empower them to take charge of their learning journey (Babaee & Tikoduadua, 2013). The ability to self-assess and identify areas for improvement is crucial for effective learning. Similarly, Babaee and Tikoduadua (2013) suggest that e-portfolios can help students identify their learning gaps. This self-awareness empowers them to become self-directed learners, taking initiative to address their weaknesses and pursue further learning opportunities.

The integration of technology into language learning has become ubiquitous, with researchers like Aghazedeh and Soleimani (2020) acknowledging its critical role in modern language education. E-portfolios represent a powerful example of how technology can be leveraged to enhance student learning outcomes and empower them to become more autonomous and self-directed language learners. One method of integrating technology into the classroom involves the utilization of mobile applications for educational purposes.

Mobile-assisted language learning (MALL) encompasses any language learning activity facilitated by mobile phones. This distinguishes it from computer-assisted language learning (CALL), where computers are the primary learning tool (Kukulska-Hulme & Shield, 2008). MALL leverages the portability and versatility of mobile devices to provide learners with access to diverse learning experiences and contexts. Mobile devices should be considered as effective instruments for language learning (Rosell-Aguilar, 2007; Fallahkhair et al., 2007) and can have a great role in the development of language skills (Chen & Zhang, 2011; Huang et al., 2010) as well as increasing students' attitudes and motivation toward language learning and supports cooperation, collaboration, and shared knowledge construction (Joseph & Athar, 2009). Viberg and Grönlund (2012) found that most of the MALL research focuses on vocabulary learning, listening, speaking skills, and language acquisition. They also found that there is little research on grammar, pronunciation, and writing skills. Mobile phones offer a unique opportunity to provide remote assistance and feedback to students (AbuSa'aleek, 2014). This is particularly helpful when errors arise from insufficient competence. Increased interaction via mobile devices can lead to grammatical errors as students prioritize speed over accuracy. In such instances, teachers or peers can offer feedback on incorrect constructions, promoting language learning. Moreover, corrective feedback is a well-established strategy for enhancing second language learning. Notably, recasts, a specific form of feedback that provides the correct grammatical form while preserving the student's intended meaning, are considered a particularly effective approach (Trofimovich et al., 2011).

Recasts, a form of corrective feedback that provides the correct grammatical form while preserving the original meaning of the student's utterance, are considered less direct and explicit than other methods (Gass & Selinker, 2008). Despite this indirectness, recasts have emerged as a prominent approach in language learning, with numerous studies exploring their impact on second language acquisition and grammar development (Elhami & Roshan, 2016).

Grammar, defined as the system of rules governing the arrangement of words and phrases in a language (Savage, Bitterline, & Price, 2010), holds a significant role in language learning. The importance of grammar instruction is well-established (Amirian & Abbasi, 2014). In light of this, the present study investigates the effectiveness of e-portfolios and MALL-oriented recasts in improving the grammatical knowledge of Iranian EFL students. As a result, this study attempted to investigate the e-portfolio and MALL-oriented recast on Iranian EFL students' grammatical knowledge by posing three research questions:

1 .Does using an e-portfolio have any significant effect on Iranian English language teaching B.A. students' grammatical knowledge?

2 .Does using MALL-oriented recast have any significant effect on Iranian English language teaching B.A. students' grammatical knowledge?

3. Is there any significant difference between the effect of using an e-portfolio and MALL-oriented recast on Iranian English language

teaching B.A. students' grammatical knowledge?

