The Role of Mobile-assisted Language Learning (MALL) in Enhancing the Writing Skills of Intermediate IEP Students: Expectations vs Reality

Mariam Al-Shehab

English Language Unit, College of Life Sciences, Kuwait University

Abstract

Despite extensive research into the effectiveness of mobile-assisted language learning (MALL) in ESL/EFL language learning, there is insufficient evidence to conclude that supplementing conventional teaching methods of the writing process approach with MALL significantly improves the English writing performance of native Arabic speakers. This study investigates the role of mobile-assisted language learning in enhancing the writing skills of forty female intermediate-level Intensive English Program (IEP) students at an intermediate level at Kuwait University. Participants were tested using a variety of mobile applications and websites (i.e. the Microsoft Word application, an English dictionary application, and internet search engines). The researcher utilized questionnaires, observation notes, and other qualitative methods from student assignments for data collection. Results of the data analysis indicate that smartphones are indeed an effective teaching tool, with multiple positive effects on student agency. However, due to its nature and complexity, a cautious approach was used to interpret the findings of this study. The ultimate goal of the research was to compare the traditional approach to the teaching of process writing to a mobile-assisted approach. Study findings are discussed in details and options for future research are explored. Overall, results suggest that learner autonomy is improved by engaging in the writing process both inside and outside of the classroom. The results also suggest implications for increasing motivation and peer collaboration via the use of mobile technology.

Keywords: *Mobile-assisted Language Learning (MALL), Writing, Autonomy*

Introduction

One of the most common challenges faced by many Arab English as a Second Language/English as a Foreign Language (ESL/EFL) students is writing which is primarily based on the complexity of writing as a general skill; students need to be focused on the details inherent in the writing process and, for Arab learners, the differences between English and Arabic writing are vast. However, traditional writing methods taught in a classroom setting may not be appropriate for addressing the needs of digital natives born into a world of invisible technology. Such students can quickly be distracted by the classroom setting and lose focus when traditional teaching pedagogies are applied. Even with the incorporation of smartboards, e-books, internet, and highly-equipped "smart classrooms," many students still struggle with "smartphone fixation," gazing into the screens of their limitless "digital realm" for constant stimulation. Hence, conventional teaching methods of writing need to be reexamined so that teachers may effectively communicate with their students via the "new language" of this generation, which appears to be neither their first language (Arabic) or second language (English), but rather a type of "mobile phone" lingo. Indeed, it is not a stretch to compare mobile phone proficiency to that of proficiency in a foreign language, as these devices can be described as the "medium" of a widely shared "social language" prevalent across Gen Z learners.

Academically, teachers are encouraged to step out of their comfort zones and explore the potential of smartphone technology; realistically, they are to consider these devices as the new standard for communication and use them as a teaching tool that facilitates the learning process; smartphones use effectively paves the way for a new "learner-centred" environment. In 2016, Lutkewitte stated that "we cannot nor should [we] ignore the power of mobile technologies and what they offer students and faculty" (p. viii). She elaborates on the premise that software and applications via handheld devices lead to smarter decisions. Therefore, one must not neglect how mobile phones control the behaviour of their users both inside and outside the classroom. Frustration can result if teachers are unable to manage their writing classes, especially those with many students. An overwhelming teaching situation hinders language instructors from giving individualized attention to students (Harmer, 2012).

Mobile devices possess a myriad of rich features that teachers can utilize to enhance the learning process, particularly in the context of English writing (Al-Hamad, Al-Jamal, & Bateineh, 2019; Jassim & Dzakiria, 2019; Siddique & Nair, 2015). With mobile usage increasing worldwide, it is important to examine the numerous possibilities for its use as an effective teaching aid. A considerable amount of research focusing on mobile-assisted language learning (MALL) in ESL/EFL classes indicates its potential for enhancing ESL language skills (e.g., reading, listening, and speaking) through the use of different applications. However, at the time of this study, insufficient evidence exploring the use of MALL vs the traditional approach of process writing remained. To bridge the gap, this study investigated the potential role of MALL in improving the writing process of ESL/EFL learners and compares it to that of the conventional writing approach. Therefore, the goal is to practice employing this new integrated teaching approach in a way that empowers teachers to deliver more authentic teaching strategies. In a

way, ESL/EFL teachers need to bridge the gap between 21st century students and educators by rethinking what we do in the writing classroom (Moore et al., 2016).

As of the time of writing, there is only one known study investigating the potential influence of mobile-assisted language learning in addition to the "process writing" approach on ESL student writing performance. Imelda, Cahyono, and Astuni (2019) found that "the process writing approach learning combined with video-based mobile was effective to enhance the learners' writing skills" (p. 334). However, this study focused only on the use of videoes to help students write essays by applying the process approach. It did not combine the use of search engines, word applications, or dictionary applications to assist students in the writing process. Other studies utilized WhatsApp, blogs, and SMS, but were not concerned with the implementation of the process approach of writing.

Research Questions
The study was based on the following questions:
  1. How can the use of mobile phones enhance student process writing skills at the intermediate level by using the traditional writing approach vs MALL approach?
  2. What are the effects of using the MALL approach on students in the classroom?

