

Effectiveness of Mobile Learning to Improve Letter Writing Skills Through Scaffolding Using WhatsApp – A Study on Working Adults

VG Chinthaka Naleen

Faculty of Information Technology, University of Moratuwa, Sri Lanka.

Abstract

Mobile learning has made a huge impact on technology assisted learning and research during the last two decades. However, a need exists to focus attention on adult learners who are restricted from accessing the conventional learning process due to lack of time and other family/official responsibilities. According to available literature on mobile learning, (Ling, Ahmad, & Hashim, 2018; Elaish, Shuib, Ghani, & Yadegaridehkordi, 2017; Traxler, 2017) teaching English as a second language to working adults using m-learning has not been researched and this study intends to contribute to knowledge in this context.

This study was carried out using an exploratory research methodology. Interventions were designed as individual/group work and tests by the researcher to sustain the m-learning process with scaffolding. A convenience sample (n=62) of government workers aged 25 to 45 was used with the application of mixed method. Brief questionnaires were used as mode of ratings, with proficiency and progressive tests. In addition, questionnaires, observations and structured interviews together with unstructured interviews in the form of personal conversation were administered for data collection. A Mobile Learning Environment (MLE) facilitated by WhatsApp was used as the communication interface with access to web-based Google forms. The MLE was used to write letters and revise grammar/vocabulary. The results revealed that while m-learning helped them learn at ease, major barriers such as the inability to find time to participate in a conventional class and low self-confidence can also be overcome using m-learning. The learners were able to maintain their participation by adapting study time to suit their free time. Interventions proved to be effective multimedia facilities that could be easily accommodated in the MLE. Further, analysis of tests showed a considerable improvement.

Limitations such as less mobile literacy, time constraints, and lack of confidence did not hinder the progress of the study.

Key Words: mobile learning, working adults, scaffolding, writing official letters

Introduction

Though UNESCO report on the *Future of Mobile Learning* (Carly, Niall, & Mark, 2013) declared that mobile learning can ensure the learning needs of the young and adults through equitable access and *TESOL Research Agenda* (TESOL, 2014, p. 10) emphasized on the higher potential of mobile technology and its effectiveness as a teaching/learning tool for both young and adult learners, most of the mobile learning researches have been based on university and technical college students (Elaish *et al.*, 2017) and the population of working adults has been disregarded. A survey was carried out to cater to a request from a group of working adults to conduct a class to improve their writing skills. The results revealed that there were several hindrances such as unavailability of time due to family and workplace responsibilities and also their reluctance to attend teacher centered conventional classes due to lack of motivation and confidence.

While analyzing the requirements and feasibility with respect to the above mentioned restrictions, it was understood that these adult workers had a necessity to improve their official letter writing skills. Hence, in this study, it was decided to use m-learning sessions with the selected group of adult workers with the intention of improving official letter writing skills through WhatsApp using scaffolding, to find out the effectiveness of mobile learning in the given context.

The following specific questions were used to conduct the research systematically:

- What are the prevailing factors that motivate/demotivate working adults on improving their writing skills in English?
- What are the ways of using mobile applications/tools to effectively enhance the level of confidence, participation and improvement in their letter writing skills?

Review of Literature

A recent study “*Learning with Mobiles in Developing Countries,*” Traxler (2017) mentioned about the increased interest in mobile learning amongst international agencies and donor community. Traxler further stated that there is an increased emphasis on literacy and other basic skills amongst mobile learning projects in the developing world. Another case study on EFL learners by Avci and Adiguzel (2017) to explore the effects of using mobile instant messaging application concluded that, students favored improving their integrated language skills by getting involved in a variety of learning experiences. However, out of 133 articles published related to mobile learning of English language between 2010 and 2015 (Elaish *et al.*, 2017), 110 articles were related to universities and schools while there was no clear evidence about its effectiveness on adult learners. The only related publication was a recent survey on working adults in Malaysia (Ling, Ahmad, and Hashim, 2018) where the authors concluded that presently, the Malaysian working adults were not ready for learning. Thus, there is a significant gap of research in mobile learning on working adults.