Review of Literature

E-Portfolio

E-portfolios have emerged as a significant technological advancement in higher education (Rhodes, 2011). Their potential impact surpasses that of many familiar technological programs by fostering student engagement in a systematic and accessible manner (Rhodes, 2011). Lorenzo and Ittelson (2005) define an electronic portfolio as a digital collection of works that showcases the achievements and performance of individuals, groups, or organizations. These personalized online compilations document accomplishments across various contexts Chau and Cheng (2010) further emphasize the student-centric nature of e-portfolios, highlighting their foundation on purposefully collected digital elements that represent a student's products, experiences, and achievements throughout the learning process. Therefore, this definition suggests that an electronic portfolio containing student productions offers audiences an overview to grasp the progression of students' learning processes, facilitating students' ability to articulate their comprehension effectively. Accordingly, e-portfolios are needed since comprehending such a connection is not possible without the help of this kind of portfolio in life. This need comes from the requirement of students to evaluate their progress in the learning process (Goldsmith, 2007). In the same way, e-portfolios can improve the learning process and assess students' comprehension. It involves taking responsibility for learning by organizing learning materials for specific student purposes. Using portfolios leads students to a better understanding of their work and gives them the chance to reflect on the results they receive. Therefore, students become responsible for their learning and become more motivated to continue their learning process (Akçıl & Arap, 2009). Using e- portfolio means participating in the learning process and contributing to the improvement of self-assessment (Reese & Levy, 2009). Creating personal e-portfolios makes learners personalize their learning (Schmitz et al., 2010) and saves teachers' and learners' time and energy (Gray, 2008). Goldsmith (2007) stated that employing electronic folders is a good way to store information, provide easy access for future inspections and review materials while reducing the risk of loss and promoting students' independence. Furthermore, e-portfolios can increase learners' awareness of the consequences of the learning process and encourage them to try their learning (Gonzalez, 2009). Through e-portfolios, self-reflection and teachers' feedback are enhanced while learners become aware of their goals, achievements, experiences, and ideas via reflecting on their learning process; thus, departments and institutions can also benefit from the success of learners (Goldsmith, 2007; Reese & Levy, 2009). Learners can become more active in presenting their productions and do their best while using digital portfolios (Rhodes, 2011). Electronic reports can also provide students with individualized feedback on their mistakes in their learning, experiences and achievements, and feedback on the effectiveness of their work (Goldsmith, 2007) which can lead to continuous learning (Akçıl & Arap, 2009) and willingness to overcome problems (Gray, 2008). In short, electronic portfolios can be used effectively and efficiently in teaching, learning, and assessment as long as they are student-centered.

MALL

Mobile Assisted Language Learning (MALL) which is also known as m-learning has been considered an extension of e-learning or a subset of distant learning via using mobile phones (Georgiev et al., 2004). Many studies and research have been done about mobile learning (O'Malley et al., 2003; Traxler, 2005) and all have illustrated that m-learning can have lots of advantages for learners as it can provide students with opportunities for learning in an unfixed setting and time. Crompton (2013) believes that learning across multiple contexts with having social interactions is possible using personal electronic devices such as mobile. It also has the benefit of bringing adaptable learning for students in different changing contexts. Similarly, Rosman (2008) mentions that using mobiles for learning helps learners deliver digitalized content and keep them for future use, and in this way, it enhances learning progress. Mobiles are available at almost any location and time which can make learning connections easy for students (Cakmac, 2019) and provide them with a variety of chances

to take advantage of using spontaneous and opportunistic learning on the move (Kukulska-Hulme & Traxler, 2005).

Recast

There are two ways of giving corrective feedback to students, explicit and implicit. Recasts are regarded as implicit ways of giving feedback since they do not show the error directly and explicitly (Sheen, 2008). Through recast, corrections are done indirectly by the teachers in which all parts of the sentence or erroneous utterance are reformulated. When giving implicit feedback via using recast, teachers or sometimes peers give responses to learners without directly mentioning that an error has been made (Ellis et al., 2006). Effective feedback is crucial for second language learners to gauge their progress and access information about the target language (Gass & Selinker, 2008). Recasts are considered a complex form of corrective feedback, where the teacher rephrases an incorrect or incomplete student utterance while preserving the original meaning (Richards & Schmidt, 2013). This typically involves modifying one or more sentence components, such as the subject, verb, or object. Yang and Lyster (2010) advocated for the use of recasts to enhance students' grammatical knowledge. This emphasis on recasts as a beneficial corrective feedback technique is further supported by Sato and Lyster (2012), who discussed the role of recasts in improving learners' second language accuracy and correctness.

Related Studies

Various scholars and researchers have investigated the effects of e-portfolios and MALL-oriented recasts on English language learning. Nourdad and Banagozar (2022) conducted a study to examine vocabulary learning and retention through being exposed to the e-portfolio as an integration of technology and the results showed that the experimental group outperformed the control group in learning vocabulary and retention process. Shafiee Rad (2021) utilized a mobile application, Edmoda, to investigate the quality of Iranian EFL learners' performance in developing, complementing, and analyzing descriptive writing. The findings indicated that Edmoda had a significant influence on the participants' writing since they became aware of their errors. Akbari and Seyed Erfani (2018) examined the influence of Wiki as an example of MALL and e-portfolios on Iranian EFL intermediate learners' writing. The teachers gave feedback to the participants in the experimental group through Wiki and e-portfolios. The researchers concluded that Wiki was more effective than e-portfolios and both approaches significantly enhanced learners' writing.