Literature Review
The Role of MALL in ESL/EFL Writing Class
Mobile learning (m-learning) or mobile-assisted language learning (MALL) were originally derived from computer-assisted language learning (CALL) in the 1980s and 1990s. However, more students use mobile phones than they use computers or laptops, so it is important to examine the MALL approach as a more recent concept in the ESL/EFL classroom. Miangh and Nezarat (2012) defined MALL as "the use of mobile technology in language learning… in MALL there is no need for the learners to sit in a classroom or at a computer to get learning materials" (p. 309). The term "new technologies" refers to the use of mobile phones and tablets in the context of language teaching and learning (Kukulska-Hulme, Lee, & Norris, 2017). Students can also extend their learning process outside the classroom at their convenience. Similarly, Rao (2019) described MALL as an efficient and flexible tool in education, specifically in ESL/EFL classrooms due to its significant impact on learning and teaching processes. This method is more flexible and realistic than traditional methods, as students do not have to be physically present in class to learn.

Earlier studies on the use of mobile-assisted language learning have led to an important debate regarding ESL/EFL writing classes: Some have reported that learners are unwilling to apply mobile technologies to the learning process, while others have compared the application of new writing techniques through the use of mobile vs use of pen and paper (Folk, 2016). Findings indicated that "in comparison with digital writing, traditional paper-and-pencil writing may seem too formal or even boring" (Al-Hamad et al., 2019, p. 290). Similarly, some studies on mobile-assisted language learning oppose its effectiveness and flexibility, specifically, when there is a massive influx of applications available for learning-teaching purposes. Although there are

various application options for ESL/EFL learners in the digital world, students are unable to discern which applications best serve their purpose. Sendurur (2020) argues that it can be difficult to recognize the purpose of these applications, and teachers need to explicitly show students objectives of certain applications to differentiate between "non-formal and informal learning tools". This emphasizes the role of teachers in carefully guiding students to select applications that meet their student language needs; they should refrain from choosing applications merely based on perceived popularity and/or download counts.

More recent studies on MALL concerning the teaching of writing skills have, on the contrary, showed promising results for ESL/EFL learners. Al-Hamad et al. (2019) examined the possible findings of MALL in developing the writing skills of teenage students. Study results showed a considerable amount of performance progress in terms of content and ideas, organization, mechanics, vocabulary, and word choice. Another study by Jassim and Dzakiria (2019) corroborated this concept; MALL was used to develop the writing skills of Arab EFL students. Mobile phones were found to have positive effects on student writing skills in terms of content and structure; in fact, results strongly suggest that mobile phones facilitate and enhance the teaching of writing because of their ability to motivate students. Other studies support giving students a choice as to which learning application they want to use because this can significantly affect their "self-directed learning" process, which leads to enhanced decision-making skills and critical thinking skills (Pegrum, 2014). However, none of these studies investigated the connection between the MALL approach and the traditional "process writing" approach.

Process Writing in ESL/EFL

As mentioned before, mastering the skill of writing can be very difficult for ESL/EFL students. According to Richards and Renandya (2002), "the difficulty lies not only in generating and organizing ideas but also in translating these ideas into the readable text" (p. 303). Papilaya (2018) found that the implementation of the process writing approach does not only improve the writing skills of ESL/ EFL learners, but it originally improves idea generation.

ESL students are typically encouraged to focus on two different levels of writing skill: First, the higher-level skills, which make up the planning and organizing stage. Secondly, they are encouraged to focus on lower-level skills such as spelling and word choice (Richards & Renandya, 2002). The process writing approach is utilized in many universities to teach writing at the paragraph and essay level. "A well-written paragraph is, therefore, more or less an indicator of a student's basic writing ability that determines his or her academic success" (Dokchandra, 2018, p. 2).

Nevertheless, teaching the process writing approach to an overwhelmingly large class is a time-consuming process. Students are required to understand writing basics through a series of stages. The four stages of the process of writing are planning, drafting (writing), revising (redrafting) and editing. However, three other stages "external stages" include responding (sharing), evaluating, and post-writing; teachers encourage students to do all three before the

final submission of a paper (Seow, 2002). An updated explanation of the writing process was proposed:

As Harmer (2012) stated, "the writing process does not go in only one direction. For example, sometimes we plan what we are going to write, but after we have drafted it, we go back and plan all over again. Sometimes at the last moment (the final version), we rethink what we have written and go back to the planning or the editing stage. The writing process is a bit like a wheel, in other words, and we tend to go round it in many directions." (Harmer, 2012, p. 129)

The writing process is not a linear activity as earlier studies have indicated, focusing merely on the finished product; rather, it is an interactive process that involves going through more than one stage simultaneously to carefully think, rethink, and review written ideas before the final submission.

There remains an ongoing debate among ESL/EFL researchers on whether students who have internalized the stages of the writing process can still master writing accurately. Ferris (2002) argued that excessive mistakes on one's sentence and discourse level do negatively affect the assessment of the final draft, even if students have presented original ideas in their written text. She recommends not only focusing on ideas but also on improving editing skills. Ferris further explains that when students can locate and correct their mistakes before the final stage of submission, then they have effectively edited their texts. These errors are related to grammatical, lexical, and mechanical levels, which comprise the editing stage of the modern writing process approach. Ghorbani and Ebadi (2020) argue that one way to improve the learners' awareness of their grammatical mistakes is through self-editing practices. However, very few research has been published concerning self-editing techniques with MALL approach (Al-Wasy & Mahdi, 2016). "Most L2 students were being taught process writing strategies to achieve effective written communication (products), with differences occurring in emphasis" (Reid, 2001, p. 29). An ESL/EFL teacher expects learners to be able to produce "approximate target language forms" for communication (Larsen-Freeman, 2001). Hedge (2010) also argued that the process of writing consists of guiding students to communicate and connect whole pieces of information or ideas by visualizing their target audience in correlation with producing grammatical and lexical discourse of a high level.

