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Exploring the Impact of Mobile-Flipped Classrooms on Iranian EFL Learners' Writing Proficiency

Nouroddin Yousofi[1]*, Saba Bashiri[2]

1*Assistant Professor of Applied Linguistics, Department of English Language and Literature, Faculty of Humanities, Razi University, Kermanshah, Iran.
nyousofi@yahoo.com
2PhD Candidate, Department of English Language and Literature, Faculty of Humanities, Razi University, Kermanshah, Iran.
bashiri.s1368@yahoo.com

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ABSTRACT

This study gives an account of a mixed-method exploration of the impacts of a mobile-based flipped classroom writing proficiency of Iranian EFL learners. Two intact classes (N = 30) of EFL learners were randomly divided into experimental and control groups. Data was gathered via pre -and post-test scores to investigate any differences within and between the groups. As well, individual semi-structured interviews were held of WhatsApp to tap on the experimental group's perspectives. To measure groups' differences in their writing proficiency, independent and paired samples t-tests were used, along with open thematic coding to analyze the interview data regarding the experimental group's perceptions on the mobile-flipped writing course. Quantitative findings indicated that the post-test mean score of the experimental group was notably more than that of the control group at p = 0.05. Furthermore, the mobile-based flipped learning provided the experimental group with some features that contributed to the course effectiveness, including fostering self-confidence, preparation, and pre-class practice, as well as autonomous and independent learning. On the other hand, some factors related to the pre-class sessions made some obstacles for the experimental group, including being cost- and time-consuming. The study results may have valuable implications for those instructors and language institutes who intend to conduct effective flipped EFL courses.

Keywords: Mobile Learning, Flipped Learning, Writing Proficiency, EFL Learners

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1. Introduction

Stakeholders in different educational fields are in quest of cutting-edge trends to apply for gaining the utmost success they desire. English Language Teaching (EFL), is one of the educational fields that needs to be up-to-date as learners' and teachers' roles are changing in modern language teaching. In the early 60s, computer crept into L2 learning and teaching practices (Savchenkova, 2003) which was then known as computer-assisted language learning (CALL). Tafazoli et al. (2018) defines CALL as any kind of technology utilization in language education. Since then, novel educational technologies have been introduced to improve different language components and skills (Li et al., 2021) which encompass various applications and approaches to learning and teaching foreign languages (Shokrpour et al., 2019; Yu et al., 2022). Portable handheld technologies, such smartphones, led off the introduction of a new trend in language instruction called mobile-assisted language learning (MALL) the most important feature of which is making ubiquitous learning possible (Ebrahimi, 2022; Loewen et al., 2019). This ubiquity and emancipation from time and space limitations was conducive to the introduction of new pedagogical practice, which ultimately resulted in enhanced L2 learning (Loewen et al., 2019). MALL contributes to better L2 gain and improvement (Chen et al., 2019; Loewen et al., 2019), increased interest and satisfaction due to cooperation and improved L2 word use (Ko, 2019), and more personalized out-of-class learning (Lai & Zheng, 2018).

Education and instructional methodologies are revolutionized as a consequence of information and communication technologies (ICT) which complemented/optimized traditional instructional methods (Wang et al., 2021). One of these changes in educational settings is utilizing blended learning, which is defined as merging online and face-to-face learning (Sheerah, 2022) and can take many forms. As a version of blended learning, flipped learning (FL) uses various teaching and learning strategies (Fisher et al., 2020) the most prominent feature of which is out of class learning visualized primarily via digital content (Bergmann & Sams, 2016). FL is compatible with the principles of heutagogy and andragogy, which refer to self-determined and self-directed learning, respectively (Blaschke, 2012). Both concepts focus on the necessity of fostering life-long learning in learners in order to adopt and apply their skills and capabilities in different ever-changing situations (Kuit & Fell, 2010) which is of critical importance for coping with the information revolution (Collins & Halverson, 2018). In FL, the order of lectures and students' homework is reversed (Chen Hsieh, et al., 2017; Karabulut-Ilgu, et al., 2018) which leads to more students' preparation for classroom activities (Leis et al., 2015) and more in-class time

to collaboratively reflect on pre-class assignments (Chen Hsieh et al., 2017) in assistance with peers and the instructor (Zou et al., 2020).