A study by Sampurna, Kukulska-Hulme, and Stickler (2018) revealed that their non-formal, voluntary project failed to engage the majority of participants in active production of the project output. It was often cited that high-stake university assignments were the main barrier for contributing to their groups. This could be same with working adults as they are engaged in a lot of activities related to their family and professional life. A literature review prepared on Adult Learning for the European Commission declared “flexibility afforded by mobile learning, which makes learning possible from any location at any time, can encourage learners to take more responsibility in directing and managing their own education” (Hylén, 2015, p. 3). This statement would be the best example to support the relevance and feasibility of expected m-learning projects.

Another important observation (Klein, Da Silva Freitas, Da Silva, Barbosa, and Baldasso, 2018) was that the interactions through WhatsApp helped to reduce the distance between students and lecturers and also to unite the class. Gon and Rawekar (2017) suggested WhatsApp as a new and convenient tool for teaching learning activity. According to a survey by *Business Insider* (Hartmans, 2018), WhatsApp held third position as the most downloaded iPhone application in the world, while Price (Price, 2018) shows that WhatsApp has been placed third in the most popular Android app in the Google Play Store claiming 3.408 billion downloads. These statistics justify the appropriateness of WhatsApp as a tool for m-learning.

According to the above mentioned literature, there were numerous researches conducted on m-learning globally with the intention of discovering its significance to language teaching. However, there is necessity for researches on adult learners and the large gap of research on working adults. This research intends to be the first attempt in the context of teaching English as second language for working adults using the WhatsApp.

Theoretical Framework

The Zone of Proximal Development (ZPD) by Lev Vygotsky

According to Vygotsky, the zone of proximal development is, "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers." (Vygotsky, 1978, p.86). For example, at the beginning of a course, a learner might not be able to do something on his/her own, but he/she is able to perform the task with the assistance of a skilled instructor or with a peer who possesses that knowledge, as shown in **Figure 1**¹.

In the context of m-learning, this process will be ideal as personal interactions using private messaging (PM) is possible with contrast to traditional class setting. Therefore, the m-learning setting would allow the student to be more confident as the students are privileged to contact the conductor of the m-learning sessions to clarify any matter with the guaranteed privacy. That is an advantage of scaffolding in m-learning setting.

¹ Source : <https://www.niu.edu>

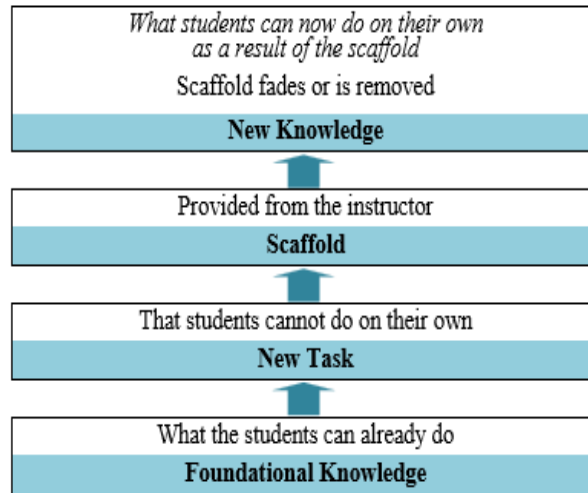


Figure 1 : An illustrative model of scaffolding

Framework for the Rational Analysis of Mobile Education (FRAME) by M. L. Koole

For this research, a modern theory, Framework for the Rational Analysis of Mobile Education (FRAME) is used. Though the FRAME theory was presented after 31 years of ZPD, these two theories well combine with each other. A brief account of FRAME theory extracted from the chapter titled *A Model for Framing Mobile Learning* (Koole, 2010) is discussed below. **Figure 2²** shows the classification of each basic aspect and derived aspect toward effective mobile learning.