Many research has been conducted examining common error types and recognizing their patterns, especially among Arab ESL/EFL learners (Ahmed, 2019; AlTameemy & Daradkeh, 2019; Nuruzzaman, Islam, & Shuchi, 2018; Othman, 2019); identifying these error patterns can be most effective for the learning-teaching writing process (Ferris, 2002). As a result, the teacher's task is to foster learning by identifying the most frequent types of errors, such as those involving nouns, verbs, punctuation, as well as sentence structure, word form, and prepositions (Peñaflorida, 2002). Peñaflorida reinforces the idea that when teachers respond to student writing appropriately, their feedback can lead to better-written work and a more enjoyable learning experience. Unlike the "old grammar approach," which focuses primarily on marking every student's mistake, ESL teachers should have a broader goal of turning students into independent editors; this encourages learner autonomy in the future. It is important, then, to employ an

eclectic writing approach that trains students to focus on both content and structure of their texts to express ideas accurately. In large classes, mobile-assisted language learning approach can save time and give individual attention to students, allowing them to focus on content and structure independently.

Data Collection

Mixed methods were utilized to gather data regarding the use of a MALL approach for a writing class to measure their effectiveness in improving the writing skills of female students at the intermediate level. The researcher collected data from questionnaires, observation notes, and writing performance ratings.

Method
Participants

Forty first-year female students enrolled in an intermediate intensive English program at Kuwait university participated in this research. They were all native Arabic speakers instructed to produce an appropriate paragraph-level text in their writing class. Participant ages ranged from 17 to 19 years. English proficiency levels, determined from a placement test taken before admission, were almost equal across participants. The duration of the study was approximately five weeks.

Questionnaire

Thirty-five out of forty female students were given a paper-based questionnaire, as five students were absent on the day of questionnaire administration. It consisted of both closed-ended and open-ended questions that served to investigate student response to using mobile-assisted language learning in the intermediate writing program at Kuwait University. This data was analyzed, along with the implementation of the descriptive analysis.

Observation
Traditional Process Writing Approach

Students were clearly instructed to follow the writing task according to the writing process approach; this is meant to assist them in understanding how to write in an academic style. Writing process steps and strategies were explained to students so that they could begin. The approach went as follows:

1. A topic was assigned to all forty students in the class. They had the choice to work either individually or in pairs.
2. Students were asked to brainstorm ideas for 10- 15 minutes.
3. Students were asked to initially start writing their ideas on paper to form a working outline. The duration of this planning task varied according to each student's pace. The task could last for 30 minutes, 60 minutes, or even the whole class duration. Some students completed this task at home if they were unable to finish during class.

4. After organizing their ideas on paper, students submitted their working outlines for feedback.
5. Students were provided conferencing sessions for discussing their ideas; examples of suggestions for improvement included utilization of logical order and clarification of misinterpreted ideas or expressions.
6. The following day, students started writing their first drafts in class and submitted them for teacher feedback.
7. First drafts were returned to students for revising and editing purposes to develop content and structure.
8. Finally, a total of forty final drafts were submitted for the assessment using rubrics developed by course teachers in the department.

Integration of the MALL Approach to the Writing Process

After administering the classic method for writing the assignments, it was important to introduce students to a more modern approach to writing which pertains to using learners' mobile devices for writing. Thirty-seven female students were observed during the writing class in which the teacher took notes during the writing task. Three students were absent on the day of the study. The task of writing a descriptive paragraph was scheduled for almost a two-hour duration (the duration of the class). Initially, students were asked to complete the writing assignment in an hour to test whether, as digital natives, they were quick enough to type using their mobile phones quickly enough to finish the writing task in an hour. However, the teacher ended up using the allocated class time for this task (i.e. two hours).

The topic was introduced to students via Word document in the class where everyone was able to read it on screen. They were asked to use their mobile phones to explore the topic further and begin their writing task individually, without the assistance of the teacher. This was implemented to prepare students to work independently and encourage autonomy in writing (as they were previously provided with their teacher's feedback on content and structure in the last assignment).

Students searched for information about the topic to help them write their first draft, which was part of the writing process planning stage. However, few students requested to use pen and paper to brainstorm for ideas first. At the same time, the rest of the class immediately utilized their mobile phones and started using the Word app or searching engines for information. After the brainstorming process, some students asked the researcher to check their outline or first draft. Their request was turned down, as the purpose of the study was to investigate whether usage of a mobile phone would help participants improve their writing skills. It was observed that a few students were able to finish in an hour, while the majority finished on time (2 hours). Overall, a total of 34 participants submitted their writing assignments to the teacher either via email or the Remind App.

Results
Descriptive Statistics Analysis

Table 1 shows that 37% of students used a writing app or writing software in high school in their English class, while 63% did not.

