EFL Learners' Attitudes toward the Use of Mobile Assisted Language Learning (MALL)

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Abstract

Is educational technology a panacea for language learning in the EFL context? This study aimed to understand EFL learners' attitudes toward the use of MALL (Mobile Assisted Language Learning) and compare the differences between EFL learners with different disciplines. A questionnaire, a five-level Likert scale with close-ended questions, was conducted to anonymously investigate 192 EFL university learners' perspectives about MALL as well as the actual use of MALL. Results of the data analysis revealed that (a) most of them used MALL for knowledge and preparing for tests. (b) While learning without time and place restrictions was generally the most favorable, several serious disadvantages about using MALL were revealed as well, including distraction from other entertainment applications in the mobile phone, followed by the physical fatigue. (c) Most of them used the mobile phone and laptop as their learning devices. Further analysis for comparisons between the learners with different disciplines indicated that (i) More English-majors used MALL mostly for getting knowledge, while most of the non-English majors used it to prepare for the tests (e.g. listening and reading). However, (ii) more non-English majors felt concerned about such technical disadvantages as small screen, unsteady network, limited battery charge, and limited memory size. Besides, more of them than the English-major counterparts used other devices, such as iPod and iPad, as learning tools. Moreover, more non-English-majors reported that their teachers used mobile devices to assist language teaching. Ultimately, several pedagogical implications and suggestions for the technical developments for MALL were provided.

Key words: Mobile Assisted Language Learning (MALL), EFL learners, attitudes

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1. Introduction

Mobile Assisted Language Learning (MALL) refers to any type of language learning that takes place with the help of portable devices. MALL is different from computer-assisted language learning in its use of personal and portable devices. Its advantage, such as its availability or lower cost, was emphasized by Cinnery (2006), compared to the use of Computer Assisted Language Learning (CALL). It enables new ways of learning access and interaction across contexts of use (Kukulska-Hulme & Shield, 2008). MALL is available through numerous devices including mobile phones, iPods, tablet PCs, hand-held computers, PDAs, MP3 players, smartphones and more (Valarmathi, 2011). The ubiquitous availability of portable devices, including mobile phones, laptops, tablets, and multimedia players has changed the foreign language instructional methods and learning strategies for the students in the modern world (Abdous, Camarena & Facer, 2009).

In recent years, the supporters for MALL claimed that its advantages such as portability and just-in-time learning have played the primary role in helping language learning (Hashemi, Azizinezhad, Najafi, & Nesari, 2011). The device PDAs, for instance, is lighter than books, enabling the students to take notes or save data conveniently and directly. The applications in the mobile phone also facilitate learners' looking up the vocabulary by using the online dictionaries, such as Google Translation and EC Dictionary. In this way, it provides the learners the opportunity to take advantage of their free time for learning. People can be accessible to language learning by using the devices while travelling to and from work, having a lunch break, or waiting for friends somebody (Rodríguez-Arancón, Arús, & Calle, 2013). With regard to language learning, according to Hadi and Emzir (2016), MALL makes the students become more active in their speech and their English speaking ability was significantly improved.

Despite its advantages, there are still some concerns about the use of MALL because a question was aroused: Is technology a panacea for all our problems for language learners in the EFL context? Although the previous researchers have studied various applications of MALL to English learning, few of them discuss how the actual users think about MALL. How do the EFL learners think about the use of MALL? Are there any differences between the students with different academic disciplines? Are there different attitudes between the students with different majors towards the use of MALL? Therefore, the purpose of this study was to investigate the EFL learner's attitudes towards the use of MALL. A further study was done to examine the different opinions between the students with different academic disciplines.

The findings of this paper might be helpful for the web designers or technicians by providing a better and broad understanding of MALL. With more effective devices, the voices from the EFL learners could help them to eliminate the drawbacks in terms of the functions of MALL by taking the learners into considerations. In addition, the implications from this paper might be able to help teachers choose the appropriate mobile assistant devices for their students. Also, the EFL learners could refer to this study and understand the advantages and disadvantages of MALL before they decide to use certain applications. Hopefully, the results of this study might help them become more effective English language learners.

Specifically, the research questions for this study are addressed as follows:

1. What are the EFL learners' purposes of using MALL and their attitudes toward MALL?
2. Are there any differences in attitudes between English majors and non-English majors towards the use of MALL?

2. Literature Review

In the 90s, educational technology continued to develop in the universities in Europe and Asia, where the possibilities of m-learning were greatly evaluated. Since the year 2000, the European Commission has financed large domestic companies in the creation of contents development projects (Rodríguez-Arancón, Arús, & Calle, 2013). Several previous researches indicated the advantages of MALL. Kukulska-Hulme (2009) suggested that the major outstanding characteristics of MALL is its mobility, in addition to the possibilities of shifts in spatial and time, creating more learning opportunities. Moreover, mobile phone is superior to the computer in its portability. It can be just as easily utilized outside of the classroom. Learners can study or practice a variety of information in any place, thereby taking advantage of its convenience (Valarmathi, 2011). In other words, mobile devices can be used at any time and any place—as long as the students carry their devices, the time and space constraints resulted from the formal language learning can be greatly reduced (Chen,2013). Thus, they offer more flexible informal learning opportunities.

