TEACHER EDUCATION & DEVELOPMENT | RESEARCH ARTICLE

Exploring learners’ grammatical development in mobile assisted language learning

Negin Ghorbani1 and Saman Ebadi1*

Abstract: This study reports the results of a mixed methods approach to investigate the impact of instructor feedback in mobile-assisted language learning (MALL) on the grammatical development of English as a foreign language (EFL) learners. The participants of this quasi-experimental study included 40 female EFL learners randomly selected from the English learning chat groups on Telegram, an online instant messaging application. Dialang, a free web-based language proficiency test, was used to assess the learners’ grammatical knowledge as pre-test on the basis of which the participants in the experimental group were categorized into 15 chat groups, each including the instructor and two participants of the same level of proficiency in English grammar. A paired samples t-test was utilized to analyze the quantitative data. The results indicated that using chats in Telegram led to a significant development in learners’ grammatical accuracy in the experimental groups. Semi-structured interviews were conducted to explore the learners’ attitudes towards their experience in MALL immersion program. The thematic analysis used to analyze the qualitative data revealed a number of themes which addressed the learners’ positive perceptions towards using MALL applications to develop their grammatical structures in online chats.

Subjects: Language & Linguistics; Language Teaching & Learning; Literature

ABOUT THE AUTHORS

Saman Ebadi is an associate professor in Applied Linguistics at Razi University, Iran. His research focuses on CALL, dynamic assessment, qualitative research, and sociocultural theory. He has published extensively in both international journals (e.g. Computer Assisted Language Learning, Journal of Psycholinguistic Research, Cogent Education, etc.) and local journals. He has also presented in both international conferences (e.g. XVIII International CALL Research Conference, University of California, Berkeley, USA, SouthWest Association for Language Learning and Technology (SWALT) conference, Portland, Oregon, USA and CALICO 2011, University of Victoria Victoria, BC, Canada) and national conferences.

Negin Ghorbani is an MA in Applied Linguistics at Razi University, Kermanshah, Iran. Her areas of interest include teaching English language skills. She is the author of some articles in his areas of interest and has presented both in and outside the country.

PUBLIC INTEREST STATEMENT

There has been a growing interest in using smartphones as a form of mobile-assisted language learning (MALL) among English as a foreign language learners (EFL) in Iran. This study is intended to investigate the effects of using a mobile app named Telegram, having millions of users in Iran, on the development of learners’ grammar development as the result of instructor feedback in an Iranian university. It also explored the participants’ attitudes towards using MALL applications, specifically Telegram, as supplementary teaching materials in improving the participants’ proficiency in learning the English grammar. The results indicated that using chats in Telegram led to a significant development in learners’ grammatical accuracy in the experimental groups. The qualitative findings uncovered a number of themes which addressed the learners’ positive perceptions towards using MALL applications to develop their grammatical structures in online chats.
1. Introduction
Grammatical accuracy is an important aspect of language learning since it can create confidence in learners for making communication through the foreign or second language (Nickel, 2002). The importance of grammar learning and improvement in promoting the language learning has already been investigated in various studies. Making grammatical mistakes is more common for Iranian English learners due to different sentence structures in Persian and English (subject-object-verb in Persian vs. subject-verb-object in English). There is consensus among the scholars that feedback as one of the most effective practices in educational context plays a critical role in students’ performance, which is inseparable from the process of learning by providing students with a direction and relevant information (Dawson et al., 2018). EFL instructors typically prefer written feedback to be provided to their students on writing assignments (Silva, 2012). With the advent of technology in general and mobile phones in particular, feedback styles in EFL classes have been dramatically altered which provided instructors with the opportunity to utilize different web-based affordances including mobile apps to correct learners errors (Cavanaugh & Song, 2014).

There has been a growing interest in using smartphones as a form of mobile-assisted language learning (MALL) among English as a foreign language learners (EFL) in Iran. With growing use of MALL in the language learning process in recent years, some researchers found evidence proving its positive effects on learners’ motivation (Kim, Rueckert, Kim, & Seo, 2013), and on the degree of collaboration and interaction both among learners and between the teachers and learners (Goh, Seet, & Chen, 2012). One of the aspects of the MALL which has largely been emphasized in different studies is the mobility of devices that allows users to have access to it everywhere and at any time they desire (Cherian & Williams, 2008; Chinnery, 2006; Kennedy & Levy, 2008; Kukulska-Hulme, 2009; Power & Shrestha, 2009; Wishart, 2008). This type of learning is not similar to classroom learning and learners are not restricted to class space for learning and interaction. Ducate and Lomicka (2013) reported that over 50% of the English learners use MALL for developing their language proficiency these days. However, it seems that the Iranian EFL students do not show many inclinations to applying MALL as an educational tool most probably because of lack of instructions provided to them by the university professors in the Iranian universities (Yadegarfar & Simin, 2016). This study is intended to investigate the effects of using a mobile app named Telegram, having millions of users in Iran, on the development of the grammatical accuracy as the result of instructor feedback in an Iranian university through mobile immersion which only allows interactions among EFL peers and teachers to be conducted in the foreign language. Furthermore, this study aims to explored the participants’ attitudes towards using MALL applications, specifically Telegram, as supplementary teaching materials in improving the participants’ proficiency in learning the English grammar. The following questions guided this study:

1. Does the mobile immersion significantly improve learning of grammar skills by foreign language learners?
2. What are the learners’ perspectives towards the mobile immersion program?