Table 1.
Question1: Have you ever used any writing app or writing software for your English class in high school?

Response	Percentage(%)	Response Count
Yes	37	13
No	63	22

Table 2.
Question 2: Do you think using the word app for your writing assignment is useful?

Responses	Percentage (%)	Response Count
Yes	86	30
No	11	4
I really do not know	3	1

According to Table 2, 86% of students think that the Word app is useful, whereas only 11% of participants believe it is not useful. However, only one student did not indicate whether using the Word app for her writing assignment would be useful or not.

Table 3.
Question 3: How can you describe the process of writing in word app for 096 (English course number)? (e.g. easy, very easy, somewhat easy, difficult, very difficult, somewhat difficult)

Responses	Percentage (%)	Response Count
Easy	46	16
Very easy	29	10
Somewhat easy	6	2
Difficult	9	3
Very difficult	6	2
Somewhat difficult	3	1
I do not know	3	1

Table 3 indicates that 46% of learners describe the process of writing in the Word app as easy, whereas 29% of students describe it as very easy and 6% of students say it is somewhat easy. However, a total of 6 participants describe this process as difficult, very difficult, and somewhat difficult: 9%, 6%, and 3%, respectively.

Table 4.
Question 4: Can you see yourself using a writing app in the future for your other courses or other English courses?

Responses	Percentage (%)	Response Count
Yes	80	28
No	14	5
I do not know	6	2

Table 4 displays that 80% of students will be using a writing app for their courses in the future, while only 14% of them will not use it. However, few participants, 6% do not know whether they will be using it in their future courses or not.

Observation Results

The use of mobile phones during the writing task led to more engagement and enthusiasm during the writing process than applying the traditional writing process approach. One finding was that most students promptly used their devices to develop their ideas or content aspects, but not necessarily their mechanics or word choice, which is to be expected at their proficiency level. Another finding was related to the time spent on the completion of the writing tasks. In other words, when the MALL approach was applied on the same group of students, most of them finished the task within the designated time, which meant that they spent less time on the writing task than the classic writing approach. Nevertheless, a small number of students finished the task on the same day. In contrast, the same group of students applying the traditional method spent a week to finish the writing task of descriptive paragraph since it involved the teacher conferencing with students after the brainstorming process and submitting the first draft for revision and editing. For such a large class, this could be quite time-consuming for the teacher.

In addition to the minority of students who requested to follow the classic approach of using pen and paper first, they were more hesitant than others when using the MALL approach because they felt uncomfortable using their mobiles for the brainstorming process of writing. Although students were specifically requested not to talk to their peers during the writing task and instructed to work individually, they still helped each other organize ideas and even download the Word app on their devices. One key finding was that some students used Google Translate instead of a dictionary app. This was evident when observing a student telling her classmate that it was "difficult." However, it ought to be mentioned that this was the same student who failed her first writing assignment.

Figure 2 summarizes the average writing performance of students through the implementation of the traditional writing approach and the MALL approach to teaching writing in terms of content and structure. For the traditional writing approach, the average score (out of 100) for "successfully-formed topic sentences" was 87.30 (mean=8.73), while the score for "supporting sentences with details" was 88.07 (mean=17.61). The percentage of students concluding sentences correctly was 88.46 (mean=8.84), whereas the average mechanics' score was 80.38 (mean=8.038). Finally, the average scores for grammar and word choice were 84.80 (mean=16.96) and 85.76 (mean=8.57), respectively.

The Average of Student Academic Performance: Writing
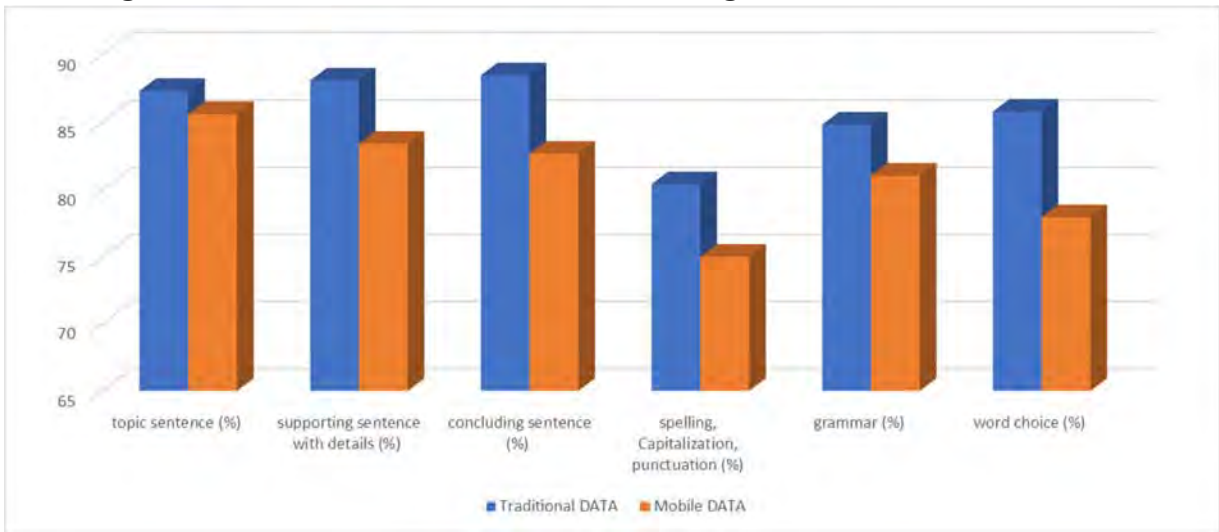