Furthermore, in Lee, Lee, and Kweon's study (2013), the mobile phone has also been proven to bring benefits for the students. They can access educational content or e-book and textbook through their mobile phone anywhere and anytime. The students in the university can learn anywhere and anytime as long as they bring their mobile devices that provide them access to learning. These findings are consistent with those of previous studies, such as Kukulska-Hulme (2009) and Valarmathi (2011) and Chen (2013). It goes without saying that this promotes the trend of ubiquitous learning. For the students, it is more convenient to use the mobile devices than computers. MALL provides the chance for students to learn language anywhere. With its portability, MALL also stimulates the motivation of the students for learning.

Another feature of MALL is its collaboration (Corbeil & Valdes-Corbeil, 2007). According to Hashemi, Azizinezhad, Najafi, & Nesari (2011), MALL enables several students to work together on the assignments even though they are home distance away. The needs to collaborate between the students and teacher, or among the students, can be facilitated by the mobile phone since there are various applications that support the collaboration. Personalizing instruction and facilitating collaboration can also be achieved by means of the mobile phone. For those students, who have many schoolwork to do together after school with their classmates but live in different areas, MALL enables them to discuss with each other through the mobile devices.

While the mobile devices can support learning in class, but some argued that they have the potential to make the schools be eliminated and several groups explored this tension (Sharples, 2006). Some educators have been hesitant to embrace online-education, due in part to the questions about the soundness of its pedagogy (Hostetter & Busch, 2006). Although MALL is a convenient device for students to learn language, it is also a threat for teachers. When people are developing the technique of MALL, we should also consider about the relationship between teachers and MALL.

Despite its advantages mentioned in the previous research, MALL has its own constraints, such as small screen of mobile phones and PDAs, limited storage capacities in PDAs, and the battery life/charge (Miangah & Nezarat, 2012). Reading with the small screen for a long time will damage the eyes and with too much data in the mobile devices will cause the shortage of data storage. Today PDA and mobile phones still have limited memory size (Georgiev, Georgieva, & Smrikarov, 2004). The limited storage capacity (Hashemi, et al., 2011) is another problem that needs to be considered when using MALL. In addition, one of the disadvantages of MALL is the

battery life/ charge (Hashemi, et al., 2011). People cannot use cellphones for a long time if they run out of power. And also, if they are out of power, they are just like useless tools. It is necessary to charge the battery regularly.

In addition to the drawbacks in storage capacity or battery charge, M-learning may also be subject to piracy, plagiarism, cheating, inadequate selection skills, and inappropriate use of copy and paste (Perrin, Perrin, Muirhead, & Betz, 2015). With the development of MALL, some students will use it as a tool to cheat. Students will send the answer to others. In the future, people should think about how to prevent some students from using the mobile devices as an illegal tool.

In conclusion, the previous research has showed both positive and negative impacts in terms of the use of MALL. The positive aspects involve collaboration (Corbeil & Valdes-Corbeil, 2007) and portability (Valarmathi, 2011), a simulant for learning motivation and engagement. On the contrary, the problems include battery life/ charge (Hashemi, et al., 2011) and limited storage (Miangah & Nezarat, 2012). MALL has been gaining its popularity to be a subject of research throughout the world.

Although there have been studies on MALL in relation to education and other fields, there are relatively few pieces of research into the impacts of MALL on EFL language learning in the university context (Muhammed, 2014). This paper aims to fill this gap by looking into how MALL is used in the EFL learning context. Owing to the complexity of the EFL learning context, the study examined the perspectives of the EFL learners with different academic disciplines. The study aimed to reveal how the EFL learners think about the use of the mobile assisted language learning devices and how they actually use them, hoping that the findings could provide the suggestions for the teachers to choose the assisted devices for more effective teaching and learning.

3. Method

3.1 Participants

A total of 200 EFL learners, ranged from 19 to 21, at a technical university in the central Taiwan participated in this survey. They include 100 English majors and 100 non-English majors. After sorting the questionnaire data, 8 out of the 200 questionnaires were dropped as invalid copies, leaving 192 copies of the questionnaire remained for data analysis (96 English majors, 50 Aeronautical Engineering majors, and 46 Vehicle Engineering majors). The reason for choosing the students from different disciplines was because L2 learning posts a unique phenomenon due to its multifaceted nature and there are indications that disciplinary differences affects language learning including strategy choice, learning motivation, self-efficacy, and goal setting (Zafar & Meenakshi, 2012). The participants took part in the survey voluntarily. The cluster method of sampling was used for the selection of the participants in this study.

3.2 Questionnaire

The questionnaire was designed in both Chinese and English version. To avoid misunderstanding of the meaning due to the language barrier, the Chinese version was distributed to the participants as the tool for survey. Thus, it might be helpful for the data validity. The design of the questionnaire was based on the previous research and theoretical foundations on mobile-assisted language learning (e.g., Kukulska-Hulme & Shield, 2008; Stockwell, 2007; Stockwell, 2010; Wishart, 2008). The content of the survey was confirmed by the experienced researchers for content clarity. Several evaluation sessions were conducted and the content and layout of the questionnaire were improved significantly. In our study, background information was added at the top of the questionnaire to collect data of the learners' disciplines, frequency of using MALL, gender, and age.

