

Using Mobile-Assisted Mind Mapping Technique (MAMMAT) to Improve Writing Skills of ESL Students

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Abstract: Mobile assisted language learning (MALL) has developed over the past decade as an advanced ground within its own right and it is gaining acceptance everywhere recently. It is a highly popular multidisciplinary study field which increasingly attracts the attention of scholars around the world. Moreover, it has attracted the scholars who have realized the potential to apply mobile technologies to enhance learning. The study aimed to investigate whether, or not, the use of Mobile-Assisted Mind Mapping Technique (MAMMAT) can be an indicator pre-writing ability and writing proficiency level. A sample of 23 undergraduate students registered for writing course at a selected university was administered a pre-test primarily to determine their pre-writing ability and writing proficiency. The participants were trained on the use of *MindMup*, online mind mapping by using their mobile phone to generate, develop and organize essay outlines. Using Paired-Samples T-Test, results revealed that using Mobile-Assisted Mind Mapping Technique (MAMMAT) is an effective tool and it helps to develop ESL undergraduate students' writing skills. The findings of the study provide some pedagogical implications for employing this technique in ESL contexts improving writing skills performance.

Key words: *Mobile-Assisted Mind Mapping Technique (MAMMAT), mind mapping, mobile phone, pre-writing, writing skills*

INTRODUCTION

Writing in a second language (L2) and foreign language (FL) appears to be the most challenging language skill for language learners to acquire [1]. Learning to write is challenging, especially for those writing in a second or a foreign language in academic contexts since they do not know enough about how to produce ideas for writing. Writing is defined to be a useful skill [2]. It means that people write to convey a message and to share information, thoughts and ideas with other people. Besides, it is a growing skill and is different from other language skills [3]. However, it is perceived to be one of the most difficult skills to learn because many have difficulty to express their feelings, ideas, and persuade others [4] (Bruning, 2005). As effective writing is considered to be a problem for English as a Foreign Language (EFL) learners, a need

is felt to find out some ways of teaching that can help learners improve their writing performance. In fact, writing is a basic communication skill.

Due to the extent of technology, writing in ESL situation is an important skill need to be acquired. In fact, writing is a basic communication skill. Mind mapping and concept mapping have been applied as a pre-writing strategy. However, there has been a limited number of researches in this field. Conventionally, mind maps were drawn with coloured pens and paper. With presently available technology, it is possible to create a mind map by using a computer, which makes it easy to make, review, revise and save mind maps. Online mind map is a useful way to employ the students' interest and teach complex or multifaceted topics, from the web of characters in a novel, to the complex cultural challenges of a global economy, to the interplay of factors affecting climate

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change. Recently, flexible e-learning become the primary mode for student access by using mobile learning environment. It is already forecast that in the near future the number of mobile communication devices such as mobile phones and handheld computers will exceed the number of personal computers. Pinkwart et. al [5] defines e-learning as learning supported by digital electronic tools and media and by analogy. Many researchers and educators viewed mobile learning as the immediate successor of e-learning. According to Savill-Smith and Kent [6], the use of mobile devices for learning can assist students' motivation, help organizational skills, encourage a sense of responsibility, support both independent and collaborative learning, act as reference tools, track students' progress and deliver an assessment. Therefore, some educational institutes, universities or schools started to develop specific mobile applications for their students according to their curriculum and particular needs. Many researchers also have explored research in mobile learning since the last decade.

Therefore, the present article is concerned generally with the developing university students' essay writing proficiency level. This present study investigates how far the use of Mobile-Assisted Mind Mapping Technique (MAMMAT) can improve pre-writing ability and writing proficiency level. Thus, a research question investigated is:

Is there a difference between the pre-writing ability and writing proficiency level of the students using Mobile-Assisted Mind Mapping Technique (MAMMAT) before and after the study? The

REVIEW OF LITERATURE

Writing still presents a huge challenge for many students, especially at tertiary level education. As English second language research and practises have developed, many techniques have proved successful in English L2 writing classrooms. Carter and Nunan [7] mentioned that careful needs analysis of curriculum, cooperative and group work that strengthen the community of the class and offer writer authentic audiences, integration of language skills in class activities, learning styles and strategy training to help students learn how to learn and the use of relevant, authentic materials and tasks have proved this succeed.