Figure 2. Average Academic Performance of Student Writing: Traditional Writing Approach vs Mobile Writing Approach

In terms of the mobile-assisted language learning approach, the average percentage score for topic sentences was 85.58 out of 100 (mean=8.56), while the average score for supporting sentences and details was 83.38 (mean=16.68). The percentage of students concluding sentences correctly was 82.64 (mean=8.26), and the mechanics' score was 75 (mean=7.50). The average scores for grammar and word choice were 81.02 (mean=16.21) and 77.94 (mean=7.79), respectively.

Criteria	Traditional Approach	MALL Approach
Topic Sentence	87.30 (mean=8.73)	85.58 (mean=8.56)
Supporting sentences with details	88.07 (mean=17.61)	83.38 (mean=16.68)
Concluding sentence	88.46 (mean=8.84)	82.64 (mean=8.26)
Mechanics (spelling, capitalization, and punctuation)	80.38 (mean=8.038)	75 (mean=7.50)
Grammar	84.80 (mean=16.96)	81.02 (mean=16.21)
Word choice	85.76 (mean= 8.57)	77.94 (mean=7.79)

Figure 3. Summary of Average Academic Performance of Student Writing: Traditional Writing Approach vs Mobile Writing Approach

Figure 3 summarizes writing performance averages when applying the conventional writing approach vs the mobile-assisted language approach in their writing assignments. In the traditional writing approach, students scored in the range of 80%-87%, which is equivalent to "Very Good" in all of following components: Topic sentence, supporting sentences with details, concluding sentence, mechanics, grammar, and word choice. When applying the MALL approach, students scored 75% and 78% for mechanics and word choice, respectively, which is equivalent to "Good". However, scores were higher, or average, for the other writing components, "i.e. Very Good."

Discussion

The study was conducted to examine what role mobile phones play in developing the writing skills of students by applying the process approach. Specifically, the study aimed to investigate whether Arab ESL writing performance can be improved via the use of a mobile-assisted language learning approach combined with writing process strategies. Another objective was to examine the effects of the MALL approach on students in the classroom. Study findings revealed that the MALL approach concerning the process writing approach could enhance student writing skills in the areas of content and grammar. However, there was no significant improvement in the areas of mechanics and word choice.

The study found that, on average, Arab ESL students performed well in terms of writing content. Most students were successfully able to write "Very Good" topic sentences, supporting sentences, supporting details, and concluding sentences. These results are consistent with those of Mauricio and Genuino (2020), who found that using smartphones for writing activities had a positive impact on content and organization. One reason for this is that mobile phones can assist students in developing and improving their ideas. In other words, students can brainstorm ideas and develop them by exploring authentic online materials to explore their chosen topic further. There was a sense of "positive engagement" between students and the information they accessed online via their smartphones (i.e. student-mobile interaction). Another reason could be related to the fact that students were able to apply the strategies of the writing process approach easily and follow its stages independently. They paid attention to the prewriting stage, actively engaging with their mobile phones by searching for ideas that would improve paragraph content. It can be argued that even students of low proficiency levels can obtain valuable assistance during the prewriting stage by utilizing their devices as a digital learning tool.

Conversely, students utilizing the conventional writing approach with the implementation of the process approach students led to relatively high average scores of "Very Good" in the content aspect of writing: Topic sentences, supporting sentences, supporting details, and concluding sentences were all generally very good. This may be attributed to the active role of student-teacher collaboration in providing students with response or feedback on their preliminary ideas at the planning stage. For instance, students often referred to the teacher with questions related to the prewriting stage; they asked these questions via conference sessions wherein they discussed ideas and sought clarification. This activity provided students with the opportunity to learn how to interpret their ideas or expressions logically. As mobile phones are unable to do this, it follows that student-teacher interaction is a more effective tool in improving the planning stage of the writing process than the use of mobile-assisted learning tools. This notion is supported by Jalaluddin (2019) when he explained that, "the connection between teacher's assistance and the student's performance plus the will to persevere in the writing task somehow works like a chain as it is interconnected to one another" (p. 66). In the first traditional technique, students received feedback from the teacher through conferencing sessions, while in the second MALL method learners did not receive any feedback from the teacher during the writing process. Their mobile devices served only as a one-way learning/teaching tool. This result is in line with the findings of

a study by Siddique and Nair (2015), which showed an improvement in student organizational skills and supporting details. It can be argued that even though the traditional approach group outperformed the MALL approach group, the second group scored in the same range of "Very Good" without teacher assistance. To the researcher, this outcome in itself is promising. It implies that student autonomy is increased through digital assistance.

In a traditional learner-centred approach, the teacher plays the role of facilitator. In a relatively "newer" learner-centred approach, the mobile phone plays a similar role that of a digital facilitator. Results suggest that mobile phones can indeed assist in enhancing learner writing skills, even in the absence of teacher interaction. Such implementation of organizational skills through student-mobile interaction can assist in the student's ability to write relevant and meaningful supporting sentences and details without relying on teacher feedback (provided that students can evaluate the information online and determine what is useful and relevant in order to complete the given task). Hence, ESL/ EFL learners can be trained to become "independent learners" when they are given intensive language instruction on how to search for information online and evaluate the information they access.