Then, the 32-item survey is made up of four

sections with a five-point Likert scale format from strongly agree to strongly disagree. The first section realized English majors and non-English majors' purposes of using MALL, including getting more knowledge, preparing for the schoolwork, preparing for the test (e.g. TOEIC & GEPT) and so on. The second section investigated the English majors and non-English majors' perception of the merit of using MALL, regarding helping provide learning environment, enhance the efficiency of learning and learn without time limit. The third section examined those EFL learners' attitudes toward the disadvantages of using MALL, in terms of a small screen, an unsteady network and a battery charge. The last section was designed to understand how the English majors and non-English majors actually used MALL, such as using iPad, iPod or notebook to learn English. This aimed to reveal how they really did when exposed to the assisted devices in their daily life.

3.3 Data Collection Procedures

A questionnaire, a 32- item questionnaire with a five-point Likert- scale format, was used as the prime data collection instrument for searching the EFL leaners' attitudes toward the use of MALL. The participants were asked to reply in a scale of one to five to show how much they agreed on each item.

First, the participants were assured that the questionnaires were only used for the academic purpose and the responses were done anonymously. Thus, it might be helpful to let them answer the questions without any doubt. Before they started to answer the questions, they clearly understand the definition of MALL because of the explanation stated briefly at the top of the questionnaire. This might be helpful for increasing the reliability. All the procedures took about 15-20 minutes.

3.4 Data Analysis

Descriptive statistics and percentage were computed for the data. After sorting the questionnaire data, 8 out of the 200 questionnaires were incomplete and invalid. After eight invalid copies of the questionnaire were dropped, eventually, there were 192 copies of the questionnaire remained for data analysis. First, the data were analyzed to examine the EFL learner's attitudes toward the use of MALL including its merits and drawbacks, as well as their actual usage of MALL in their daily life. Then, another analysis was conducted to compare the differences between the English majors and the non-English majors regarding their attitudes toward the use of MALL in several aspects. The percentages, means, and standard deviation were compared and calculated for each of the sections in the questionnaire. The percentages were used in the tables to indicate the percentage of the EFL learners' agreement and disagreement. The mean values were calculated for the points presented with Likert five-point-scale format. For the analysis, strongly agree means 5 points, and strongly disagree was counted as 1 point. The standard deviation represents the amount of variation or dispersion of a set of data values. The lower standard deviation indicates that the data points tend to be close to the mean of the set. The results of analyses were presented by percentage, mean, and standard deviation.

4. Results & Discussion

4.1 EFL learners' purposes of using MALL (mobile assisted language learning)

Table 1 presents the EFL learners' purposes of using mobile assisted language learning (MALL). As shown in Table 1, 91.66% (M=4.4, SD=0.65) of the EFL learners in the study agreed that they used MALL to get more knowledge and 86.45% (M=4.2, SD=0.81) of them consented that they used MALL to prepare for the test (e.g. TOEIC, GEPT). And 82.81 % (M=4.1, SD=0.75) of them used the devices for their school work.

In addition to use MALL devices for the tests, most of the EFL participants responded that they would use MALL for English learning. Table 1 also indicated that most of the participant students (83.33 %, M=4.2, SD=0.85) used MALL to enhance their listening ability, followed by the purposes for improving their reading ability (79.68 %, M=4.1, SD=0.87), speaking ability (65.11 %, M=3.8, SD=1.01) and English writing (61.46 %, M=3.7, SD=1.02). Moreover, one interesting finding was revealed that up to 81.25 % (M=4.2, SD=1.09) of the EFL university learners admitted that they would use MALL for peer contacts.

These findings in terms of language learning lend support to those of Gaber's (2015), reporting that Mobile Assisted Language Learning (MALL) can play an effective role in developing listening skills nowadays. As shown in Table 1, the EFL learners used MALL to enhance English learning, especially in listening and reading. It is interesting to find that up to 79.68 % (M=4.1, SD=0.87) of the participants used MALL to enhance their reading ability. One possible reason might be that, compared with the traditional textbooks, the students were likely to get access to reading as long as they have the cell phone on hand. Moreover, it is surprising to find that 81.25% (M=4.2, SD=1.09) of the participants used MALL to contact with their friends. The reason might be that those students in this study would have schoolwork to discuss together and they were making good use of the convenience of MALL.

Table 1: The EFL learners' purposes of using MALL

	SA+A (%)	N (%)	SD+D (%)	Mean	Std. deviation
To get more knowledge	91.66	7.81	0.52	4.4	0.65
To prepare for the schoolwork	82.81	14.58	2.60	4.1	0.75
To prepare for the test (e.g. TOEIC,GEPT)	86.45	9.90	3.64	4.2	0.81
To enhance the listening ability	83.33	11.98	4.69	4.2	0.85
To enhance the speaking ability	65.11	24.48	10.41	3.8	1.01
To enhance the reading ability	79.68	14.58	5.73	4.1	0.87
To enhance the writing ability	61.46	27.08	11.45	3.7	1.02
To contact with friends	81.25	10.94	8.81	4.2	1.09

5 point= strongly agree, 4 point= agree, 3 point= neutral, 2 point= disagree, 1 point= strongly disagree

Table 2 indicated that a majority of the EFL students showed their positive perspectives, from

several aspects, toward the merits of MALL. As shown in Table 2, 95.84% (M=4.5, SD=0.58) of the EFL learners revealed that the use of MALL can help learning without the place restrictions. Moreover, 94.79% (M=4.4, SD=0.61) of them emphasized that the use of MALL helped learning without time limit. It was also indicated that MALL was particularly helpful for looking up the vocabulary (94.79%, M=4.6, SD=0.61). It appears that if the EFL learners want to search meaning for words, they could use MALL to learn anytime and anywhere. These findings are in substantial agreement with those of Valarmathi (2011), suggesting that by taking its convenience of MALL, learners can obtain a variety of information without time or place limit.