2. Review of related literature

2.1. L2 learners’ grammatical development
Scholars such as Norris and Ortega (2006) believe that the best way to learn English is to focus on the grammar and lexis. Fluency in grammar can lead the language learners to high levels of linguistic accuracy and performance. Research in the past decades indicated that lack of interest
towards grammar is the result of its dull lessons presentations which make learners uninterested in learning (Wang, 2010).

Dealing with grammatical errors in L2 writing, some scholars (Bruton, 2009; Ferris, 2004; Truscott, 1999, 2007) have argued about the role of corrective feedback given by the instructors. Truscott (1999) believes that in order to improve the learners’ error regarding the L2 grammar, teachers’ feedback is not much positively influential, and it can even be negative in that process. On the other hand, some scholars (Bitchener & Ferris, 2012; Ferris, 2006, 2010; Sheen, 2007) have asserted the positive effects of the corrective feedback on the grammatical development of the learners, although it may create some problems, too. Ellis, Basturkmen, and Loewen (2001) stated that although corrective feedback can be a kind of reactive criterion to point the learners’ problems, it is time-consuming for the teachers. Therefore, it is suggested that the teachers raise the learners’ awareness about the typical and commonly occurred errors in the students’ writings prior to the writing sessions in order to avoid such mistakes to be made again. Another popular practice for improving the learners’ awareness of the grammatical errors is self-editing in which the learners try to identify and correct their own grammatical errors which have been prompted by the researcher’s feedback provided in chats.

2.2. Mobile assisted language learning (MALL)
MALL has largely been an interesting field of research for scholars from the beginning of the 21st century. One of the aspects of the MALL which has largely been emphasized in different studies is the mobility of devices that allows users to have unlimited access (Cherian & Williams, 2008; Chinnery, 2006). Papadakis and Kalogiannakis (2017) indicate that touchscreen technology offers a mode of interactive experience that mirrors the child’s natural constructivist learning which is in line with interactionist hypothesis. Ideally, smart devices accompanying applications (apps) can create exciting and effective learning environments for learning. Chinnery (2006) mentions easy-to-use keyboards, accessibility to wireless internet, integrated applications, and improved multimedia characteristics as the highly mentioned advantages of the MALL devices by the users. On the other hand, he argued that the short size of device screens and typing problems in the keyboard systems in some brands of the MALL devices are among the drawbacks of MALL which can be dissuasive for learning some of the skills such as writing.

Regarding the previous studies on learners’ perspectives on MALL, Kennedy and Levy (2008) found that a large number of the learners who had used the MALL in learning vocabulary perceived it as quite useful and stimulating. Todd and Tepsuriwong (2008) in another study in that field recognized that the English language learners find the “mobile mazes” appealing for learning. Stockwell (2007) in a similar research showed that since students have high anticipations about the effects of MALL, they have a great desire to achieve higher levels of language proficiency via the approach, so they tolerate the difficulties of using the MALL devices in the learning sessions. Corlet, Sharples, Bull, and Chan (2005) in their study on the attitudes towards using MALL through PDAs reported that the users found the approach as not effective enough in language learning, though they still demonstrated positive orientation in using the devices as learning tools. Kim (2015) conducted an experimental study to prove the effectiveness of the mobile-assisted language learning applications in improving the listening proficiency among the learners. He used Telegram as the basis for evaluating the extent of the users’ development and reported that it was effective in improving the listening skills of learners. In Iranian EFL context, Ebrahimpour, Rajabali, Siamian, Rahbar, and Vahedi (2016) evaluated the effect of Social Networks on the academic development of a large group of students at medical universities in Iran. The results revealed that among the large proportion of the users of social networks, the users of Telegram stood at the highest position. Xodabande (2017) reported the effectiveness of social media network telegram in teaching English language pronunciation to Iranian EFL learners.
2.3. Mobile immersion analysis

The interaction hypothesis (Long, 1990) forms the theoretical basis of mobile immersion studies and analyses in the area of language learning. Long believes that language learning is the result of communication and conceptualization among the learners. Language immersion, a situation in which learners with various levels of proficiency try to communicate in the target language, provides an opportunity for learners to be in contact with other language learners and the language itself. The interactionist hypothesis focuses more on feedback rather than form (Long, 1996). Long asserts that corrections of the learners’ productions (post-modified input) are more useful learning tools in comparison to introducing correct forms of language production (pre-modified input). The increasing numbers of mobile users provide a good opportunity for the mobile immersion as an alternative to the face-to-face immersion which can meet the mechanisms required in the interactionist hypothesis. The mobile immersion allows learners to have a complete control over the time period and amount of the conversations. In a study by Lai (2016) in China, a group of learners participated in a study where the mobile immersion effects were examined. The researchers introduced five verbs in English every day and provided the related translations in Chinese, too. The participants were expected to use the verbs in their conversations in the chat group. During the study program, the tutors provided the participants with proper feedback and the opportunity to take part in the chats. The results affirmed that 71% of the participants found the approach as helpful and the effects were regarded as positive.