Another key finding of this study deals with the improvement of grammar accuracy and is consistent with results discussed by Ghorbani and Ebadi (2020) as well as Khodabandeh, Alian, and Soleimani (2017). Students who depended on their smartphones scored "Very Good" in terms of grammar; however, those who utilized the conventional approach of writing scored slightly higher. This could be attributed to teacher feedback during the editing or revising stages. In other words, students who were provided with cues and comments to correct their grammatical errors when they submitted their first draft were able to utilize the feedback and write better paragraphs. Students who implemented the mobile-assisted approach scored slightly lower in comparison to their counterparts who used the traditional method. This may be because those students relied solely on digital responses and not peer or teacher responses when submitting their only drafts. This result is normal when it comes to ESL/EFL writing, as lack of personal feedback from a teacher generally results in a greater volume of mistakes in term of grammatically incorrect sentences.

The study also found that student scores in terms of mechanics (i.e. spelling, capitalization, and punctuation) and word choice were lower when the MALL approach was applied. Moreover, unlike the traditional writing method, pair work and group work was discouraged in the MALL approach, as the researcher sought to determine whether mobile phones can improve learner spelling, punctuation, word choice, and editing skills without the assistance from teacher and/or peers. One reason for this result could be due to the lack of teacher feedback during the writing process stage; students were expected to use dictionary apps for the editing process. The teacher sought to measure the student's knowledge of punctuation and lexical skills and whether these were enhanced with the use of mobile technology. These results were inconsistent with earlier findings by Aghajani and Zoghipour (2018), who found that self-correction and peer-correction were highly useful methods for improving student writing performance. Another reason why student scores for mechanics and word choice were lower could be attributed to a lack of digital

knowledge. In other words, students may not have activated the proofreading features provided by the Word app. Given the lower scores, it may be surmised that study subjects were not fully equipped with self-editing skills at this stage. Ferris (2002) argued that students could not survive outside ESL "sheltered" classroom unless they learn how to minimize their mistakes as teachers will not be available to assist them; therefore they need to learn how to edit their text for errors. This finding could be a result of the study limitations. For instance, students were not allowed to collaborate with their peers for feedback; neither were they given sufficient training on self-editing or digital editing activities. However, in the traditional learning experience, students relied heavily on their teacher for feedback and submitted a second, revised draft.

In terms of the effects of mobile-assisted language learning on ESL/ EFL Arab students, the study found that students were highly engaged and motivated to be introduced to MALL in their ESL/EFL class; MALL is appealing to learners who primarily use mobile phones for personal purposes during class. The same group showed less motivation and enthusiasm when they were following only the traditional writing approach (without the use of their mobile phones) during the writing process assignment. Hence, this integrated technique proved to more flexible for teenage students than the conventional method of writing. Not only did it save time, but it also helped students manage their time efficiently and write with less effort. The conventional writing approach was time-consuming, as the task lasted an entire week (equivalent to two hours a day for five days). With the mobile-assisted language learning approach, the writing session lasted only for one day. This lies in the fact that some students were encouraged to finish the task outside the classroom at their leisure. This result supports the student characterization of "easy" to described use of the Word app for the writing process.

Similarly, most of the learners found it to be useful even though most of them did not have previous experience using them in high school. Another reason to explain their motivation in employing the MALL approach for future courses is that most students demonstrated a willingness to continue using their mobile phones for learning purposes in other courses. This suggests that mobile phones in ESL/EFL class can motivate and encourage students to use these devices for educational purposes and help them discover their potential for facilitating the learning process. Harmer (2012) argued that "teenage students can be incredibly creative-offering ideas, energy, and enthusiasm. We need to direct that creativity, pointing them in the right direction and helping them to focus on how to make TASKS manageable" (p. 91). It can be argued that mobile-learning can create an authentic environment for ESL/EFL learners, one that is accessible, enjoyable, and flexible.

To prepare students for the 21st century, it is important to equip them with skills that will help them become self-sufficient learners with useful self-revising and self-editing strategies. Studies on self-assessment reveal that students -when given proper training- are capable of analyzing and responding to their writing (Peñaflorida, 2002). They also show that students can improve their grammar and punctuation when given proper training on certain self-edit applications (Al-Wasy & Mahdi, 2016). However, one limitation of this study is that students were given only one

session to test the effectiveness of utilizing smartphones in enhancing writing skills and therefore lacked sufficient time to practice their self-editing skills.

Another strategy for future exploration is the incorporation of digital peer collaboration. Study observation notes showed that although most students were able to complete their online writing tasks, students continued to seek help from their peers as previously mentioned in the observation result section. This implies that peer collaboration is increased when technology is involved in the classroom. Students can act confidently in their comfort zones by sharing their technological knowledge with less digitally-competent students. These devices can be considered as a common language among this Generation Z by allowing humans to communicate fluently and share their understanding on the usage of mobile phones for technical problems; that said, not all students are fully competent in terms of mechanics or word choice. This implies that mobile phones can still increase motivation levels among students to help their peers in completing tasks.