What's more, it was found that 93.23 % (M=4.5, SD=0.71) of the EFL learners in this study agreed that MALL helps provide more learning channels. Other merits of MALL were also mentioned, including improving the listening ability (83.34%, M=4.1, SD=0.83), and providing learning environment (82.29%, M=4.0, SD=0.75).

Furthermore, it is interesting to find that fewer of the learners in this study (64.06%, M=3.8, SD=0.98) used MALL to help improve the writing ability, compared with the other language skills. One possible explanation might be that there are not enough available applications about English writing. Another reason might be that the learners in this study usually were accustomed to using textbooks for learning English writing. After all, it is assumed that English writing ability is accumulated through a step-by-step process and you may not immediately learn how to write an article by using MALL.

Table 2. The EFL learners' attitude toward the advantages of MALL

	SA+A (%)	N (%)	SD+D (%)	Mean	Std. Deviation
To help provide learning environment	82.29	14.06	3.65	4.0	0.75
To help enhance the efficiency of learning	81.77	16.15	2.08	4.1	0.76
To help learn without time limit	94.79	4.69	0.52	4.4	0.61
To help learning without space restrictions	95.84	4.17	0.00	4.5	0.58
To help look up the vocabulary	94.79	4.69	0.52	4.6	0.61
To help improve the writing ability	64.06	28.65	9.89	3.8	0.98
To help improve the reading ability	79.69	15.63	4.69	4.0	0.84
To help improve the listening ability	83.34	13.02	3.64	4.1	0.83
To help improve the speaking ability	65.62	25.52	8.85	3.8	0.97

To help provide more learning channels	93.23	4.69	2.08	4.5	0.71

5 point= strongly agree, 4 point= agree, 3 point= neutral, 2 point= disagree, 1 point= strongly disagree

Despite those merits mentioned in Table 2, according to the analysis, several drawbacks were revealed by the participant learners, as shown in Table 3. The results surprisingly show that most of the EFL learners (82.29%, M=1.8, SD=0.92) admitted that the most serious disadvantage lies in entice form other entertainment applications in the mobile phone. In this modern society, because the mobile assisted equipment becomes an essential carry-on item, it was anticipated that the EFL learners may be distracted by other entertainment applications. Furthermore, there are 79.17% (M=1.9, SD=1.00) of them revealing MALL's causing their physical fatigue, and 69.80% (M=2.1, SD=1.06) of them complained the problem about battery charge. Some other common problems include small screen (63.03%, M=2.3, SD=1.10) and the relationship distance with other people (58.86%, M=2.4, SD=2.11).

Surprisingly, for the EFL learners in this study, the physical fatigue was found to be the second annoying disadvantage of using MALL, followed by another problem concerning relationship barrier. While these results seem inconsistent with the previous research of Corbeil and Valdes Corbeil (2007), they have something in common with those from Hashemi, Azizinezhad, Najafi, & Nesari (2011) which indicated the common problems about MALL, including small screens and the battery life/charge of mobile phones and PDAs. In line with this previous research, we assumed that due to the small screen of mobile phone and PDAs, the EFL learners in this study complained about their muscular soreness and eyes strain after using MALL for a long time.

Table 3. The EFL learners' attitude toward the disadvantages of MALL

	SA+A (%)	N (%)	SD+D (%)	Mean	Std. deviation
Small screen	63.03	23.44	13.55	3.7	1.10
Unsteady network	57.81	27.08	15.11	3.6	1.06
Limited battery charge	69.80	19.27	10.93	3.9	1.06
Limited memory size	57.29	23.96	18.75	3.7	1.18
Causing physical fatigue	79.17	13.02	7.81	4.1	1.00
Causing the relationship barrier	58.86	22.92	18.23	3.6	1.11
Causing financial burden	55.73	27.60	16.66	3.6	1.07
Too much entices from other entertainment applications	82.29	10.94	6.77	4.2	0.92

5 point= strongly agree, 4 point= agree, 3 point= neutral, 2 point= disagree, 1 point= strongly disagree

Table 4 reveals the EFL learners' actual use of MALL in their daily life. There were 69.27% of the EFL learners reporting that they always used the mobile phone to learn English and most of them (66.67%, M=3.8, SD=0.94) responded that they had enough knowledge for using the mobile devices to assist their language learning. As expected, a majority of them used the mobile phone as their learning devices. In other words, it suggests that most of them generally knew how to use MALL to achieve their best efficiency for English learning. Furthermore, in the survey, it is encouraging to find that half of the EFL learners' teachers used mobile devices to assist language teaching regularly (50%, M=3.3, SD=1.16).

Apparently, Table 4 suggests that most of the EFL university students in this study were experienced users of technology devices. It seems that the laptop and mobile phone are the commonly available devices in their daily life. Like those who used the mobile phone (69.27%) for English learning, most of them also used laptop as their learning tools (60.42%). This finding was in line with that of Penuel (2006) who found that the students often used the laptops to accomplish their instructions. The result also lends support to Zucker and Light (2009) suggesting that laptops into schools have a positive impact on students' learning. Because laptop is light enough to be operated while you hold it in your hands, students can learn without place and time restriction. These findings lead us to believe that it could have a significant impact on student learning by using the modern technology.