Khodashenas and Rakhshi (2017) carried out a study to investigate the improvement of Iranian EFL learners' writing skills through utilizing electronic portfolio assessments. The findings demonstrated the positive impact of e-portfolios on the ability of learners' writing. Karami et al. (2018) considered the effectiveness of e-portfolios on Iranian EFL learners' writing performance. The findings revealed that the e-portfolio group had better performance in comparison with the control group. Barrot (2018) focused on Facebook-based e-portfolio. The researcher aimed to explore whether this kind of e-portfolio improves the Philippines's learners' ability to write. The results showed that it has a positive impact on the learners' writing and self-regulation in which the participants were motivated to write better and concisely. Pourdana and Tavassoli (2022) considered the importance of modes of engagement after utilizing e-portfolios to check the improvement in descriptive and narrative writing. The findings revealed e-portfolios positively improved learners' writing. Nicolaidou (2013) investigated whether a WordPress weblog as an e-portfolio enhances the writing performance of primary pupils. The findings illustrated that most informants detect errors and provide correct formats.

The next objective of the present study was to shed light on the effect of another technological integration which is MALL-oriented recast. A study conducted by Cheng et al. (2010) attempted to investigate the influence of mobile phones and online systems in the process of learning of EFL learners. This study indicated that while students used this application during learning they were more successful. The participants produced accurate and acceptable utterances in consequence which means that their grammatical knowledge got better. Next, Moghari and Marrandi (2017) attempted to investigate the

impact of utilizing MALL on EFL learners' grammar. The results revealed that the experimental group outperformed the control group in the case of improving grammar. Then, Alemi et al. (2012) considered another feature of mobile technology, SMS, and aimed to analyze learners' vocabulary knowledge and learning by utilizing it. The researchers reported that SMS enhanced vocabulary learning among participants. In 2013 learners' perceptions toward utilizing mobile as a learning tool was a topic of a study by Kalati. Iranian EFL learners were satisfied with utilizing mobile devices to promote the process of learning English.

Khubyari and Narafshan (2016) examined the influence of MALL on the reading comprehension of Iranian EFL learners. The findings indicated that learners reacted positively while they used mobile devices. Using mobile devices as a tool of learning affected and promoted participants' reading comprehension levels. Polakova and Klimova (2019) utilized an application called "Kahoot" to study the improvement of vocabulary learning skills of students. The collected data showed the experimental group that learned vocabulary through the Kahoot application had significant progress in learning vocabulary in comparison with the control group. Similarly, Morchid (2020) regarding the influence of MALL, in one of his studies reported that while Moroccan university students used MALL-based instruction had significant progress in writing. Yucedal (2023) carried out a study to measure the effects of MALL on the writing of language Preparatory School students. The results illustrated MALL significantly increases students' writing proficiency and motivation.

However, there are few studies exploring the impact of both e-portfolio and MALL on EFL learners' grammatical improvement. Moreover, researchers have not paid adequate attention to the importance of recast. Thus, the present study aimed to find the effects of using e-portfolios and MALL-oriented recast on Iranian EFL learners' grammatical knowledge.

Methodology

Participants

This study employed a purposive sampling method to select 120 students enrolled in the BA English Language Teaching program at Islamic Azad University, Shiraz. These participants were chosen from among 200 students based on their scores on a test namely the Quick Oxford Placement Test. Those students with scores between 30 and 47 were considered as the intermediate level and were selected for the study. These students were enrolled in a foundational writing course that emphasized grammar as a prerequisite for their future courses. In addition, the age range of the participants was between 19 to 45 with a gender balance (n = 60 male, n = 60 female). Gender differences were not a primary focus of the study. They were divided into three groups. The control group (n = 45) received traditional instruction. Experimental Group 1 (E-Portfolio Group, n = 38) received traditional instruction supplemented with an e-portfolio component. Finally, Experimental Group 2 (MALL-Oriented Recast Group, n = 37) received traditional instruction with a focus on Mobile-assisted language learning (MALL) techniques for error correction (recasting).