3. Research design

This study used mixed-methods which is composed of both quantitative and qualitative data analysis. The quantitative data were collected through the experimental pre-test and post-test to determine the learners’ level and measure their learning progress, respectively. The study program was complemented by examining the chat histories available in Telegram database. For the qualitative part of the study, on the other hand, the data were collected through semi-structured interviews to find out the participants’ perspectives on the method applied in the study. All the interviews were recorded, transcribed, and coded for later analysis.

3.1. Participants and setting

The participants of the study were 30 female EFL adult learners selected through a non-random convenience sampling method from an English teaching Telegram channel at a university in Iran. The reason behind the sampling method was availability and being a member of English teaching channel over Telegram. To find out about the participants’ grammar ability level, we followed Ebadi and Rahimi (2018) in which they used DIALANG test to ensure the homogeneity of the participants’ proficiency level in their study. The participants took part in the grammar section of the English Dialang test. Then, the learners with similar ability levels were categorized in different groups. Dialang is a free language diagnostic test which is available online at https://Dialangweb.lancaster.ac.uk/for determining the language learners’ proficiency level in 14 different European languages. The scores are determined reported based on the Common European Framework of Reference for languages (CEFR) from A1 (the least proficient) that shows only limited control of a few simple grammatical structures and sentence patterns in a learnt repertoire to C2 (the most proficient) that maintains consistent grammatical control of complex language, even while attention is otherwise engaged (e.g., in forward planning, in monitoring others’ reactions).

The participants of this study were evaluated only for their level in grammatical structure proficiency in English which was the focus of the research. Dialang was used once as a pre-test to determine the participants’ level regarding the English structure prior to the study, and as the post-test to compare the participants’ progress and/or regression in the grammatical knowledge at the end of the study program for both experimental and control groups.
Additionally, Dialang’s diagnostic feedback helped the researchers in detecting the students’ main problems in grammatical structures to be addressed during the mobile immersion program.

Of all the participants, six groups were at high level of proficiency in grammar (C1 and C2); four were at intermediate level (B1 and B2); and five groups were at low level (A1 and A2). The researcher scheduled the online chat sessions at nights and the length of each conversation was about 15–30 min every other night at specific times. All the group members were expected to participate actively in the chats; however, in cases of absence, the feedback was ready to be read and used by all the members later on during the study program, and neither the participants, nor the instructor was allowed to change or omit the chats after each session.

The participants of control group included 10 EFL learners from different ability levels voluntarily participated to learn from their peers. The researchers intentionally paired them in low and high ability levels to encourage a meaningful interaction through which they could learn the target structures in Telegram chats with their peers on the same topics as the experimental groups, but they were not provided with the feedback by the instructor in the immersion program. They only received feedback from peers on their drafts.

They participated in the pre- and post-tests, to be compared with the experimental group in terms of progress in their grammatical ability level. The final results were compared both in various chat groups regarding the participants’ proficiency levels in grammar, and between the treatment and control groups.

3.2. Instruments

3.2.1. Telegram

Telegram is a free cloud-based messenger with seamless sync to access messages from various devices and one of the reasons for its popularity is that it is accessible in different formats on many devices which is available at [https://web.telegram.org/#/login](https://web.telegram.org/#/login). Telegram is an application that can be used on smartphones, computers, laptops, tablets, and many other electronic devices. A large number of Iranian EFL students use Telegram in Iran and as a favored platform for communication and learning English. The selection of Telegram as the platform for chats was inspired by the previous research on its popularity among Iranian EFL students. Ebrahimpour et al. (2016) found that over 80% of the participants used Social Networks, at the top of which was Telegram. The researchers stated that usage of this application would improve the cooperation among the users for dissolving the scientific matters. Also, Mashhadi Heidar and Kaviani (2016) in their study asserted that using Telegram in the English learning environments can result in the positive development of the vocabulary for the EFL learners.

3.3. Interviews

The semi-structured interviews involved some guiding questions (Appendix 1) about the role of Telegram in the learning process of the interviewees and its effects on the process of language learning. They also explored their perspectives about the probable positive and/or negative effects of using Telegram in mobile immersion program. The main purpose of the interviews was to tap into the perspectives of the participants on the degree of success or failure of the method applied in the study as well as the feedback provided to them in improving their grammatical ability. The interviews lasted between 10 and 15 min and were conducted in Persian to avoid any misunderstandings among the interviewees. They were recorded on the mp3 recorder software by one of the researchers to be translated into English. The interviews were analyzed, coded and categorized using the thematic analysis. According to Boyatzis (1998) thematic analysis clarifies the patterns and themes in qualitative researching a specific matter.
4. Data collection procedures