Table 4. The EFL learners' actual use of MALL

	Always+ Usually (%)	Sometimes (%)	Seldom+ Never (%)	Mean	Std. deviation
I use mobile phone to learn English	69.27	23.44	7.29	3.9	0.93
I use iPad to learn English	28.13	15.63	56.25	2.6	1.32
I use iPod to learn English	25.00	13.02	61.98	2.4	1.31
I use laptop to learn English	60.42	18.23	21.36	3.6	1.16
I have enough knowledge to use mobile devices to assist language learning	66.67	22.92	10.41	3.8	0.94
Teachers use mobile devices to assist language teaching	50.00	23.44	26.56	3.3	1.16

5 point= strongly agree, 4 point= agree, 3 point= neutral, 2 point= disagree, 1 point= strongly disagree

4.2 The comparisons between English majors and non-English majors about attitudes toward the use of MALL

Table 5 displays the comparisons between the English majors and Non- English majors in terms of their purposes of using MALL. Results indicate that a majority of the learners in both groups used MALL for obtaining knowledge (English group: 87.63%, M=4.3,

SD=0.69; non-English group: 95.84%, M=4.4, SD=0.61).

However, there was an obvious difference in the two groups in terms of using MALL to prepare for language tests. Unlike their English-major counterparts who revealed that they used MALL for contacting with friends (85.56%, M=4.4, SD=0.85), most of the non-English majors used MALL to prepare for the tests (92.71%, M=4.4, SD=0.71), which ranked as another primary purpose. While the proportion of English majors was 79.38% (M=4.1, SD=0.88), up to 92.71% of the non-English majors revealed that they (M=4.4, SD=0.71) used MALL for preparing the tests. One of the possible reasons might be that the English majors usually have more group reports so they might use MALL as a tool to discuss with their team members instead of preparing for tests only. On the contrary, the non-English majors might use English less frequently and what they need was to pass the tests. It might be the reason why they admitted the use of MALL for preparing test more frequently (92.71%, M=4.4, SD=0.71) than the English majors did (79.38%, M=4.1, SD=0.88).

With regard to the purpose for language learning, both of the two groups agreed that their primary purposes were to enhance the listening and reading. Up to 82.48% (M=4.2, SD=0.82) of the English-major participants revealed that they used MALL to enhance their listening ability, compared with the purpose of enhancing reading ability (71.14%, M=4.0, SD=0.84). In the non-English-major group, 84.38% (M=4.1, SD=0.88) of the participants also agreed that their purpose was to enhance the listening ability and up to 87.50% (M=4.2, SD=0.90) of them used MALL for enhancing the reading ability.

Moreover, it was surprising to find that more non-English-major participants (79.17%, M=4.0, SD=0.95) admitted that they used MALL for enhancing their writing ability, compared with their English major counterparts (43.30%, M=3.4, SD=1.01). One possible reason might be that the English majors have 4-semester English writing courses to practice English writing, while the non-English majors have none of them in their course arrangement. Therefore, the non-English might rely on the MALL devices for learning writing or finishing writing assignments. A further interview might be needed for further information in terms of the purpose of using MALL for learning English writing.

Table 5. The comparisons between the English major's and non-English majors' purposes of using MALL

	Major	SA+A (%)	N (%)	SD+D (%)	Mean	Std. deviation
To get more knowledge	English	87.63	12.37	0.00	4.3	0.69
	Non-English	95.84	3.13	1.04	4.4	0.61
To prepare for the schoolwork	English	78.35	18.56	3.09	4.1	0.80
	Non-English	76.46	17.46	6.08	4.2	0.70.
To prepare for test	English	79.38	16.49	4.12	4.1	0.88

(e.g. TOEIC,GEPT)	Non-English	92.71	4.17	3.13	4.4	0.71
To enhance listening ability	English	82.48	15.46	2.06	4.2	0.82
	Non-English	84.38	8.33	7.29	4.1	0.88
To enhance speaking ability	English	51.55	39.18	9.28	3.6	0.97
	Non-English	78.13	10.42	11.46	4.0	1.01
To enhance reading ability	English	71.14	24.74	4.12	4.0	0.84
	Non-English	87.50	5.21	7.29	4.2	0.90
To enhance writing ability	English	43.30	42.27	14.43	3.4	1.01
	Non-English	79.17	12.50	8.33	4.0	0.95
To contact with friends	English	85.56	11.34	3.09	4.4	0.85
	Non-English	77.09	10.42	12.51	4.0	1.25

5 point= strongly agree, 4 point= agree, 3 point= neutral, 2 point= disagree, 1 point= strongly disagree

Table 6 reveals that both English majors (95.84%, M=4.6, SD=0.74) and non-English majors (93.76%, M=4.3, SD=0.63) agreed that learning without time limit was one of the primary advantage of MALL. Besides, both English majors (96.88%, M=4.6, SD=0.72) and non-English majors (94.79%, M=4.4, SD=0.59) also supported that the use of MALL helps learning without space restrictions. These findings are consistent with those of the previous studies, such as Kukulska-Hulme (2009), Valarmathi (2011), and Chen (2013). Such convenience might be one of the reasons that a majority of the EFL learners in different disciplines used MALL to learn English.