Previous research have stated various educational benefits of FL such as interactive learning along with peers in a dynamic class environment (Hsieh et al., 2017; Khabir et al., 2022), more independent learning and learners' pleasure (Cho & Lee, 2016; Dehham et al., 2022), better educational achievement and performance (Lee & Wallace, 2018; Pyo, 2017; Shafiee Rad et al., 2022; Wu et al., 2019), more engagement and motivation (Challob, 2021), and learners' positive perceptions (Lee, 2021; Nugroho & Fitriati, 2021; Teng, 2017; Yang, 2017). Less positive findings have also been reported by several investigations (Garcia Medina, 2017; Yang, 2017). In the same vein, mobile-based flipped learning has been the main focus of various studies to take advantage of the affordances of both mobile technologies and FL at the same time. Using a mobile messaging application, i.e., LINE, Chen Hsieh et al. (2017) instructed English idioms to 48 students via text and audio interactions. Utilizing pre- and post-tests, an FL questionnaire, and a technology acceptance scale to explore the issue, the study revealed that the FL class proved to be highly influential in improving the experimental group's knowledge of idioms and their positive attitudes towards the class. Telegram social media was used as another mobile messaging platform by Amiryousefi (2019) to investigate 67 EFL learners' listening and speaking achievements in an FL class. Following previous results, FL was found to be beneficial in furthering the experimental groups' listening and speaking abilities. More recently, Jalili et al. (2020) targeted flipped EFL vocabulary instruction via Telegram. The 26 participants were randomly divided into control and experimental groups. To the researchers' surprise, the control group outperformed its counterpart and consequently, the experimental group was not satisfied with this new learning experience.

To the researchers' knowledge, so far too little attention has been paid to investigating the impacts of mobile-based flipped learning on EFL learners' writing proficiency, except for one recent study. Arifani et al. (2020)'s main objective was to compare individual and collaborative writing practices in WhatsApp within an FL framework to find out which one will be conducive to using more cohesion in EFL writing. In most L2 classrooms, writing can contribute to other skills needed by students (Polio, 2017). Writing involves taping on both long-term memory capacities and using pertinent linguistic items (Li & Roshan, 2019). In L2 writing research, multiple aspects have been the focus of investigation, for instance, structure and punctuation (Alharthi, 2021; Fitria, 2021), and consistency and cohesiveness, lexical range, and grammatical range and accuracy (Arifani et al., 2020; Lee, 2020; Link et al., 2020). This study focuses on writing specific genres with the aim of improving the participants' writing accuracy (using an accurate lexicon), appropriateness (using appropriate lexical and functional items based on the context), and textual organization (how to organize the

presented information in the text) in an Iranian context. This piece of research tries to answer the following questions:

1. Is mobile-based flipped learning effective for developing EFL writing abilities?
2. If so, what factors may lead to and/or hinder the effectiveness of such instruction?

2. Literature Review

2.1. Flipped Learning

The advent of FL goes back to 2006 in the USA when two chemistry teachers, Bergmann and Sams, found that some of their students could not attend their classes, so they decided to record the lessons via screen capture Software and then posted them online to be available for students (Bergmann & Sams, 2012). In FL, the lesson content is shared with students via multimedia and/or written content (Kirmizi & Kömeç, 2019) which gives the learners freedom to decide when, where, and how to view the material, hence fostering a learner-centered learning context (Hung, 2017). In this way, basic knowledge content is learned before class and then applied and analyzed in class (Zou & Xie, 2018).