Nonetheless, technology could hinder the students writing process: For example, some students did not submit their final draft due to technology frustrations and language problems. These participants described the writing task as "difficult," according to questionnaire results. It is implied, then, that technology can sometimes lead to frustration, which can be evident when technology fails.

Undoubtedly, more studies should be conducted to examine further the potential effectiveness of mobile-assisted language learning in enhancing student writing skills among ESL/EFL students. First, subjects in this study showed their willingness and enthusiasm to use the mobile language-learning approach in their writing class combined with the traditional process writing approach. However, future research should examine whether student writing skills would improve when utilizing a more eclectic approach; that is, the method would combine two writing methods, which could be more beneficial to students. This could help address the limitation of this study is experimenting with other writing approaches and integrating them in the writing tasks. Second, other studies should be performed on different English language level courses to test how students at upper-intermediate and/or advanced levels can benefit from this integrated writing approach. Also, this was a 5-week research study consisting of forty female intermediate-level Arab students at Kuwait University. Longer-term studies on this topic should be undertaken to investigate a more integrated approach, and it would be useful to study mixed or all-male classes as well.

Conclusion

The findings of this research imply a positive effect of the mobile-assisted language learning approach on student writing skills; MALL improves the content and grammar aspects of ESL Arab learners; nevertheless, these students were also less likely to improve their writing skills in mechanics and word choice aspects via mobile phone technology. It is important to address that other studies can explore whether student mobile interaction can lead to positive effects on spelling, capitalization, punctuation and word choice by designing intensive tasks to develop

these language skills. It can be argued that being skilful at using technology does not necessarily mean that digital natives are good at using mobile phones for academic purposes. Therefore, it is strongly recommended that additional intensive online grammar activities are to be incorporated into writing classes to increase student performance on mechanics and word choice. In addition, study skill courses, e.g. courses on digital skills for academic and ESL/EFL purposes, may help first-year students in becoming "self-sufficient learners."

This study provides positive implications for students and teachers. On the student level, mobile phones enable students to become more involved in the writing process. Not only do students manage tasks more efficiently with MALL, but peer collaboration and learner autonomy are also encouraged. On the teacher level, MALL can provide instructors and researchers with ample opportunities to evaluate both the old and new techniques applied in the ESL/EFL classroom. It is highly recommended that English language instructors further explore possibilities of smartphones technology in the classroom and not to feel intimidated when integrating the MALL approach with their ESL/EFL students. Overall, this study shows the powerful role of MALL in enhancing student writing skills, simultaneously motivating users to engage in the writing process and increase their autonomy. The mobile-assisted language learning approach can pose new challenges in some academic settings. However, with collaborative efforts and careful planning, it can lead to practical and innovative strategies for the 21st-century learner.

References

Aghajani, M., & Zoghipour, M. (2018). The Comparative Effect of Online Self-Correction, Peer-correction, and Teacher Correction in Descriptive Writing Tasks on Intermediate EFL Learners' Grammar Knowledge The Prospect of Mobile Assisted Language Learning (MALL). *International Journal of Applied Linguistics and English Literature*, *7*(3), 14–22. doi: 10.7575/aiac.ijalel.v.7n.3p.14

Ahmed, F. E. (2019). Errors of Unity and Coherence in Saudi Arabian EFL University Students' written Paragraph: A Case Study of College of Science & Arts, Tanumah, King Khalid University, Kingdom of Saudi Arabia. *European Journal of English Language Teaching,7*(4), 125-155.

Al-Hamad, R. F., Al-Jamal, D. A., & Bataineh, R. F. (2019). The Effect of MALL Instruction on Teens' Writing Performance. *Digital Education*, (25), 289–298.

AlTameemy, F., & Daradkeh, A. (2019). Common Paragraph Writing Errors Made by Saudi EFL Students: Error Analysis. *Theory and Practice in Language Studies,9*(2), 178-187. doi:10.17507/tpls.0902.07

Al-Wasy, B. Q., & Mahdi, H. S. (2016). The Effect of Mobile Phone Applications on Improving EFL Learners' Self-editing. *Journal of Education and Human Development,5*(3), 149-157. doi:10.15640/jehd.v5n3a16

Dokchandra, D. (2018). The Effects of Process Writing Approach on Performance of an Overcrowded EFL Writing Class at a University in Thailand. *KnE Social Sciences & Humanities,3*(4), 161-173. doi:10.18502/kss.v3i4.1931

Ferris, D. (2002). Teaching Students Self-Edit. In J. C. Richards & W. A. Renandya (Eds.), *Methodology In Language Teaching: An Anthology of Current Practice* (pp. 328–334). Cambridge: Cambridge University.

Folk, M. (2016). Kairotic Aurality: Audio Essays, QR Codes, and Real Audiences. In *Mobile Technologies and the Writing Classroom: Reasons for Teachers* (pp. 36–51). US: The National Council of Teachers of English.

Ghorbani, N., & Ebadi, S. (2020). Exploring learners' grammatical development in mobile assisted language learning. *Cogent Education,6*(1), 1-14. doi:10.1080/2331186x.2019.1704599

Harmer, J. (2012). *Essential teacher knowledge: core concepts in English language teaching*. Harlow: Pearson.

Hedge, T. (2010). *Writing*. Oxford: Oxford University Press.