Instrumentation

The first instrument used in the study was the Quick Oxford Placement Test (OQPT) to check the homogeneity of the participants. This test included 60 multiple-choice items measuring the grammatical knowledge, vocabulary knowledge, and reading comprehension ability of the students with 30 questions each. The maximum score was 60. According to the scoring scale of the Oxford Placement test, those students who received between 30 to 47 should be considered as intermediate and they were chosen as the participants of the present study. The reliability of the test was reported to be .78.

The second instrument of the study was the pre-test and post-test of grammar. The test included 30 multiple-choice items and the maximum score was 30. The students had 30 minutes to answer the questions. The validated pre-test of grammar (the Paper Based TOEFL Test) was used to show the homogeneity of the students in grammar before the conduction of the study and the post-test of grammar was used to show the effect of using e-portfolio and MALL-oriented recast on the grammar of B.A. students after the treatments. The validated pre-test and post-test of grammar were selected from the grammar section of the Longman Preparation

Course for The TOEFL Test (the Paper Based Test) (Phillips, 2005) .

The other instrument used in the study was the Edmodo website for the aim of applying an e-portfolio in the first experimental group (G1). Edmodo is the name of a website that has some features for users to check, comment, and analyze grammar points. This site has gained over 20 million users all over the world. Edmodo is a basic social networking website that contains several features similar to Facebook. Teachers create assignments, build quizzes, poll audiences, manage small groups, and grade activities.

The fourth instrument employed was Additio which was used in the second experimental group (G2) for focusing on MALL-oriented recast. Additio is an application that is installed on both iOS and Android mobile devices. This application has some options for users to check their sentences according to the grammar points and leave feedback.

These two instruments, Edmoda and Additio, let the learners monitor their grammar learning progress and document the participants' improvement for further analysis. In addition, a textbook called "English Grammar in Use" was the main source of teaching grammar in the university.

Procedure

The study implemented a 15-week intervention program with one session per week. The first session involved administering the pre-test, and the last session involved administering the post-test of grammar. Data collection occurred in three phases:

Participants in Group 1 received an e-portfolio recast intervention. They were provided with a link to the Edmodo website, where they completed grammar quizzes (articles, pronouns, tenses, etc.) related to classroom instruction after each session. The instructor provided training on using the website. Both instructors and the researcher monitored student performance online. It is important to note that the researcher was not the classroom instructor. Group discussions were encouraged, allowing participants to share results, receive peer feedback, and observe individual progress. All performance scores were documented within their e-portfolios.

Group 2 received a MALL-oriented recast intervention using a mobile application called Additio. Students created accounts, participated in group discussions focused on grammar questions, and submitted their work for review in subsequent sessions. Similar to Group 1, the researcher monitored their performance. Conventional grammar instruction techniques were employed to enhance their grammatical knowledge.

After completing 14 intervention sessions, all participants completed a post-test of grammar knowledge. To minimize potential lingering effects of the intervention, the post-test was administered two weeks after the final session.

Results

Data Analysis for the First Research Question

The first aim of the study based on the first research question was to assess the effects of e-portfolios on the grammatical knowledge of Iranian English language teaching B.A. students. To answer the first research question, descriptive statistics, and paired samples t-tests were calculated using SPSS software version 26th. The Results of descriptive statistics are revealed in Table 1.

Table 1.
Results of Descriptive Statistics for the Pre-test and Post-test of E-portfolio Group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test of E-portfolio Group	10.92	40	3.51	.55
	Post-test of E-portfolio Group	18.00	40	3.21	.50

As seen in Table 1, the mean and standard deviation of the scores of the participants of the E-portfolio group in the pre-test of grammar were 10.92 and 3.51 respectively. Moreover, the mean and standard deviation of the scores of the participants of the E-portfolio group in the post-test of grammar were 18.00 and 3.21. To show any significant difference between the mean scores of the students in the pre-test and post-test of grammar, a paired sample t-test was calculated. The results are revealed in Table 2.

Table 2.
Results of Paired Samples t-test for the Pre-test and Post-test of E-portfolio Group

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	Df	Sig. (2-tailed)
Pair 1	Pre-test of E-portfolio Group - Post-test of E-portfolio Group	-7.07	2.81	.44	-7.97	-6.17	-15.90	39	.000

Based on the results of Table 2, the mean difference was 7.07 and the p-value was .00. Since the level of significance was less than 0.05, it can be concluded that e-portfolio significantly improved the grammatical knowledge of Iranian English language teaching B.A. students.