In a sequential mixed-methods study, Yuliani et al. (2018) investigated the writing competence of Indonesian students in a project-based flipped learning course. Through utilizing a readiness questionnaire, a writing test, a scoring rubric, and an interview guide, the authors tried to investigate the participants' readiness to implement e-learning, compare conventional and project-based FL groups in terms of writing competence, and tap on the FL group's attitudes towards the learning experience, respectively. Survey analysis revealed that the experimental group was ready to and in favor of implementing e-learning. Statistical results of the writing test showed that the FL class outperformed the control group, which resulted in their positive attitudes towards the project-based FL as revealed in the interview data.

Data sources included the number of students' online activities, Wikipedia notes, differences among the notes, the instructor's notes taken during in-class learning processes, the participants' percentage of participation in the formation of the Wikipedia notes, and the final submitted Wikipedia notes. The findings showed the effectiveness of FL for learning with Wikipedia as the treatment group members created various categories of Wikipedia notes. Moreover, more class collaboration and mutual interaction opportunities were present in the FL group, which provided more time and space for active learning.

A Moodle course management system was used as the platform of a study by Tsai (2021) which investigated the impact of FL on Taiwanese EFL learners' learning autonomy, enrolled in a content-based linguistics course. The experimental group included 64 members and the control group included 60 students who received FL-based and non-FL-based instruction, respectively. Perceived learner autonomy of the participants was not different before the instruction, as shown by comparing pre-and post-questionnaire, but a significant difference was evident after the instruction. Specifically, the subscales of learner autonomous strategy, learner behavior, and learner confidence were more positively responded to by the FL class. The analysis of e-journals revealed that the FL class became more autonomous in using strategies and behavior, involvement with the materials, using social sources, and self-directed learning. The experimental group stated that FL was contributing to changes in their learning approach and thinking mode. Finally, a positive relationship was seen between the learners' autonomy and the time spent on online learning activities.

A mixed-method study by Ghufron and Nurdianingsih (2021) involved exploring the efficiencies and deficiencies of flipping an EFL writing class with CALL in Indonesia. The differences within classes were also explored to find out the impact of flipped CALL classes. The results revealed that FL implementation had positive effects on EFL writing, fostered learner autonomy, facilitated teaching and learning of the writing process, provided richer face-to-face meetings, and enhanced active learning and collaboration. On the other hand, both teachers and students complained about time constraints on materials preparation and technological barriers.

The Attention, Relevance, Confidence, and Satisfaction (ARCS) model was used for flipping an Iranian EFL writing class by Mirzaei et al. (2022) to examine the combined effect of both models on 59 learners' performance and motivation. The experimental group (N = 31) was instructed in a flipped writing course integrated with the ARCS model, while the control group (N = 28) was instructed integrating the same model in a face-to-face writing course. The writing outperformance of the experimental group revealed that integrating the two methods led to more learner motivation, engagement, and autonomy. Besides, the learners experienced a more learners-centered, relaxing, and interactive classroom atmosphere.

2.2. Mobile Learning

Mobile technology expands classroom learning to beyond-class contexts by giving the students independence from time and space limitations to decide on their L2 learning methods (Kukulska-Hulme & Viberg, 2018; Reinders & Benson, 2017). Using mobile platforms for language learning and

instruction purposes is referred to as mobile-assisted language learning (MALL) (Burston, 2015; Shadiev et al., 2017).

Zhang and Pérez-Paredes (2019)'s mixed-methods study taped on postgraduate EFL learners' perspectives on utilizing mobile English learning resources (MELR) in China. Questionnaires and interviews revealed that they mostly used these resources for passing exams. They stated that MELR helped them improve their vocabulary but did not help in grammar development. Mobile vocabulary applications were the most widely used applications by these students. They were skeptical about finding the most suitable resources based on their educational needs and confessed to needing assistance and a consultant from an expert.

A game-based mobile application called Duolingo was utilized in a concurrent mixed-methods case study by Loewen et al. (2019). These research participants were from various L1 backgrounds and wanted to learn Turkish via this program. A Turkish language test and participant journals were used to trace their improvement in Turkish which showed that more interaction with the program and more time spent on using it was directly correlated with their achievements in the test. Although the research participants had different motivational orientations and used the program at their own pace, they all held positive attitudes towards the program and perceived it to be a user-friendly gamified app.