The **Device Aspect (D)** refers to the physical, technical, and functional characteristics of a mobile device such as size, weight etc. The **Learner Aspect (L)** takes into account an individual’s cognitive abilities, memory, prior knowledge, emotions, and possible motivations. The **Social Aspect (S)** takes into account the processes of social interaction and cooperation such as social constraints, quality of relationship between peers and teacher.

The **Device Usability intersection (DL)** relates characteristics of mobile devices to cognitive tasks related to the manipulation and storage of information. The **Social Technology intersection (DS)** describes how mobile devices enable communication and collaboration amongst multiple individuals and systems. The **Interaction Learning intersection (LS)** represents a synthesis of learning and instructional theories but relies very heavily upon the philosophy of social constructivism.

Effective mobile learning (DLS) provides an enhanced cognitive environment in which distance learners can interact with their instructors, their course materials, their physical and virtual environments, and each other. These factors help to understand the context and was an important feature in the research.

² Source : <https://mobilelearninginfokit.pbworks.com>

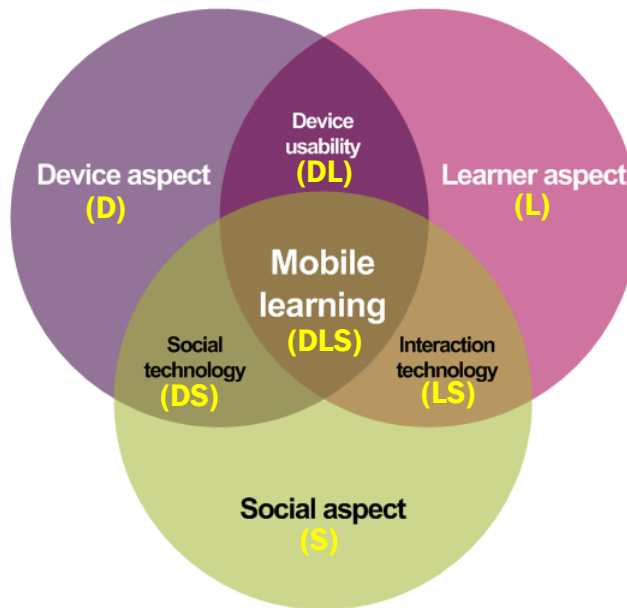


Figure 2 : The FRAME model

Research Methodology

Sample

A group of working adults from the government sector was selected for the sample. A convenience sampling method had to be used as several parameters had to be considered with the participants, such as, availability of an android or iOS supported device and basic literacy in using a smart phone. Sample was formed including at least one staff member from each department. The sample initially consisted of 62 participants within the age range of 25 to 45 with 13 males and 49 females.

Exploratory Research Methodology

Since, there was no current researches related to the area of this study, there was a need to understand the behavior of a mobile learning session in the given context of working adults. Therefore, an exploratory research method was adhered to as the methodology of the study. Another notable change adhered to in this research was that instead of pure exploratory research methodology, interventions were adhered to get the maximum results.

Mobile Learning Environment (MLE) and Content Development

WhatsApp group was created and was used as the Mobile Learning Environment (MLE). Google forms, screen prints, images or portable document files were used to give information about the lessons. Tests and questionnaires were accessible through links pasted in MLE. Members were added to the MLE either by the Administrator (the researcher) or the representatives of each department and each participant was briefed about the activities of the MLE prior to adding them on to the MLE. Group Administrator has the privilege to assign a representative and remove or suspend a member in case of violation of ethics. Every group member has the privilege of leaving the group at any time as voluntary participation was guaranteed. An in-depth description of the design of the research is shown in the **Figure 3**. Different level of communication using MLE, such as common interface (visible to all the members), personal messaging and group communication, are depicted in **Figure 4**.