After determining the students’ level of proficiency in English grammar, they were divided into 15 groups of three participants, two EFL learners as well as the instructor. The participants in each group were at the same proficiency level. Every other night, all the groups were given the same topics to chat about. The members of each group used Telegram as their connective device to discuss the topics such as the role of social networks in the modern life, the environmental issues, and the aspiration towards learning English among Iranians, etc. The researcher was present as the instructor in all the conversations and provided necessary feedback to the group members. These conversation topics were chosen since the instructor assumed that various structural forms such as active-passive voice, different English verb tenses, conditional forms, correct adverb, and adjective forms, etc., could be evaluated through discussing these topics by the participants. These structures were reported in Dialang’s diagnostic feedback as problematic for the learners. Since the chat time was fixed for all the groups, the instructor was practically unable to provide feedback immediately for all the groups; therefore, the feedback was usually delayed. All the groups underwent the same program and the instructor attempted to provide them all with similar degrees of feedback. The program continued for 3 months and in the end, the English Dialang test was administered as the post-test. In the experimental groups, the participants were given feedback in the form of correcting grammatical errors which resulted in their self-editing and kept them motivated to participate in chats in subsequent sessions. The results of the three groups were once compared among the groups to evaluate the possible effects of the feedbacks on each group; and then, the post-test scores were compared with the pre-test results to see the final differences before and after the program on the EFL learners. In the end, the participants in the experiment group were interviewed by the researcher about their attitude towards the role of Telegram as a learning device. The following outline summarizes different stages in data collection:

| Stage | Description |
|-------|-------------|
| Stage 1 | Determining the students’ level of proficiency in English grammar through Dialang’s grammar test as pretest |
| Stage 2 | Grouping of the students into chat groups in Telegram based on their proficiency levels in grammar reported by Dialng test |
| Stage 3 | Choosing various topics of interest to be discussed by the students in chat groups |
| Stage 4 | Providing feedback by the researcher to each chat group on their grammatical errors including active-passive voice, different English verb tenses, conditional forms, correct adverb and adjective forms |
| Stage 5 | Conducting semi-structured interviews on the participants’ perspectives on their experience in the experimental groups |
| Stage 6 | Conducting post-tests to compare the groups’ progress |

5. Data analysis

The quantitative analyses of the participants’ scores in the pretest were compared with the scores of the post-test using the statistical software, Statistical Package for the Social Science (SPSS), version 19. A paired samples t-test analysis was utilized to find the probable differences of the results and to clarify the variations in the pre- and post-tests scores for the participants both in control and treatment groups. To explore the participants’ attitudes towards applying Telegram for the language learning purposes, the data were assessed qualitatively.

5.1. Descriptive statistics of the pre-test and post-test results

First of all, in order to examine the probable changes that occurred over the period of the treatment, descriptive data of the pre- and post-tests are presented below.

As it can be seen in Table 1, out of 30 EFL learners participating in the experiment group, 12 were at the C1 and C2 levels (40%), 8 occupied the B1 and B2 levels (26.6%), and 10 were at the low
levels of A1 and A2 (33.3%). On the other hand, the participants in the control group were 10, 3 of them were at C1 and C2 levels (30%), 3 others were at B2 level (30%), and 4 occupied the low levels of A1 and A2 (40%).

As it can be seen in Table 2, out of 30 EFL learners participating in the experiment group of the study, 14 were at the C1 and C2 levels (46.6%), 12 occupied the B1 and B2 levels (40%), and 4 were at the low levels of A1 and A2 (13.3). On the other hand, the participants in the control group were 10 in general, 4 of them at C1 and C2 levels (40%), 3 others were at B1 and B2 levels (30%), and 3 occupied the low levels of A1 and A2 (40%).

Because of the different nature of the data obtained from the post-test for the experiment and control groups, the test of normality of the collected data was conducted. Ghasemi and Zahediasl (2012) state that it is preferable that normality be assessed both visually and through normality tests, of which the Shapiro–Wilk test, provided by the SPSS software, is highly recommended to improve the validity of the data and reliability of method. Since the population in this study was limited, the Shapiro–Wilk test was performed to check the data normality. Table 3 presents the results of that test.

As it is shown in Table 3, the sig. value of the Shapiro–Wilk Test is greater than 0.05; therefore, the dependent variable, grammar proficiency was normally distributed for the experimental and control groups. Thus, it was possible to perform a t-test to find the significance of the mobile immersion on improving the participants’ grammar skill. The Tables 4.5 and 4.6 show the information on the t-test.

According to Table 4, there was a significant difference in the values in the post-test scores for the experiment ($M = 2.11, SD = 1.22$) and control groups ($M = 2.56, SD = 1.52$). The mean value
indicates the absolute difference between the values for the two variables and the standard error indicates the statistical accuracy of the relationship between the groups engaged in the study. The standard error mean for the experiment group equaled .03 and this value for the control group was .15.

After determining the values related to the t-test, the value of degrees of freedom (df), the t-value, and the p-value were calculated to ensure the significance of the mobile immersion on the grammar development for the experiment group in this study. The results are reported in Table 5. The Independent Samples T-Test which is a parametric test compares the means of two independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different.