Sixty Chinese EFL learners were the participants of a study by Jiang and Zhang (2020). A mobile-assisted collaborative learning environment, i.e., WeChat, was used as the platform to conduct explicit socializing activities to help the participants develop their argumentative essay writing skills. The experimental group, who received explicit socializing tasks in the pre-instruction activities, outperformed its counterpart in terms of learning performance, interacting in the learning stage, having lower cognitive burden, and manifesting a higher level of public presence.

3. Method

3.1. Participants

The participants of this mixed-method, since it included both qualitative and quantitative data, study included 30 EFL students from two intact classes at a private English school in Iran, recruited based on a convenience sampling method. These students were female upper-intermediate EFL learners who were randomly divided into two classes of 15, i.e., one experimental and one control group class. In comparative and experimental studies, including 15 participants as the sample size in each group is agreed on by several scholars (Dörnyei, 2007). All the patricians shared a common first language, i.e., Kurdish, whose age ranged from 14 to

17. The experimental group was called the mobile-flipped class (MFC) and the control group was called the traditional class (TC) in terms of the kind of instruction they received. They were enrolled in a writing course before proceeding to the advanced level and taught by the same teacher (one of the researchers). The students' proficiency level was assessed via the online proficiency diagnostic test called DIALANG and the institution standards. Ethical considerations included assuring the learners' voluntary participation and using pseudonyms to refer to them in the study.

3.2. Materials and Instruments

3.2.1. DIALANG Test

The DIALNG test was used to assess the participants' proficiency level in writing. It was also used to collect pre-and post-test scores. The test-takers in DIALNG can diagnose their listening, writing, reading, structure, and vocabulary proficiency in 14 European languages. The basis for selecting this study's participants was being at B2 level, i.e., upper-intermediate.

3.2.2. WhatsApp Messenger

As the flipped classes were mobile-based, we selected WhatsApp messenger as the platform to send and receive flipped instructions in the experimental group. This freeware messaging application, developed by Facebook, gives its users such features as receiving and sending text, voice, and multimedia content, as well as making group or pair calls all of which need network access. The instructor created a group on WhatsApp, which was the medium to share ideas about the topic and get prepared for the face-to-face class.

3.2.3. Cambridge English Write and Improve Online Service

Both groups were required to submit writing tasks selected from *Cambridge English Write and Improve,* which is a free online platform to practice writing in English and receive feedback on it. This service provides learners from different proficiency levels with various writing tasks. Ten tasks from *B2 first* tasks were selected based on the students' proficiency level, each of which was covered in one session.

3.2.4. Semi-structured interviews

Semi-structured interviews with eight students in the experimental group were conducted via WhatsApp voice messaging individually. Four guiding questions were asked from the students individually and in case of any ambiguities, more clarification was required (Appendix 1). The voices corresponding to each person were saved and transcribed verbatim for analysis.

3.3. Procedure

Both classes were homogenous as regards their gender, first language, proficiency level (B2), having access to the internet and smartphones, having a WhatsApp account, having no prior experience of flipped learning as ensured by the instructor of both classes, and all aged between 15-25. Before taking part in the proficiency and pre-tests, debriefing sessions were held for both groups separately to become familiar with the course details, including duration, topic selection, submitting the tasks, and task assessment (session one). Session 2 was devoted to administering the DIALNG test individually to assess all the participants' proficiency levels. The scores obtained from this proficiency test were used as pre-test scores. Both groups were asked to do the same essay-writing tasks in class for five weeks (two 60-minute sessions per week, sessions 3-12). One day before the face-to-face class, the instructor and the students in the MFC were required to be online at the determined time. The instructor sent a picture as a prompt for students to guess the topic followed by an audio via the WhatsApp group. The audios were sent to explain what was required to do before class to be prepared for class activities. All group members were required to share and brainstorm ideas on the topic, either in voice or text. For example, if the topic was *the fashion industry,* the students were asked to get prepared to write about the effects of fashion on peoples' lives, peoples' appearance, prices, and any other ideas related to the topic whether pointed out in the group or not. Then the link to an English writing tutorial video was shared to be viewed by them. Each clip was about an aspect of the writing process, for example brainstorming, writing genres, topic sentences, etc. The first half of each session was devoted to taking part in class discussions interactively to share more ideas and brainstorm about the determined topic. After that, they were required to write a 150-200-word essay and submit it at the end of class.