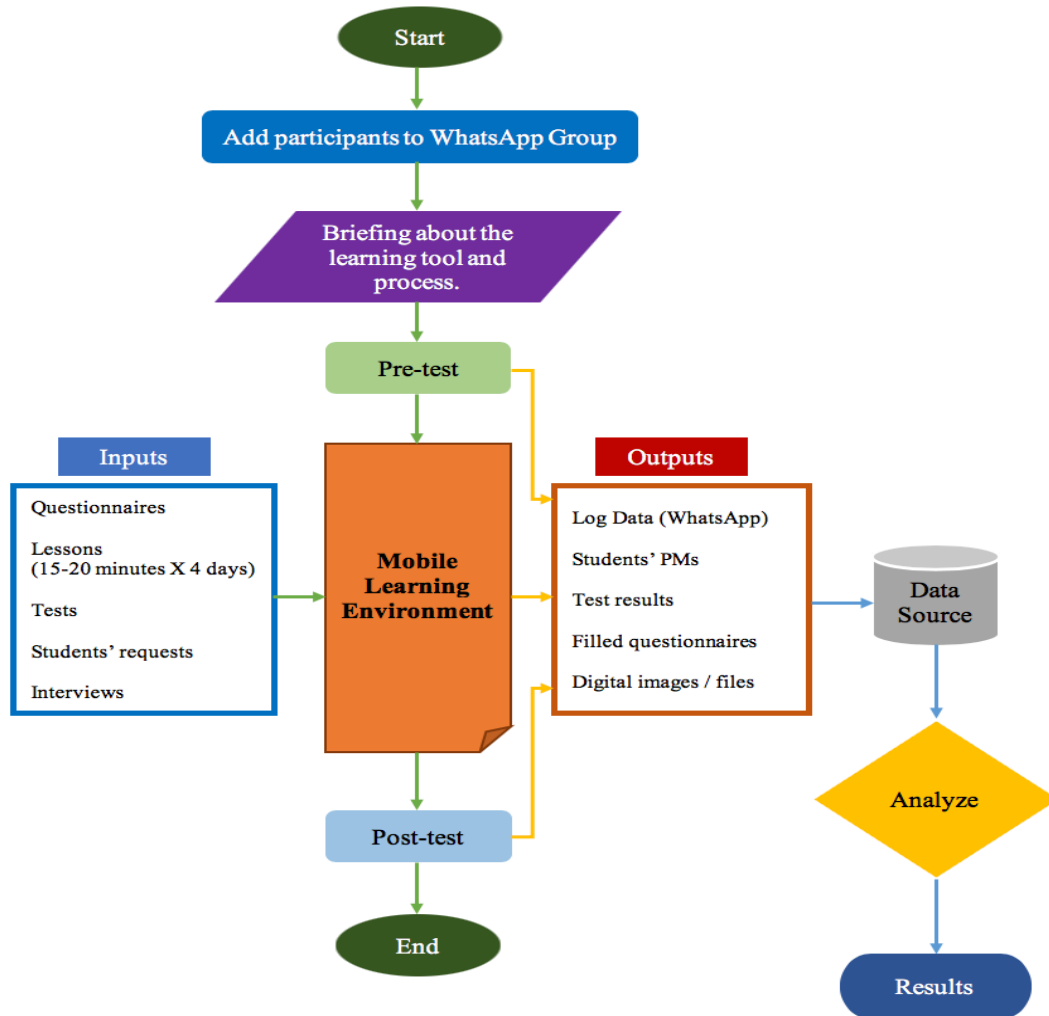


Figure 3 : Design of the research

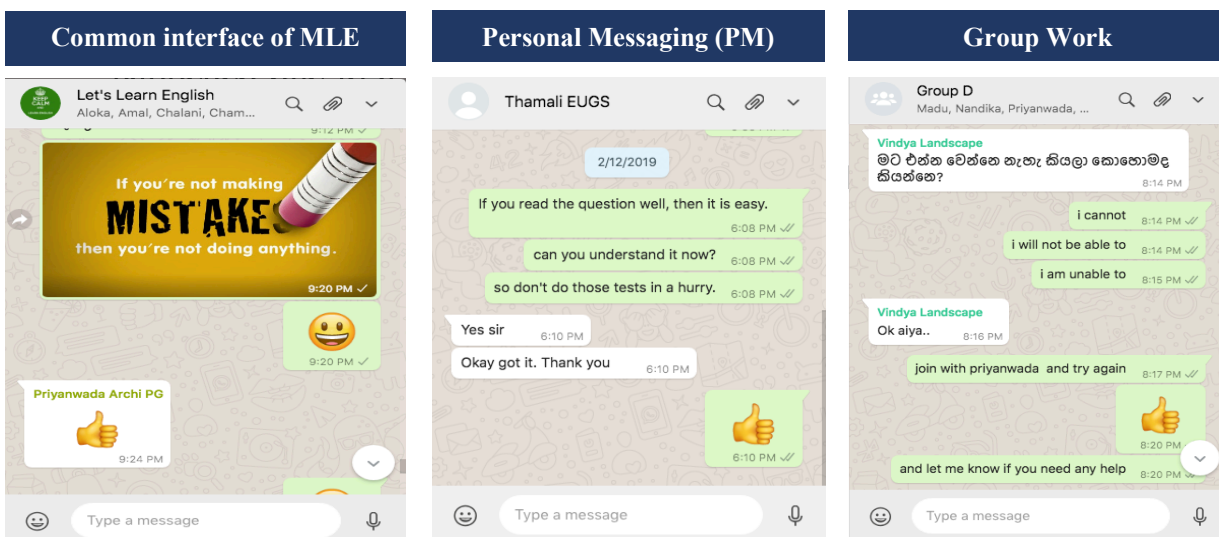


Figure 4 : Different levels of communications over MLE

At the request of the learners, the lessons were 15 to 20 minute sessions per day and an average of four lessons per week were delivered along with a short test for each lesson which has about 10 questions. Communication through the MLE were recorded. In addition to these test results, data related to filled online questionnaires was saved in the Google Drive³ and any other images, portable document files were directed to the download folder of WhatsApp. Those locations acted as the Data Source. Data gathered was saved and analyzed using Microsoft Excel excluding the processed data in Google forms.

Data Collection

A mixed method was used for data collection as there were both quantitative and qualitative data. *Brief questionnaires* were used to get immediate feedback for tests (ratings) and *specific questionnaires* were used to identify their level of education, attitude and prevailing issues related to learning language. *Structured Online Interviews* were used to discuss the matters regarding MLE. *Unstructured interviews* in the form of personal conversations with learners and *Observations* on the activities in MLE along with the way each one has performed were done.

Pre-test and Post-test

Pre-test and post-test were conducted with the supervision of representatives from each department. The representatives did the test with the supervision of the Administrator of the group. It was decided to use this process to be flexible with the members. For the pre-tests, each member was requested to draft a letter on a given situation and keep a hard copy of the letter to be handed over to the Administrator. Same procedure was adhered for the post-test.

Results and Discussion

Questionnaire 01 was given at the early stage to gather information about their skills and attitude while Questionnaire 02 was administered at the latter part to find out whether the intended results have been achieved through MLE.

The results of Questionnaire 01 show that their present level of English writing, especially letter writing, needed to be improved (Figure 5 & 6) and the early assumption that most learners are unable to use or attend a traditional classroom has been confirmed (Figure 7) as the convenient time for 85% of them falls between 8 pm to 12 am. Therefore, it is clear that a methodology like mobile learning is best suited to cater to these working adults.