With regard to English learning, it was found that both English majors (98.96%, M=4.7, SD=0.68) and the non-English majors (90.62%, M=4.4, SD=0.69) suggested that using MALL helps them look up the vocabulary easily. The reason might lie in the convenience of MALL (Valarmathi, 2011) and more increasingly developed software and applications for looking up vocabulary without payment. Robert (2011) pointed out that Claire Siskin, an English Language Specialist, had provided a variety of apps for language learning and most of these apps are available on phones, such as flashcard programs, dual language dictionaries, and phrase books. Furthermore, a majority of English majors (95.83%, M=4.6, SD=0.74) and non-English majors (93.62%, M=4.4, SD=0.81) agreed that MALL provide more English learning platforms, such as Tutor ABC, EF English Live,

ETALKING, and so on.

As for improving their English ability, the majority of them admitted that MALL can help them improve listening and reading ability. However, compared with the English majors, more non-English majors tended to use MALL for English writing and speaking. One possible reason might be that the English majors were exposed themselves to a learning environment in which they were provided with various English writing and speaking lessons, while the non-English majors lacked the courses of English writing and speaking. That might be one of the reasons why fewer of the English majors used MALL to improve their speaking and writing ability. While compared with the English-major counterparts, more non-English majors indicated MALL can help provide learning environment (90.62%, M=4.2, SD=0.64) and enhance learning efficiency (93.75%, M=4.3, SD=0.60). One possible reason might lie in the differences in their academic fields. Another reason might be that the non-English participants we investigated in this study were engineering majors, who are usually presumed good at using the technology to learn, compared with the majors of Arts.

Table 6. The comparisons between the English majors' and non-English majors' attitude toward the advantages of MALL

	Major	SA+A (%)	N (%)	SD+D (%)	Mean	Std. deviation
To help provide learning environment	English	74.22	20.62	5.15	3.9	0.84
	Non-English	90.62	7.29	2.08	4.2	0.64
To help enhance the efficiency of learning	English	70.11	26.80	3.09	3.9	0.86
	Non-English	93.75	5.21	1.04	4.3	0.60
To help learn without time limit	English	95.84	4.17	0.00	4.6	0.74
	Non-English	93.76	5.21	1.04	4.3	0.63
To help learn without space restrictions	English	96.88	3.13	0.00	4.6	0.72
	Non-English	94.79	5.21	0.00	4.4	0.59
To help look up the vocabulary	English	98.96	1.04	0.00	4.7	0.68
	Non-English	90.62	8.33	1.04	4.4	0.69
To help improve the	English	45.84	40.63	13.54	3.5	0.99

writing ability	Non-English	77.09	16.78	6.13	4.0	0.96
To help improve the reading ability	English	73.96	22.92	3.13	4.0	0.89
	Non-English	85.42	10.33	4.25	4.1	0.88
To help improve the listening ability	English	84.38	15.63	0.00	4.2	0.81
	Non-English	82.29	13.52	4.19	4.0	0.94
To help improve the speaking ability	English	52.09	36.46	11.46	3.6	1.04
	Non-English	79.16	17.58	3.26	4.0	0.92
To help provide more learning channels	English	95.83	4.17	0.00	4.6	0.74
	Non-English	90.62	5.21	4.17	4.4	0.81

5 point= strongly agree, 4 point= agree, 3 point= neutral, 2 point= disagree, 1 point= strongly disagree

Table 7 presents the comparisons between English majors and non-English majors in terms of their attitudes toward the disadvantages of MALL. Results of analysis show that there was something in common between the participant groups with different disciplines. For either the English majors (79.17% M=1.9, SD=1.05) or non- English majors (79.17%, M=1.9, SD=1.05), the physical fatigue caused by using Mall was considered to be the most annoying problem. This result is consistent with the previous research (Chiu, Guo, Shih, Chen, Cheng, & Chung, 2015) which indicated that a good number of students had eyestrain and neck pain because of using a smartphone.

In addition, it was interesting to find that more of English majors (78.12%, M=1.8, SD=0.98) and non-English majors (86.46%, M=2.8, SD=0.88) revealed that there was too much enticement from other entertainment applications.

Besides physical fatigue, it was interesting to find that the EFL learners with different disciplines had different attitudes toward the problems such as small screen, unsteady network, limited battery charge, and limited memory size. As shown in Table 7, compared with the (non-English) engineering counterparts, the English major students had less concern with those problems, such as small screen (54.16%, M=2.4, SD=1.13), unsteady network (44.79%, M=2.6, SD=1.07), limited battery charge (65.84%, M=2.2, SD=1.06), and limited memory size (43.75%, M=2.6, SD=1.13). On the contrary, most of the non-English majors concerned that small screen (71.88%, M=2.2, SD=1.08), unsteady network (70.84%, M=2.2, SD=1.05), limited battery charge (75.00%, M=2.0, SD=1.07), and limited memory size (70.84%, M=2.1, SD=1.21) were the disadvantages they should deal with when using MALL. The reason why the non-English majors cared more about these

problems might be that the language majors tend to be less sensitive toward the technology products and the function of mobile devices. This finding implied that the individual differences in learning might result in the learners' differences in their attitude toward the use of the technology devices. This finding seemed to correspond with the previous research of Peacock and Ho (2003) who found some sharp individual differences between the learners in different academic disciplines in terms of their strategy use.