The same tasks were used for the TC, who also met twice a week for five consecutive weeks. The learners in this class were not given any prompts on what the topic of each session will be. In the first half of each session, the teacher wrote the topic on the whiteboard and asked them to write a 150-200-word essay about it in the last 30 minutes. The essays of both classes were collected and commented on by the instructor, the results of which were sent via the WhatsApp group (as a picture file) for the MFC and at the end of the next session for the TC. The rubrics for correcting both groups' assignments were writing accuracy (using an accurate lexicon), appropriateness (using appropriate lexical and functional items based on the context), and textual organization (how to organize the presented information in the text). Inter-rater reliability was also assured via submitting the essays to another teacher instructing at the same institute to be assessed based on the given criteria.

The order of the topics and the genre they belonged to was as the following for both classes:

1. The fashion industry (expository)
2. The design of buildings (expository)
3. The environment (expository)
4. Excitement and adventure (expository)
5. Historic buildings (expository and persuasive)
6. How can you judge whether a film is good or bad? (persuasive)
7. School holidays (expository)
8. Living in cities (descriptive)
9. Is the internet worse than TV? (persuasive)
10. University learning (descriptive and expository)

Finally, all the students took the DIALNG online test as the post-test one by one (13th session). The eight volunteered interviewees from the MFC were interviewed individually via WhatsApp voice messaging to express their perceptions and attitudes towards this writing course. All the interviews were in Persian each of which lasted about 10-15 minutes.

3.4. Data Analysis

The statistical package for social sciences (SPSS) version 26 was used to find probable differences within and between the groups, including paired and independent samples t-tests, respectively. For analyzing the qualitative phase, the transcribed interviews were translated into English and then analyzed following an open-thematic coding method based on which commonalities and patterns render overarching labels called themes (Seidman, 2006).

4. Results and Discussion

4.1. Quantitative Results

4.1.1. Within group Comparison

The results of t-test for the MFC are shown in Table 1.

Table 1
Paired Samples T-test for the MFC

	SEM	SD		T	df	*Sig*
Pre Post	-4.133	2.56	.661	-6.254	14	.001

Table 2 indicates the result of mean score comparisons of the MFC. It was found that the MFC reached a mean score of 24.87 in the pre-test and the mean score of the post-test was 29. These scores' difference indicates the improvement of the MFC in their post-test.

Table 2
Pre and Post-test Mean Score Comparisons of the MFC

	M	N	SD	SEM
pre-test. F	24.87	15	2.386	.616
post-test. F	29.00	15	1.069	.276

Table 3 indicates that sig < 0.05, so there is a significant difference between TC's pre- and post-test scores just like its counterpart. But Table 4 reveals that this difference is not so big. Although the pre-test mean score was 22.47 that of the post-test was 23.87.

Table 3
Paired Samples T-test for the TC

	M	SD	SEM	T	df	*Sig.*
Pre Post	1.400	1.76 5	.456	-3.073	14	.008

Table 4
Pre and Post-Test Mean Score Comparisons of the TC

	M	N	SD	SEM
per-test T	22.47	15	1.807	.467
post-test T	23.87	15	2.167	.559

4.1.2. Between Groups' Comparison

Table 5 shows the independent paired samples t-test for differences between the two groups' pre-tests.