Data Analysis for the Second Research Question

The second aim of the study was to assess the effects of MALL-oriented recast on the grammatical knowledge of Iranian English language teaching B.A. students. To answer the second research question, descriptive statistics, and paired sample t-test were calculated using SPSS software version 26th. The Results of descriptive statistics are revealed in Table 3.

Table 3.
Results of Descriptive Statistics for the Pre-test and Post-test of MALL-oriented Group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test of MALL-oriented Group	12.45	40	3.68	.58
	Post-test of MALL-oriented Group	18.95	40	3.83	.60

As seen in Table 2, the mean and standard deviation of the scores of the participants of the MALL-oriented group in the pre-test of grammar were 12.45 and 3.68, respectively. Moreover, the mean and standard deviation of the scores of the participants of experimental group 2 in the post-test of grammar were 18.95 and 3.83, respectively. To show any significant difference between the mean scores of the students in the pre-test and post-test of grammar, a paired sample t-test was calculated. The results are revealed in Table 4.

Table 4.
Results of Paired Samples t-test for the Pre-test and Post-test of MALL-oriented Group

Paired Samples Test									
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pre-test of MALL-oriented Group - Post-test of MALL-oriented Group	-6.50	4.39	.69	-7.90	-5.09	-9.35	39	.000

Based on the results of Table 4, the mean difference was 6.50 and the p-value was .00. Since the level of significance was less than 0.05, it can be concluded that MALL-oriented recast significantly improved the grammatical knowledge of Iranian English language teaching B.A. students.

Data Analysis for the Third Research Question

The third aim of the study was to assess any significant difference between the effects of e-portfolio and MALL-oriented recast on the grammatical knowledge of Iranian English language teaching B.A. students. To answer the last research question, One-way ANOVA was calculated using SPSS software version 26th. The Results of descriptive statistics are revealed in Table 5.

Table 5.
Results of Descriptive Statistics for the Post-test of the Three Groups

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Control Group	40	12.42	3.95	.62	11.16	13.68	6.00	20.00
E-portfolio Group	40	18.00	3.21	.50	16.97	19.02	12.00	25.00
MALL-oriented Group	40	18.95	3.83	.60	17.72	20.17	12.00	26.00
Total	120	16.45	4.65	.42	15.61	17.30	6.00	26.00

As seen in Table 5, the mean and standard deviation of the scores of the participants of the control group in the post-test of grammar were 12.42 and 3.95, respectively. Moreover, the mean and standard deviation of the scores of the participants of experimental group 1 in the post-test of grammar were 18.00 and 3.21, respectively. Finally, the mean and standard deviation of the scores of the participants of experimental group 2 in the post-test of grammar were 18.95 and 3.83, respectively. To show any significant difference between the mean scores of the students in the post-test of grammar, One-way ANOVA was calculated. The results are revealed in Table 6.

Table 6.
Results of One-way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	994.11	2	497.05	36.63	.000
Within Groups	1587.67	117	13.57		
Total	2581.79	119			

Based on the results of Table 6, the level of significance was .00. Since the level of significance was less than 0.05, it can be concluded that there was a significant difference between the mean scores of the students of the three groups in the post-test of grammar. Table 7 shows the results of the Post Hoc test (Tukey HSD).

Table 7.
The Results of Post Hoc test (Tukey HSD)

I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Control Group	E-portfolio Group	-5.57	.82	.000	-7.53	-3.61
	MALL-oriented Group	-6.52	.82	.000	-8.48	-4.56
E-portfolio Group	Control Group	5.57	.82	.000	3.61	7.53
	MALL-oriented Group	-.95	.82	.483	-2.90	1.00
MALL-oriented Group	Control Group	6.52	.82	.000	4.56	8.48
	E-portfolio Group	.950	.82	.48	-1.00	2.90

As the results of the Post Hoc test showed, there was a significant difference between the mean score of the participants of the three groups. However, there was no significant difference between the mean scores of the participants of the first and second experimental groups (p=.48). Therefore, the results showed that both e-portfolio and MALL-oriented recast had a significant effect on the grammatical knowledge of Iranian English language teaching B.A. students.