Table 5 shows the result of the independent sample test between the experiment and control groups. It can be seen from Table 5 that the sig. (2-tailed) value (P-value) of the experiment and control groups was .001. Since this value for the experimental group is smaller than P > 0.05, a significant relationship between the mobile immersion and the development of the grammatical skill among the participants of the experimental group was supported.

To explore the learners’ perspectives about their experience in Telegram mobile immersion program, a thematic analysis was conducted the results of which are presented in Table 6. Thematic analysis is a method in qualitative research used for uncovering patterns and themes in a particular phenomenon (Boyatzis, 1998). In the present study, it was used for encoding the transcripts of the interviews. This study utilized data-driven approach rooted in the grounded theory methods which requires the researcher to explore the data and allow it to speak to him or her (Charmaz, 2006). The interviews in this study provided the researchers with an opportunity to member check which is also known as the informant feedback and respondent’s validation. Merriam (1997) considered it as a major step in establishing trustworthiness which results in mutual understandings and shared values in qualitative research. In this study member checking consists of taking data and interpretations back to the participants to confirm the credibility of interpretations based on the collected data. Member checking allowed the researchers to find out if their interpretations reflected the participants understanding of the participants experience in immersion program over Telegram. The data were triangulated through member checking in which the participants indicated that using Telegram along with the feedback they received contributed significantly to their progress evidenced by the post-test scores.

Regarding the overall experience of the learners, one point mentioned by most of interviewees was the difficulty of having access to Telegram in Iran because of filtering problems which made it a troublesome experience.
The focus of the second question was on the effectiveness of the method in promoting the grammatical proficiency. The participants’ answers showed that 93% were positive about the final impact of applying Telegram in improving grammar, and only 2% asserted the negative effect of it. Their justifications were mainly around the fact that using Telegram and the internet-based applications had created a gap in their studying habits. Five percent of the answers were neutral about this second question.

The third question dealt with the role of the instructor in correcting the participants’ problems in using the correct forms of grammar. Eighty-eight percent of the answers supported the positive role of the instructor in this regard and some of the interviewees gave examples of previously problematic cases of which were solved because of the instructor’s feedback. Seven percent of the participants reported the negative role of the instructor in this case mainly because they thought that when their mistakes were highlighted by the instructor, they were not eager to use those structures once more in the conversation because of the fear of making mistakes in using the correct forms. Again, 5% were neutral about the role of the instructor in this regard.

The fourth question of the interview concentrated on the most and least interesting types of assistance provided by the instructor during the program and the reasons for their answers. The largest portion of the interviewees (63%) affirmed that the methods used by the instructor and other students in the online chat groups were interesting. Sixteen percent of the participants, though, did not agree that the methods used were interesting enough for them, and 21% were not sure whether the methods applied were interesting enough to attract them to the study process, or vice versa.

The fifth question was about the advantages and disadvantages of Telegram as an educational device for the language learners. A large number of respondents to this question were positive about the advantages of the method and mentioned various examples of the advantages of using Telegram in improving the grammatical mistakes. One of the participants, for example, mentioned her long-lasting problem in using wh-forms in the middle of the sentences and expressed how the instructors’ explanations in one of the chats containing a similar mistake had helped her in understanding the problem and solving it. 5% of the interviews mentioned more disadvantages than the advantages for the method. They mainly insisted on the lack of clarification in the virtual environment of the chats and the difficulty of understanding the instructors’ explanations in the online environment. Only 1% of the answers to this fifth question were neutral.

| NO. | Questions                                                                 | Positive | Negative | Neutral |
|-----|---------------------------------------------------------------------------|----------|----------|---------|
| 1   | Overall experience of the online exchanges through Tel.                    | 83%      | 6%       | 11%     |
| 2   | Effectiveness of the method in promoting the gr. proficiency              | 93%      | 2%       | 5%      |
| 3   | Role of the instructor in pinpointing the gr. errors                       | 88%      | 7%       | 5%      |
| 4   | Types of assistance provided by the instructor and/or others              | 63%      | 16%      | 21%     |
| 5   | Advantages/disadvantages of Tel. in enriching the gr. proficiency         | 94%      | 5%       | 1%      |
| 6   | Anxiety level in using Telegram                                           | 80%      | 15%      | 5%      |

gr: grammar.
Tel: Telegram.
The last question addressed the participants’ level of interest in using Telegram as a learning device in comparison to the real classroom context. This time, again the largest proportion of the participants (70%) showed their interest in using Telegram as a learning device. Some of them justified this interest as the fact that almost everyone had the app on their cell phones or other electronic devices; therefore, it was easy to find their peers in that context and stay in touch with them permanently and in any occasion. Fifteen percent of the interviewees, though, preferred either other applications such as WhatsApp rather than Telegram, or the real classroom environment. The justification stated for that lack of interest in using Telegram was largely due to the filtering problems in Iran again. Five percent of the participants had no ideas about the positive and/or negative levels of interest in using Telegram as an educational device in learning grammar.