Table 5
Independent Samples T-Test for the Pre-Tests

	M	S	SEM	T	df	*Sig.*
Pre F Pre T	-2.400	2.558	.660	3.634	14	.003

Table 6
Pre-test Mean Score Comparisons

	M	N	SD	SEM
per-test F	24.87	15	2.386	.616
per-test T	22.47	15	1.807	.467

Table 7
Independent Samples T-test for the Post-tests

	M	SD	SEM	T	f	*Sig.*
Post F Post T	5.133	2.200	.568	9.039	4	0.002

Table 8
Post-test Mean Score Comparisons

		M	N	SD	SEM
	post-test F	29.00	15	1.069	.276
	post-test T	23.87	15	2.167	.559

4.2. Qualitative Results

Open-thematic coding was employed to analyze the individual interviews. The guiding interview questions asked about the perceived factors that either contributed to or hindered the effectiveness of the mobile-based FL. The two broad themes identified from the students' responses were "positive/ contributing factors" and "negative/hindering factors". Table 9 shows the sub-categories of each theme followed by illustrating excerpts from the transcribed interviews anonymously. The students will be referred to as S1, S2, S3, S4, S5, S6, S7, and S8.

S5 and S8 believed that this learning experience was conducive to being more engaged in the learning process, hence being a more active learner.

This was the first time that I perceived myself as an active student… you know… we were forced to be active. We had no other choice except to be engaged in what we were required to.

The pre-class discussions and ideas shared by our teacher and the class members propelled me to take part in the discussions and thus made me more active in learning.

Table 9
Themes and sub-themes extracted from the qualitative data

Themes	Sub-themes
Positive/contributing factors	Fostering learner engagement and activity Having more time to practice and prepare Getting more information about the topic before class Having more time to think and search about the topic Including links to tutorial videos fostered autonomous and independent learning Being more conscious about the process of writing Feeling more confident when writing during class Not feeling frustrated to share ideas in class
Negative/hindering factors	Preferring teacher-created tutorial videos Viewing the linked videos was problematic Not being cost-effective Taking away students' free-time

S2 was satisfied with the pre-class instructions, as they made room for more practice and preparation.

I cannot do any activity without sufficient practice. The pre-class online sessions relieved me as they made grounds for practicing more…. I need the practice to be prepared for doing any task.

Being informed of the topic beforehand was another positive aspect referred to by S4, who also believed that it allowed more contemplating and browsing.

In our previous essay classes, we were asked to write an essay about a topic on the spot within a specific time frame. But during this course, the topic was introduced to us beforehand via different modalities such as pictures, text, audio, etc. which allowed us to contemplate deeper and search about it if needed.

S8 was interested in the tutorial videos, which made her more responsible for her learning. S6's comment is also pertinent to the same point.

The provided links at the end of each online discussion session brought about a feeling of self-responsibility … I always thought that my instructor is responsible for my learning, but I found that I am the most responsible

person for my learning, because I am provided with what I need and just need to work harder. (S8)

I felt independent from the learning context as I could view instructional materials out of class wherever I wished. I realized that learning is not confined to the classroom. (S6)

Each tutorial video was about a specific step to take when writing about a topic. The same point was conducive to raising learners' consciousness about the writing process. S1 stated that:

I did know that writing involves considering so many points…, I just wrote about any topic without taking those steps into consideration…. For instance, I did not brainstorm about the topic and I did not know how to organize a paragraph.

A sense of confidence was felt by the MFC as they were prepared for class. This helped students overcome negative feelings. S4 and S6 asserted:

I have never experienced such self-confidence when attending a class… I was sure that I can submit an acceptable writing because I was not going to write in vain, …, I was totally aware of what I was required to do. (S4)

The online sessions encouraged me to suppress what hindered me from participating… At first, I only typed short texts in the group, but I gradually found that I could express myself better in voice... Thus, I did not feel frustrated to share ideas during face-to-face classes. (S6)

Among the four negative factors that were somehow hindering the course's effectiveness, three of them were related to the linked tutorial videos. These tutorials were all created by native speakers to help English learners. Some students preferred viewing videos created by the teacher, or at least a non-native speaker. S7's opinion is revealing in this regard:

My listening comprehension improved as a result of listening to the tutorials, as I listened to it several times for better comprehension… but if the tutorials were made by the teacher herself, I could grasp the point more quickly and direct my attention on the task at hand, i.e., writing, not on listening comprehension.