Imelda, Cahyono, B. Y., & Astuti, U. P. (2019). Effect of Process Writing Approach Combined with Video-Based Mobile Learning on Indonesian EFL Learners' Writing Skill across Creativity Levels. *International Journal of Instruction, 12*(3), 325-340. doi:10.29333/iji.2019.12320a

Jalaluddin, I. (2019). Process approach in teaching of ESL writing: Teacher's assistance and its practicality in real classroom. *Journal of Research, Policy & Practice of Teachers & Teacher Education, 9*(2), 66-78. doi:10.37134/jrpptte.vol9.no2.6.2019

Jassim, L. L., & Dzakiria, H.(2019). The Effects Of Utilizing Mobile On Developing English Writing Skill. *Opción, 19*, 2128–2143.

Khodabandeh, F., Alian, J., & Soleimani, H. (2017). The effect of MALL-based tasks on EFL learners' grammar learning. *Teaching English with Technology, 17*(2), 29-41.

Kukulska-Hulme, A., Lee, H., & Norris, L. (2017). Mobile Learning Revolution: Implications for Language Pedagogy. *The Handbook of Technology and Second Language Teaching and Learning*, 217–233. doi:10.1002/9781118914069.ch15

Larsen-Freeman, D. (2001). Grammar. In R. Carter & D. Nunan (Eds.), *The Cambridge Guide to Teaching English to Speakers of Other Languages* (pp. 34–41). Cambridge: Cambridge University.

Lutkewitte, C. (Ed.). (2016). *Mobile Technologies and the Writing Classroom: Resources for Teachers*. US: National Council of Teachers of English.

Mauricio, M. C., & Genuino, C. F. (2020). Writing Performance and Attitude of ESL Learners Engaged in Smartphone Assisted Collaborative Activity. *LEARN Journal: Language Education and Acquisition Network Journal, 13*(2).

Miangah, T. M., & Nezarat, A. (2012). Mobile-Assisted Language Learning. *International Journal of Distributed and Parallel Systems (IJDPS), 3*(2), 309–319.

Moore, J. L., Rosinski, P., Peeples, T., Pigg, S., Rife, M. C., Brunk-Chavez, … B., Grabill, J. T. (2016). Revisualizing Composition: How First-Year Writers Use Composing Technologies. *Computers and Composition, 39*, 1–13. doi: 10.1016/j.compcom.2015.11.001

Nuruzzaman, M., Islam, A. B., & Shuchi, I. J. (2018). An Analysis of Errors Committed by Saudi Non-English Major Students in the English Paragraph Writing: A Study of Comparisons. *Advances in Language and Literary Studies, 9*(1), 31-39. doi:10.7575/aiac.alls.v.9n.1p.31

Othman, A. K. (2019). Investigation of Grammatical Cohesive Devices Errors Made by Saudi EFL Students in Written Paragraphs: A Case Study of the University of Tabuk, Saudi Arabia. *European Scientific Journal ESJ, 15*(2), 1-10. doi:10.19044/esj.2019.v15n2p1

Papilaya, R. (2018). *Effect of process approach combined with internet resources through mobile phone on EFL students' ability in writing*. Malang: Universitas Negeri Malang.

Pegrum, M. (2014). *Mobile Learning: Languages, Literacies, and Cultural New Learning Learning and Teaching Environments*. NZ: Palgrave.

Peñaflorida, A. H. (2002). Nontraditional Forms of Assessment and Response to Student Writing: A Step Toward Learner Autonomy. In J. C. Richards & W. A. Renandy (Eds.), *Methodology In Language Teaching: Anthology of Current Practice* (pp. 344–353). Cambridge: Cambridge University.

Rao, P. S. (2019). The Use of Mobile Phones In The English Classrooms. *Academicia: An International Multidisciplinary Research Journal, 9*(1).

Reid, J. (2001). Writing. In R. Carter & D. Nunan (Eds.), *The Cambridge Guide to Teaching English to Speakers of Other Languages* (pp. 28–33). Cambridge: Cambridge University.

Richards, J. C., & Renandya, W. A. (2002). *Methodology in language teaching: an anthology of current practice*. New York: Cambridge University Press.

Sendurur, E. (2020). A Guide for Mobile-Assisted Language Learning in Informal Setting: Pedagogical and Design Perspectives. In R. Ahmed, A. Al-Kadi, & T. Hagar (Eds.), *Enhancements and Limitations to ICT-Based Informal Language Learning: Emerging Research and Opportunities* (pp. 24–53). PA: IGI Global.

Seow, A. (2002). The Writing Process and Process Writing. In J. C. Richards & W. A. Renandya (Eds.), *Methodology in Language Teaching: An Anthology of Current Practice* (pp. 315-320). Cambridge: Cambridge University.

Siddique, M., & Nair, S. M. (2015). The Effectiveness of Using Mobile Phone in Enhancing Writing Skills: Teacher's and Students' Reflections. *Australian Journal of Basic and Applied Sciences*, *9*(37), 390–396. Retrievedfromhttps://www.researchgate.net/publication/309487330_The_Effectiveness_of_Using_Mobile_Pho ne_in_Enhancing_Writing_Skills_Teacher's_and_Students'_Reflections.

Acknowledgements

Funding

Ethics Declarations

Competing Interests

No, there are no conflicting interests.

Rights and Permissions

Open Access