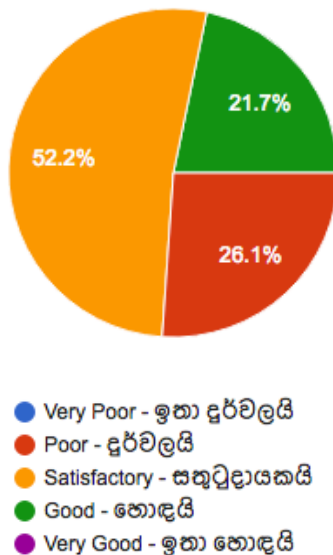


Figure 5 : Learners' present level of writing skills

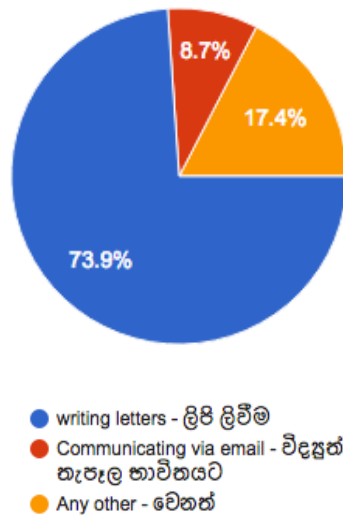


Figure 6 : Purpose of improving English writing skills

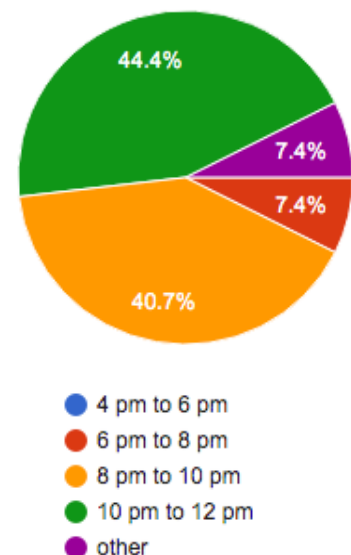


Figure 7 : Time slots available for the learners to use MLE

³ A file storage and synchronization service developed by Google

Furthermore, Questionnaire 1 shows that fear of making a mistake was a major demotivation factor while lack of opportunity too was rated highly as a demotivating factor (Table 1). Lack of appreciation and motivation are other issues faced by the learners. However, earlier assumptions that the students have no time and resources seem to be not valid.

	Percentages (%)				
	Strongly Agree	Agree	No idea	Disagree	Strongly Disagree
fear of making mistake	7.7	84.6	0	3.8	3.8
not confident	3.8	80.8	11.5	0	3.8
lack of appreciation/encouragement	15.4	42.3	19.2	23.1	0
lack of time	0	7.7	7.7	61.5	23.1
no opportunity to join a class	7.7	65.4	0	19.2	7.7
lack of resources	0	7.7	11.5	42.3	38.5

Table 1 : Summary of information by Questionnaire 1

Consequently, Questionnaire 2 depicted that MLE has provided ample opportunity for the learners and they are no more afraid of making mistakes and have been encouraged to use the MLE or PM to express their views (Table 2). Even though it is shown that a percentage of 3.7% disagreed, it is necessary to further investigate and make sure that no one was left unattended in the process of learning. In addition, the learners agree with the fact that learning is more interesting, and they are given more opportunities. This shows the effectiveness of constant scaffolding as a motivating

	Percentages (%)				
	Strongly Agree	Agree	No idea	Disagree	Strongly Disagree
not afraid of making mistakes	37	63	0	0	0
m-learning group increased my confidence	18.5	70.4	11.1	0	0
received more encouragement	14.8	74.1	7.4	3.7	0
learning is more interesting	40.7	59.3	0	0	0
group work give more opportunities	7.4	81.5	11.1	0	0
tests are effective	14.8	85.2	0	0	0

Table 2 : Summary of information by Questionnaire 2

factor. All the learners who have responded have improved their confidence and are interested in the learning process. This was an important outcome as one of the main objectives of this research is to find out whether the confidence of the learners could be increased using m-learning. Results of the tests also show that there is an improvement (Table 3). A summary of performance of the 25 learners who completed the pre-test and post-test is shown in Table 4 and 5.