For some learners, the main problem had to do with accessing the linked materials. For instance, S1 said:

I was very eager to see the videos, but I faced some problems and I could view only three of them… I had connectivity problems and I needed VPN to access them… I think it would be better to send the downloaded videos not their links.

S3 complained about the costs she had to pay for a powerful network connection to view or download the videos.

My network quality was not so powerful, and it took me a lot of time to view the videos… or I suddenly faced a disconnected network… overall I paid more than before for better connection quality and strength.

S3 was also dissatisfied with the time she had to devote to before-class online discussions.

I believe that it was too time-consuming to have a pre-class session… I am not accustomed to such pre-lesson instructions… I prefer being informed about the topic and discussing it in class; furthermore, I think that face-to-face teacher instructions could be more effective than the linked tutorial videos.

4.3. Discussion

The findings of this project indicated that mobile-based flipped learning was more successful than conventional learning in improving EFL learners' writing proficiency in the studied context. This contradiction may emanate from the fact that the students in latter studies were not still familiar with the method and needed time to adopt/adapt either the method or the platform used for flipping the class (Alhamami & Khan 2019; Ghufron & Nurdianingsih, 2021). The key to better experimental group achievement is due to the pre-class sessions (Fathi & Rahimi, 2020; Kim, 2018). The online sources such as tutorial videos were of great assistance (McLaughlin & Rhoney, 2015) to the flipped class. Pre- and in-class peer and teacher interactions were also conducive to the learners' better performance (Blau & Shamir-Inbal, 2017; Engin, 2014). Furthermore, as class time is limited and does not allow in-depth preparation and practice (Lin et al., 2022), flipping the classroom can alleviate this problem by involving pre-class activities, thus freeing class time for more active and engaged learning (Bergmann & Sams, 2015; Kim et al., 2014; Sung, 2015) and achieving better learning outcomes (Evseeva & Solozhenko, 2015; Lee & Wallace, 2018).

The qualitative results showed MFC's positive attitudes toward the flipped course (Webb & Doman, 2016) as they were more active and engaged in the learning process. FL is highly reputed for engaging students in active learning (Hung, 2017; Sung, 2015). Using audio-visual materials in flipped classrooms may lead students to take notes (Arifani et al. 2020) and foster their cognitive strategy use (Fooladvand, 2017). One of the advantages of FL was keeping away students from frustration and stress as a result of doing flexible self-paced pre-class activities (Faulkner & Green, 2015; Leis et al., 2015). Gaining autonomy and being independent of the teacher was another pedagogical benefit of FL, which is absent in lecture-based teacher-

centered conventional classrooms (Lee & Wallace, 2018) and increases learners' responsibility for their learning (Hao, 2016).

In this study, the participants had some problems with viewing and downloading the videos and understanding the content of the videos. According to O'Flaherty and Phillips (2015), flipped classrooms should be implemented properly which involves taking several points into consideration, including using pre-recorded videos and being aware of the students' comprehension of the material. Another problem was the inaccessibility of videos for some students, which is concomitant with implementing technology to deliver instructional content (Sohrabi & Iraj, 2016). The problem of participants with a partial understanding of the videos' content can be somehow solved by adding captions/subtitles to the videos (Hodges, 2018). The information provided to the learners before class was easily accessible via using their smartphones anytime anywhere (Yıldırım et al., 2016) which helped them learn at a self-paced speed (Pengnate, 2018). Using WhatsApp as the platform to share pre-class activities in blended learning has been previously proved to be influential in better academic achievement (Annamalai, 2019) and increased motivation and enthusiasm for learning (Plana et al., 2013). Using technologies, such as multimedia content, along with interactive activities are of prime importance when implementing FL (Bishop & Verleger, 2013), such that the technology becomes the medium through which the teacher plays the role of a facilitator and the students both participate and evaluate what is being shared (Fathi & Rahimi, 2020). The same fact paves the way for more interaction with the material, the peers, and the teacher (Mehring, 2014), thus gaining more readiness to take part in class activities (Mok, 2014). This is an indication of the argument that the learning context and the instructional method have a direct impact on students' writing ability (Barrot, 2018). Although, it should not be forgotten that students' preparation is a contributing factor to FL success (Burke & Fedorek, 2017).