Discussion

As mentioned above, investigating the effects of using e-portfolio and MALL-oriented recast on the grammatical knowledge of Iranian English language B.A. students was the main aim of the study and the findings of the study revealed that both e-portfolio and MALL-oriented recast

significantly enhanced the grammatical knowledge of Iranian B.A. students. Furthermore, the results showed a significant difference between the effects of e-portfolio and MALL-oriented recast and traditional methods on the grammar of Iranian B.A. students .

The findings of the study are in contract with the study conducted by Akbari and Seyed Erfani (2018) who examined the influence of Wiki as an example of MALL and portfolio on the writing ability of Iranian intermediate EFL learners and they concluded that Wiki in comparison with the portfolio had a significant effect on the writing ability of Iranian EFL learners. Furthermore, the results of the study are in line with the study conducted by Khodashenas and Rakhshi (2017) who carried out a study to investigate the effect of electronic portfolio assessment on Iranian EFL learners' writing skills and the results showed the significant effect of electronic portfolio assessment on the writing ability of EFL learners .

The results of the study are in congruence with the findings of the study done by Moghari and Marrandi (2017) who attempted to investigate the impact of utilizing MALL on EFL learners' grammar. The findings of the study indicated that MALL had a significant effect on improving the grammar of EFL learners. The results are also in agreement with the findings of Alemi et al. (2012) who worked on the effects of technology on vocabulary learning and came up with a positive impact. Accordingly, Khubyari and Narafshan (2016) examined the influence of MALL on the reading comprehension of Iranian EFL learners, and the research showed a positive influence when students used mobile devices which is in line with the findings of the present research. In addition, Polakova and Klimova (2019) used "Kahoot" to study the improvement of vocabulary learning skills of students and end their studies with a positive impact.

Conclusion

This study was done to assess the effects of using e-portfolio and MALL-oriented recast on the grammatical knowledge of Iranian English language teaching B.A. students. The results of the study showed that e-portfolios significantly expanded the Iranian English language teaching B.A. students' grammatical knowledge. Moreover, MALL-oriented recast had a significant effect on the grammatical knowledge of Iranian English language B.A. students. Finally, there was no significant difference between the effect of using an e-portfolio and a MALL-oriented recast on the grammatical knowledge of Iranian English language teaching B.A. students

The results of the study show that electronic portfolios and MALL-oriented recast are facilitators for students' learning the grammar and the use of applications can positively affect the student's performance in classes. In addition, students can enhance their self-monitoring and their self-regulation in learning grammar while they can have a kind of self-assessment using these apps in grammar classes by producing more reflective performance. The use of these applications in grammar classes helps teachers have more connection with their students while providing them with editing, quick online feedback, correct answers, and facilitating their learning. Moreover, using e- portfolio can help students feel more responsible towards their learning and help them feel ownership over their portfolios. Students can see their progress during the term and see their records which assist them become motivated in learning the grammar. Using such kind of apps can lead to students' autonomy as they create their profiles and accounts and work in class-like situations. Furthermore, using e-portfolios and MALL-oriented recast creates a learner-centered environment in which students receive immediate feedback and develop a more interactive situation for learning grammar. As a result, a kind of Internet-based language learning is increased. In addition, the use of mobile phones in classes can create an interesting environment for students in which they become more creative and search for challenging learning situations. Mobile learning also gives students the chance to increase their problem-solving skills and teamwork while receiving instant feedback in grammar classes .

The present study has some implications for teachers as they have always been searching for new creative ways of teaching grammar to students. Teachers can take the benefits of using Edmodo and Additio apps in their grammar classes to make learning more interesting for their students. The study also has some advantages for students because they are always seeking quick ways of learning English and mobile learning

using online-based applications can assist them in this regard. Furthermore, curriculum planners can be considered beneficiary groups in the present study since they are in charge of planning and designing proper curricula for English classes and should be updated about the role of technology in language learning. In addition, material designers should pay more attention to the use of mobile-based applications in the process of foreign language teaching and learning.

There are also some suggestions for interested researchers. Future studies can focus on the role of e-portfolio and MALL on other skills such as listening, speaking, reading, and writing. Accordingly, other interested researchers can attempt to find the role of Edmodo and Additio on students' subskills such as their vocabulary knowledge. Further studies can also be done taking high school students or English institute learners as the participants of their studies.

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