However, compared with the above-mentioned drawbacks, relatively fewer participants in either English majors or non-English majors considered that the use of MALL caused their relationship barrier (English majors: 52.8%, M=3.5, SD=1.08; non-English majors: 65.63%, M=3.6, SD=1.16) Relatively, financial burden (non-English majors: 65.62%, M=2.2, SD=1.14) was one of the drawbacks they would take into account when using MALL.

Table 7. The comparisons between the English majors' and non-English majors' attitude toward the disadvantages of MALL

	Major	SA+A (%)	N (%)	SD+D (%)	Mean	Std. deviation
Small screen	English	54.16	30.21	15.63	2.4	1.13
	Non-English	71.88	16.67	11.46	2.2	1.08
Unsteady network	English	44.79	37.50	17.71	2.6	1.07
	Non-English	70.84	16.67	12.50	2.2	1.05
Limited battery charge	English	65.84	25	9.16	2.2	1.06
	Non-English	75.00	13.54	11.46	2.0	1.07
Limited memory size	English	43.75	37.50	18.75	2.6	1.13
	Non-English	70.84	10.42	18.75	2.1	1.21
Causing physical fatigue	English	79.16	15.63	5.21	1.8	0.96
	Non-English	79.17	10.42	10.42	1.9	1.05
Causing the relationship barrier	English	52.08	32.29	15.63	2.5	1.08
	Non-English	65.63	13.54	20.84	2.4	1.16
Causing financial burden	English	45.84	39.58	14.58	2.5	1.01
	Non-English	65.62	15.63	18.75	2.2	1.14

Too much entices from other entertainment applications	English	78.12	14.58	7.29	1.8	0.98
	Non-English	86.46	7.29	6.25	2.8	0.88

5 point= strongly agree, 4 point= agree, 3 point= neutral, 2 point= disagree, 1 point= strongly disagree

Further analysis was conducted to compare the difference between the English and non-English majors in terms of the actual usage of MALL. Table 8 presents that either the English-major group (64.59%, M=3.8, SD=0.97) or the non-English group (73.99%, M=4.0, SD=0.95) used mobile phone to learn English, followed by using the laptop as a tool for learning English (English: 50.00%, M=3.3, SD=1.22; Non-English: 70.83%, M=3.8, SD=1.11). In other words, the study reported that a majority of these learners in both groups tended to use the mobile phone and laptop to learn English. The finding was consistent with Soleimani, Ismail, and Mustaffa (2014) who reported the highest actual usage of mobile phones for learning English among the participants in their study. Although they learned in different fields, it seemed that the mobile phone was the common and convenient tool they used to learn English.

On the other hand, it is obvious that both English group and non-English- group have lower percentage in using iPad and iPod to learn English than the other learning tools. It indicates that iPad was not regarded as the most popular learning devices in learning English since laptops and mobile phones were prevailed (Soleimani, et al., 2014). As shown in Table 8, in the English-major group, just 8.33% of the participants used iPad to learn English (M=2.0, SD=1.01), and merely 6.25% of them used iPod to learn English (M=1.8, SD=0.92). In addition, in the non-English group only 47.92% of the participants used iPad to learn English (M=3.1, SD=1.38), and only 43.75% of them used iPod to learn English (M=3.0, SD=1.38). However, based on the study, it is interesting to find that over all the non-English-major group reported higher proportion than the English-major counterparts in terms of using the other devices, such as iPod and iPad, as learning tools. One of the possible reasons might lie in the individual differences, as Peacock and Ho (2003) pointed out that individual differences were found in different disciplines, the non-English majors in the engineering field might be more like to rely on technical devices and more sensitive to the technical products.

In addition, the analysis showed an inspiring finding that most of the learners in both English (61.46%, M=3.6, SD=0.89) and non-English groups (71.87%, M=3.9, SD=1.05) expressed that they had enough knowledge to use the mobile devices to assist their language learning. This finding lends support to Chen (2012), suggesting that the participants accomplished all instructions with highly efficiency without any teaching in the learning process. As the technology advances, a combination of intuitive operation interface, such as touch screen, voice recognition and face perception, most people possess at least one electrical device at hand and are intuitive to know how to use it to meet their need for daily usage.

In terms of the actual use of MALL in the classroom, Table 8 suggests that a slight higher proportion of the non-English-majors (56.26%, M=3.3, SD=1.22), compared with that of the English group (43.75%, M=3.2, SD=1.15), reported that their teacher use mobile devices to assist language teaching. It implies that the teachers teaching English in the engineering field might use the technical devices more

often in class to motivate the non-English-majors to learn English. They might be aware of the individual differences for teaching and learning needs in different educational backgrounds.