The overall results showed that the high percentage of the participants (83.5% in average) admitted the positive impact of using Telegram as an educational device in improving their proficiency in English grammar. On average, over 50% of the users of Telegram in this research mentioned that they had used it regularly for the educational purposes and that they found it useful in both learning language and in being in touch with other learners for the academic, educational, and learning purposes. Around 80% of the interviewees, on average, stated that without Telegram they felt a kind of separation from the learning environment and asserted that they had got used to this device in the learning process. Unlike this large number of users who supported the positive effect of Telegram in the learning process, only around 8.5% reported the negative effect of the device as being distracting and caused problems in their concentration. Finally, 8% of the respondents in this survey were neutral about using Telegram as an educational tool in learning English as a foreign language.

6. Discussion

The analysis of the post-test scores at the end of the study showed that MALL apps had a significantly positive impact on the post-test scores of the treatment group, while no significant changes was traced in the post-test scores of the control group in comparison to their scores in the pre-test. These results which supported the effectiveness of MALL apps on the grammatical performance of the EFL learners were in line with findings of previous studies (Comas-Quinn, Mardomingo, & Valentine, 2009; Demouy & Kukulska-Hulme, 2010; Ghaemi & Golshan, 2017; Habash, 2015; Jafari & Chalak, 2016; Kennedy & Levy, 2008; Mashhadi Heidar & Kaviani, 2016). The analysis of post-test scores, however, revealed an increase in the average scores in both groups; yet the increase in the control group was insignificant, though higher than the pre-test scores in general. Unlike the differences in the control group scores, the post-test scores in the treatment group proved the significant effect of using Telegram as a means for promoting the EFL learners’ skill in using the correct English structures. This can be the result of various reasons. Since most of the participants in the treatment group did better in the post-test scores in comparison to the their pre-test scores, it can be concluded that the method applied in this study was in fact effective. The reason for that progress can be the eagerness of the participants to use the method for language learning due to its novelty which motivated the learners in the treatment group.

Comparing the post-test scores in the control group, on the other hand, showed that some of the scores were higher than the pre-test scores, most of them were almost unchanged, and a few showed some levels of regression. This regression may have originated from the stress of the test or other mental reasons. The small development of some of the post-test scores in the control group compared to the pre-test scores in the same group can also be the result of students’ awareness about the format of such a test and getting prepared for the test by reading more grammar books or other possible ways.

Eventually, the significant positive effect of the final t-test affirmed that using MALL methods can be helpful in learning a foreign language which is in contrast to the findings
of Corlet et al. (2005) which concluded that some of MALL applications are not effective means of learning a foreign/second language.

Participants’ interview results showed that most of the participants tended to use their cellophanes for language learning purposes; this conclusion is against the findings of Pettit and Kukulska-Hulme (2008) who revealed the tendency of the students in not using the phones for learning aims. One justification for the differences in the results can be the changing role of the mobile technology through time from an entertaining device to an educational tool. In general, the positive effects of the MALL applications on learning English grammar among a group of EFL learners in a short period of this immersion program might be for various reasons, one of which is the excitement for the innovative aspect of the language learning through this method. The interview results also revealed the eagerness of the participants in applying the method.

7. Conclusion
This study evaluated the impact of the MALL applications, in particular Telegram, on the grammatical proficiency among the EFL learners. In addition to that, the participants’ attitudes towards the effectiveness of the app for language-learning purposes, especially improving the English grammar, were explored. The findings of this research suggest that MALL applications such as Telegram can be effective for grammar learning in EFL classes. The feedback provided by the instructor plays a role as the reminder of the correct usage of the language structure in later uses of the same form. The interview results also confirm that the learners’ motivation increases to a large extent when they use MALL applications for learning EFL. The findings of this study highlighted the significance of using MALL applications as supplementary educational tools alongside the traditional classroom practice.

Since this study was carried out with a limited number of participants, similar studies with more participants in a different chat platform such as WhatsApp could further investigate other language skills and components in online immersion programs. Following Kukulska-Hulme and Viberg (2018) recommendation in which they advocated for the benefits of collaboration in mobile language learning, but raised doubts about the processes and steps that are essential for mobile learning design; everyday use of learners mobile use outside educational context needs to be further explored. This study had some limitations including the limited number of participants who were all female because of availability problems. Another limitation was concerned with the participants’ Telegram access which is filtered in Iran and the researchers had to bypass the filtering by providing them with VPN and proxy accounts which contributed to low number of participants in this study which in turn impacted negatively on the generalizability of the findings.

Funding
This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Author details
Negin Ghorbani1
E-mail: neginghorbani2000@gmail.com
Saman Ebadi1
E-mail: samanebai@gmail.com
ORCID ID: http://orcid.org/0000-0001-8623-7751
1 Applied Linguistics, Razi University, Kermanshah, Iran.

Citation information
Cite this article as: Exploring learners’ grammatical development in mobile assisted language learning, Negin Ghorbani & Saman Ebadi, Cogent Education (2020), 7: 1704599.