6. Conclusion and Implication(s)

This research was conducted to find out whether upper-intermediate EFL learners taught in a mobile-based flipped classroom can be more successful in English writing in terms of writing accuracy, appropriateness, and textual organization. The results demonstrated that the MFC group performed better than the TC group in the post-test and perceived mobile-based flipped learning as powerful assistance for the development of their writing abilities. The results recommend EFL teachers to integrate mobile and flipped learning in their classes to achieve higher instructional efficiency and more learner satisfaction. Another pedagogical implication might be that Iranian EFL learners are still on the verge of adopting flipped instruction and this calls for more preparation stages to be launched by language schools and

institutes. This means that, before full incorporation of the method, several interim flipped sessions be held as introductory sessions to make the grounds for its embracement by both students and teachers. Furthermore, it seems that implementing technology in FL classes, apart from its undeniable affordance, might pose some challenges as well. For instance, both teachers and learners need to be technologically literate in order to be fully endowed with the affordances and overcome the challenge. As was the case in this study, it will be more effective if teachers use self-developed tutorial videos for less proficient learners and instead of sharing links, they share the video file in order to be easily accessible to the students. Further research to investigate the contributing effects of gender and proficiency level on EFL learners' acceptance of mobile-based flipped learning would be worth conducting. It would also be interesting to find correlational relationships between flipping classrooms and the students' self-efficacy and anxiety via using surveys.

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Appendix 1: Interview guiding questions

1. What aspects of this learning experience did you enjoy?

2. Did you find this method effective? Why?

3. Did you face any challenges during this course? If yes elaborate on them.

4. What are your suggestions for taking more advantage from and alleviating the shortcomings of this learning method?

C□= Bad reason. Poverty, wealth and family circumstances do not make a person more or less intelligent.
D□= Regardless of race, children from these kinds of backgrounds are less intelligent than children from wealthy backgrounds.

34. Suppose a militant African-American student teacher angrily objected, "What do you expect! The rich kids took a course in European history, but the poor kids didn't. Sure, they're going to know more about Europe." If true, would this student teacher's reason be a good reason or a bad reason, and why?

A□= Bad reason. She is only a student teacher and probably does not have the research or teaching experience to support her claims.
B□= Good reason. Knowledge of facts does not measure intelligence.
C□= Good reason. The differences in what they were taught in the ninth grade would tend to give Group A an advantage over Group B on that geography exam.
D□= Bad reason. She's obviously responding defensively because she is Black and feels insulted by the conclusions the speech writer drew.

Appendix B: Teacher Autonomy Scale (TAS)

Instructions: Please fill in the blank or mark your choice as appropriate.

Gender:……. Years of teaching experience:…….. Age:……. Context:……..

	Definitely True	More or Less True	More or Less False	Definitely False
1. I am free to be creative in my teaching approach.				
2. The selection of student-learning activities in my class is under my control.				
3. Standards of behavior in my classroom are set primarily by myself.				
4. My job does not allow for much discretion on my part.				
5. In my teaching, I use my own guidelines and procedures.				
6. I have little say over the content and skills that are selected for teaching.				
7. The scheduling of use of time in my classroom is under my control.				
8. My teaching focuses on those goals and objectives I select myself.				
9. I seldom use alternative procedures in my teaching.				
10. I follow my own guidelines on instruction.				
11. I have only limited latitude in how major problems are resolved.				