Test Number	No. of Questions	Average	Median	Range
01	10	6.45	6	2-9
02	11	5.78	6	1-8
03	10	6.61	9	0-10
04	10	6.25	7	1-10
05	15	11.15	11	7-14

Table 3: Summary of test scores

Information depicted in the Table 4 and 5 shows that though there are improvements in all aspects, some learners still need further improvement.

	Excellent	Very Good	Satisfactory	Needs Improvement
Format	1	2	13	9
Body (Content)	2	2	8	13
Grammar and Spelling	2	2	11	10
Language/Audience	1	3	8	13
Mechanics	1	4	10	8

Table 4 : Analysis of performance in pre-test

	Excellent	Very Good	Satisfactory	Needs Improvement
Format	5	7	10	2
Body (Content)	9	11	5	0
Grammar and Spelling	6	5	8	6
Language/Audience	4	6	10	5
Mechanics	5	10	8	2

Table 5 : Analysis of performance in post-test

Discussion

As Fattah (2015) observed with university students, these working adults also develop writing skills as well as enhance **active participation** using MLE. With respect to **attitude and motivation**, the sample was **satisfied** with using mobile devices for learning process and positive towards technological affordance. This can be further combined with the study of Allagui (2014) as the sample has **changed their attitudes** and ended up with a positive mindset. There was a considerable number of inactive members. As mentioned by Attwell (2007), lack of support and **scaffolding** can be a gap in mobile learning sessions as there were considerable learner requests. However, as Amry (2014) stated, mobile lessons seem to be **more effective than face-to-face sessions** as the majority of learners were reluctant to involve themselves with the face-to-face discussions. It was minimized in the mobile learning environment with the use of personal requests and scaffoldings which **increased their confidence**. As this research started in 2018, the statement of Ling, Ahmad, and Hashim (2018) that the adult population is not ready for m-learning at the moment is **not a valid statement according to this context**. Reason for their decision probably be according to the context, geographical and cultural aspects as that need survey was done in Malaysia.

Conclusions and Recommendations

Conclusions

Though there is a huge need to conduct researches on the applicable factors of m-learning on working adults, it has been an untouched area for decades. The importance of this study is that even for the purpose of study of the literature there were not enough studies on adult learners unless they were adult students of a particular university or technical/vocational institute. Thus, this research intended to fill a long-awaited gap in mobile learning on working adults. The reason for the prevailing gap may be due to inconveniences in working with people with different levels of knowledge with respect to university/college students who were in the same age group as well as their locations and basic knowledge. The findings of this study show that working adults have the necessity for the advantages of mobile learning much more than others as most of them face practical problems of attending a conventional class as well as the fact that a considerable number of working adults do not prefer that environment. Thus, m-learning can be highly facilitated for them despite the issue of mobile literacy. Therefore, the effectiveness of mobile learning on working adults with scaffolding using mobile technology to assist them on official letter writing was successfully applied to the selected sample and their motivation and confidence were considerably improved towards m-learning with the use of MLE.

Limitations of the Study

Some staff members who willingly joined the MLE never responded thereafter which shows that there is not only the lack of digital literacy but also the reluctance to change the way of trends. They further mentioned that it took some time for them to adapt to the MLE which could be acceptable. Time constraints was a major limitation for this short-lived project. None of the members in the sample had earlier experiences in mobile learning which made it difficult to convince them about the advantages of mobile learning sessions. Some were much concerned about mobile data usage due to their ignorance and it had to be clarified. The researcher came across opinions of a few staff members who strongly denied the possibility of having a mobile session to successfully teach any form of English.

Directions for the Future Researches

As this study appears to be the first in line and only focuses on official letter writing, there are ample opportunities for future researchers to research on the other three aspects of listening, reading and speaking. Selecting the technology and the tools solely depend on the sample and other variables such as region, social status etc. Therefore, further studies can be conducted to find the significance of a particular m-learning tool or compare a few m-learning tools to find out the best suited one for a certain group of learners. There is a need of having samples which have participants from different geographical locations and at present this research has been extended to a group of working adults from Thailand and the Philippines.

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