Table 8. The comparisons between the English majors' and the non-English majors' actual use of MALL

	Major	SA+A (%)	N (%)	SD+D (%)	Mean	Std. deviation
I use mobile phone to learn English	English	64.59	29.17	6.25	3.8	0.97
	Non-English	73.99	17.71	8.33	4.0	0.95
I use iPad to learn English	English	8.33	18.75	72.92	2.0	1.01
	Non-English	47.92	12.50	39.58	3.1	1.38
I use iPod to learn English	English	6.25	14.58	79.17	1.8	0.92
	Non-English	43.75	11.46	44.80	3.0	1.38
I use laptop to learn English	English	50.00	26.04	23.96	3.3	1.22
	Non-English	70.83	10.42	18.76	3.8	1.11
I have enough knowledge to use mobile devices to assist language learning	English	61.46	32.29	6.25	3.6	0.89
	Non-English	71.87	13.54	14.58	3.9	1.05
Teachers use mobile devices to assist language teaching	English	43.75	31.25	25	3.2	1.15
	Non-English	56.26	15.63	28.13	3.3	1.22

5 point= strongly agree, 4 point= agree, 3 point= neutral, 2 point= disagree, 1 point= strongly disagree

5. Conclusion, Limitations, and Implications

This study investigated the EFL Learners' attitudes toward the use of Mobile Assisted Language Learning (MALL). The findings were summarized as follows. Most of the EFL learners admitted that they used MALL for knowledge and preparing for schoolwork. They used MALL for English learning, especially for enhancing listening ability. A majority

of them agreed that helping learning without time and space restriction was the predominate advantages of MALL. They also emphasized that MALL was particularly helpful for looking up vocabulary. Besides, most of them agreed that MALL helps provide more learning channels. However, despite its merits, they also revealed that MALL involves several weaknesses, such as distractions from other entertainment applications and physical fatigue. The findings also reveal that a majority of the EFL learners used mobile phone, compared with other devices, as their learning devices.

Further comparisons between the learners with different driplines in terms of their attitudes toward MALL reveal that next to using MALL for knowledge, most of the English majors used MALL to connect with their friends while the non-English majors used MALL mostly to prepare for tests. As for learning, more non-English majors used MALL to enhance their writing skills. Furthermore, concerning the disadvantages of MALL, the non-English majors are more sensitive about the problems of small screen, unsteady network, limited battery charge, and limited memory size. Finally, both English and non-English major revealed that they actually used the mobile phone to learn English in the daily life.

Although this study offered an essential insight for a better understanding of the attitudes of English majors and non-English majors toward the usage of MALL, there are still some limitations in conducting this study. The results should not be generalized because the participants in this study were only confined in a technical university. Therefore, more subjects with diverse backgrounds would be necessary to provide with more detailed insights for the further study. In addition, an interview might be necessary to provide more in-depth information relating to the usage of MALL.

The results in this study indicated that Mobile Assisted Language Learning (MALL) is the most popular learning devices used by the EFL learners. This implies that MALL could provide essentially supplementary teaching materials that support the educational context. However, this study demonstrated a number of disadvantages of MALL that give a rise to several suggestions for improving the EFL teaching. Firstly, to accomplish greater success for pedagogical purposes, teachers should consider integrating MALL, especially the use of cell phones into teaching for the EFL learners. With its characteristics of convenience and popularity among the EFL learners, cell phone enables teachers to communicate with their students without time and place limitation even if the students stay outside of the classroom. Hence, the convenience in communication provides the students with more opportunities for learning. In other words, more online learning activities could be designed because teachers could discuss with their students, and directly assign them the tasks with no need to present in person.

Secondly, the technicians or designers for mobile phone or other applications should provide technically assistances in modifying these drawbacks indicated by the learners and develop a more user-friendly mobile assisted learning environment. As shown in this study, a majority of the EFL learners complained about the physical fatigue, small screens and insufficient battery capacity. Accordingly, the engineers for designing the mobile phones and applications should identify those existing problems and then improve them as possible as they can. In addition, to view the whole picture of MALL, it is suggested that besides comparing the learners with different disciplines, the further research should investigate the merits and drawbacks of MALL by investigating other factors, such as gender, age, and cultural background.

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行動科技輔助語言學習（MALL）：學習者的態度與看法探討

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摘　要

本研究旨在探討以英語為外語的學習者(EFL)對於行動科技輔助語言學習(Mobile Assisted Language Learning, 簡稱 MALL)的態度與看法，並進一步了解不同主修學習者對於 MALL 的異同看法。本研究採取不記名問卷方式，對象包含中部一所科技大學的 192 位英語系主修學生及非英語系主修學生。問卷設計為李克特量表(Likert Scale)五等級量表問卷，問卷內容深入探討學習者使用 MALL 學習的目的、對於使用 MALL 優缺點看法、以及日常學習的實際使用情況。研究結果顯示(一)獲取知識以及準備考試 (聽力及閱讀能力)為使用 MALL 的最主要目的。此外，大多數受測者認為使用 MALL 的最大優點是不受時間及地點限制。然而，娛樂性應用程式誘惑大是最主要的缺點，其次為造成身體的疲勞負擔，其它缺點還包括電量有限及介面過小等。大多數學習者較常使用的 MALL 工具為手機及筆記型電腦。進一步比較分析結果呈現 (二)英語系主修學生使用 MALL 最主要目的是獲取知識，而非英語系主修學生偏向於為了準備考試。此外，非英語系主修學生傾向使用 MALL 來提高寫作及口說能力，而英語系主修學生則主要做為增進聽力及閱讀能力。然而，相較於英語系主修學生，大部分非英語系主修學生比較關切 MALL 的缺點，例如:介面小、網路連線不穩、電量以及容量有限等問題。針對實際使用情況，兩類群學生皆偏好手機及筆記型電腦。但是，較高比例的非英語系主修學生表示老師會在教室使用 MALL 教學。文後，本研究亦針對 MALL 融入教學課程以及未來科技設計等，提出諸多建議。

關鍵字：行動科技輔助語言學習（MALL）、以英語為外語(EFL)的學習者、態度與看法

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