References
Bitchener, J., & Ferris, D. R. (2012). Written corrective feedback in second language acquisition and writing. New York, NY: Routledge.

Boyatzis, R. (1998). Transforming qualitative information: Thematic analysis and code development. Thousand Oaks, CA: Sage Publications.

Bruton, A. (2009). Improving accuracy is not the only reason for writing, and even if it were. System, 37, 600–613. doi:10.1016/j.system.2009.09.005

Cavanaugh, A. J., & Song, L. (2014). Audio feedback versus written feedback: Instructors’ and students’ perspectives. Journal of Online Learning and Teaching, 10(1), 122–136.

Charmaz, K. (2006). Constructing grounded theory: A practical guide through qualitative analysis. London: Sage.

Chinnery, G. M. (2006). Emerging technologies, going to the MALL: Mobile assisted language learning. Language Learning & Technology, 10(1), 9–16.

Comas-Quinn, A., Mardomingo, R., & Valentine, C. (2009). Mobile blogs in language learning: Making the most
of informal and situated learning opportunities. 

ReCALL, 21(1), 96–112. doi:10.1017/S0958344009000032

Corlet, D., Sharples, D., Bull, S., & Chan, Y. (2005). Evaluation of a mobile learning organiser for university students. Journal of Computer Assisted Learning, 21, 162–170. doi:10.1111/j.1365-2729.2005.00124.x

Dawson, P., Henderson, M., Ryan, T., Mahoney, P., Boud, D., Phillips, M., & Molloy, E. (2018). Technology and feedback design. Learning, Design, and Technology: an International Compendium of Theory, Research, Practice, and Policy, 1-45. doi:10.1080/1978-3-319-177274-124-1

Demouy, V., & Kukulska-Hulme, A. (2010). On the spot: Using mobile devices for listening and speaking practice on a French language programme. Open Learning: the Journal of Open and Distance Learning, 25(1), 217–232. doi:10.26068/0151.2010.51955

Ducate, L., & Lomicak, L. (2013). Going mobile: Language learning with an iPod touch in intermediate French and German classes. Foreign Language Annals, 46(3), 445–468. doi:10.1111/flan.12043

Ebadi, S., & Rahimi, M. (2018). An exploration into the impact of WebQuest-based classroom on EFL learners’ critical thinking and academic writing skills: A mixed-methods study. Computer Assisted Language Learning, 31(5/6), 617–651. doi:10.1080/09588221.2018.1494757

Ebrahimpour, A., Rajaibali, F., Siamian, H., Rahbar, F., & Yahedi, M. (2016). The effect of social networks on the scientific research relations, prospectiveness, creativity and satisfaction of scientific position. International Journal of Medical Research & Health Sciences, 5(75), 413–418.

Ellis, R., Basturkmen, H., & Loewen, S. (2001). Preemptive focus on form in the ESL classroom. TESOL Quarterly, 35(3), 407–432. doi:10.2307/3588029

Ferris, D. R. (2004). The “grammar correction” debate in L2 Writing: Where are we, and where do we go from here? (and what do we do in the meantime ... ?). Journal of Second Language Writing, 13, 49–62. doi:10.1016/j.jslw.2004.04.005

Ferris, D. R. (2006). Does error feedback help student writers? New evidence on the short- and long-term effects of written error correction. In K. Hyland & F. Hyland (Eds.), Feedback in second language writing: Contexts and issues (pp. 81–104). Cambridge, UK: Cambridge University Press.

Ferris, D. R. (2010). Second language writing research and written corrective feedback in SLA. Studies in Second Language Acquisition, 32, 181–201. doi:10.1017/S027276310990490

Ghaemi, F. A., & Golshan, N. (2017). The impact of tele-gram as a social network on teaching english vocabulary among iranian intermediate EFL learners. International Journal of Information and Communication Sciences, 2(5), 86–92.

Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: A guide for non-statisticians. The Indian Journal of Endocrinology and Metabolism, 10 (2), 486–489. doi:10.5812/ijem

Goh, T. T., Seet, B.-C., & Chen, N.-S. (2012). The impact of persuasive SMS on students’ self-regulated learning. British Journal of Education Technology, 43(4), 624–640. doi:10.1111/j.1467-8535.2011.01236.x

Habash, M. (2015). Learning English vocabulary using mobile phones: Saudi Arabian EFL teachers in focus. European Scientific Journal, 11(1857), 446–456.

Jafari, S., & Chalak, A. (2016). The role of WhatsApp in teaching vocabulary to Iranian EFL learners at junior high school. English Language Teaching, 9(8), 85–92. doi:10.5539/elt.v9n8p85

Kennedy, C., & Levy, M. (2008). L’italiano al telefono: Using SMS to support beginners’ language learning. ReCALL, 20(3), 315–330. doi:10.1017/S0958344008000530

Kim, D., Rueckert, D., Kim, D.-J., & Seo, D. (2013). Students’ perceptions and experiences of mobile learning. Language & Learning Technology, 17(3), 52–73. Retrieved from http://lilt.msu.edu/issues/october2013/kimetal.pdf

Kim, H. S. (2015). Emerging mobile apps to improve English learning skills. Multimedia-Assisted Language Learning, 16(2), 11–30.

Kukulska-Hulme, A. (2008). What should we do with a Jack-in-box? Anticipating surprises in mobile learning. In M. Allegro, G. Fulantelli, M. Gentile, & D. Tobi (Eds.), Emerging educational technologies and practices (pp. 7–18). Palermo: Consiglio Nazionale delle Ricerche, Istituto per le Tecnologie Didattiche.

Kukulska-Hulme, A. (2009). Will mobile learning change language learning? The Journal of the European Association for Computer Assisted Language Learning, 1(2), 157–165.

Kukulska-Hulme, A., & Viberg, O. (2018). Mobile collaborative language learning: State of the art. British Journal of Educational Technology, 49(2), 207–218. doi:10.1111/bjet.12580

Lai, A. (2016). Mobile immersion: An experiment using mobile instant messenger to support second-language learning. Interactive Learning Environments, 2016. doi:10.1094/1049820.2015.1113706

Long, M. H. (1990). The least a second language acquisition theory needs to explain. TESOL Quarterly, 24(4), 649–666. doi:10.2307/3587113

Long, M. H. (1996). The role of the linguistic environment in second language acquisition. Handbook of Second Language Acquisition, 2, 413–468.

Marshadi Heidar, D., & Kaviani, M. (2016). The social impact of telegram as a social network on teaching English vocabulary among iranian intermediate EFL learners. Sociological Studies of Youth, 23, 65–76.

Merriam, S. B. (1997). Qualitative research and case study applications in education. San Francisco: Jossey-Bass Publishers.

Nickel, T. (2002). Online learning activities: Beginning an international collaboration. The International Review of Research in Open and Distance Learning, 3(1), 122–134. doi:10.19173/irrodl.v3i1.73

Norris, J., & Ortega, L. (2006). Synthesizing research on language learning and teaching. Amsterdam/ Philadelphia,PA: John Benjamins.

Papadakis, S., & Kologianakis, M. (2017). Mobile educational applications for children: What educators and parents need to know. International Journal of Mobile Learning and Organisation, 11(3), 256–277. doi:10.1504/IJMLO.2017.085338

Power, T., & Shrestha, P. (2009, June 23–25). Is there a role for mobile technologies in open and distance language learning? An exploration in the context of Bangladesh. In 8th International Language and Development Conference. Dhaka, Bangladesh.

Sheen, Y. (2007). The effects of focused written corrective feedback and language aptitude on ESL learners’ acquisition of articles. TESOL Quarterly, 41(2), 255–283. doi:10.1002/tq.255-7249.2007.tb00059.x

Silva, M. L. (2012). Comments in the classroom: Student attitudes and preferences for video commentary or Microsoft Word comments during the revision process.
Appendix 1.

1. Describe your overall experience of the online exchanges through Telegram with the classmates and/or the teachers/instructors.
2. How effective was the tool and the method to promote grammatical competence for you? Explain the moves during the online chats that might be particularly helpful or confusing.
3. What was the role of an instructor in pinpointing the grammatical errors? Did you find it helpful in general?
4. What types of assistance provided by the instructor and other participants through the study program were the most and the least interesting? Why?
5. What were the advantages and disadvantages of Telegram as medium to enrich your grammatical proficiency used in the study?
6. How was your level of interest in using Telegram as a learning device and how do you compare it with classroom context?

Stockwell, G. (2007). Investigating learner preparedness for and usage patterns of mobile learning. Computer Assisted Language Learning, 20(3), 253–270. doi:10.1080/095834408000232

Todd, R. W., & Tepsuriwong, S. (2008). Mobile mazes: Investigating a mobile phone game for language learning. Computer Assisted Language Learning, 10 (1), 20–42.

Truscott, J. (1999). The case for "The case against grammar correction in L2 writing classes": A response to Ferris. Journal of Second Language Writing, 8(2), 111–122. doi:10.1016/S1060-3743(99)80124-6

Truscott, J. (2007). The effect of error correction on learners’ ability to write accurately. Journal of Second Language Writing, 16, 255–272. doi:10.1016/j.jslw.2007.06.003

Wang, F. (2010). The necessity of grammar teaching. Journal of English Language Teaching, 3(2), 78–81.

Wishart, J. (2008). Challenges faced by modern foreign language teacher trainees in using handheld pocket PCs to support their teaching and learning. ReCol, 2013, 348–360. doi:10.1017/S0958344008000736

Xodabande, I. (2017). The effectiveness of social media network telegram in teaching English language pronunciation to Iranian EFL learners. Cogent Education, 4(1), 1–16.

Yadegarfar, H., & Simin, S. (2016). Effects of using Instagram on learning grammatical accuracy of word classes among Iranian undergraduate TEFL students. International Journal of Research Studies in Educational Technology, 5(2), 49–60. doi:10.5861/ijrset.2016.1572