Second language is usually different from the first language strategically, rhetorically and linguistically and the written assignments of the L2 learners are syntactically and semantically loose lack coherence and all this due the difference of L2 from L1 [8]. Hyland [9] also mentioned that this difference affects the thinking faculty of the learners.

Thus, mind mapping is a suggested tool for assisting any form of writing. Mind mapping and concept mapping have been applied as a pre-writing strategy. However, there has been a limited number of research in this field. Al-Jarf's [10] research project employed software mind mapping techniques with the experimental group (but not the control group) to measure its overall effects on students' writing attainment. The results of this project suggest that the former group will score significantly higher compared to the latter group. A post-research survey later shows that computerised mind mapping can actually encourage creativity and critical thinking as students became more adept at producing and shaping more and more complex ideas for writing. The findings by Al-Jarf find support in the work of Liu [11] who explored the effects of different computerized mind mapping levels (from no mapping at all to individual mapping to complex cooperative mapping) on the performance of pre-writing for students with dissimilar writing abilities. Liu found that computerized mind mapping had the same benefits on both low and mid-proficiency writing students compared to those who did not use mind mapping at all. As for high-proficiency writing students, they performed even better, especially when they were given the space and time to create individualised mind maps. Furthermore, there are numerous paths to a higher prospective of mobile learning and mind mapping in teaching ESL writing [12].

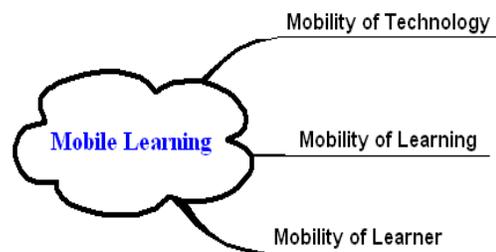


Figure 1: The Concepts of Mobile Learning [13]

The above figure is a graphic illustration of the three concepts of mobile learning that can convey a higher

level of educational instruction. The concepts of mobility can be divided into three significant areas which are mobility of technology, mobility of learners and mobility of learning especially in the higher education environment. The successful provision of higher education instruction depends on the multilateral significance of the word mobility as it used in the context of higher education. Thus, these three concepts are interdependent and are correspondingly important in making mobile devices feasible as devices for the delivery of higher education instructional contents.

This leads to the various developments of mobile learning applications. Kulkuska-Hulme et al. [13] indicated that mobile learning can work, reaching places that other learning system cannot, it is best provided as part of a blend of learning activities, it offers a collection of pieces to be fitted to a learning need rather than a single solution, it is not simply a tool for delivering teaching material but can be used for learning through creativity, collaboration and communication. Chaka [14] claimed that the future of language learning lies more with Mobile-assisted Language Learning (MALL) than Computer-assisted Language Learning (CALL). He further presented the distinctive characteristics of MALL which include mobility, ubiquity, connectivity, portability, handheldibility, convergence, multifunctionality, cross-platform blending, optionality, convenience: access, accessibility, availability, affordability, context awareness, personalization and flexibility. He trusts that these aspects give MALL both a viable and practical edge over CALL. Azar and Nasiri [15] noted that mobile learning has also shown to be effective to enhance language skills even in writing based on several studies.

According to Van Gelder [16], computer-aided argument mapping (CAAM) is a relatively recent learning strategy and as such there is as yet little research examining its efficacy. He asserts the main function of these CAAM programs, such as Rationale is to help one's own thinking and reasoning. This program provides a platform which the user arrives at the conception through drawing and refining reasoning clearly before use. Some studies also have shown that the positive effectiveness of using CAAM to promote the students' critical thinking strategies in different educational fields [17].

Jai Shree et al. [18] investigated if trainee teachers from 27 teacher training institutes in Malaysia whether they are ready to use mobile learning to improve their argumentative writing. This type of writing is very much alike to academic writing as it helps learners to become critical and reflective thinkers. Some of problems from this study like weak content, weak vocabulary and weak organization when the teachers write an argumentative text were identified. He also stated that learners cannot relate to their ideas in writing because they focus more on the product than the process

of writing. Also, they are unable to seize the study skills needed as they have less group-based activities. This study suggested that argumentative writing skills can be developed through mobile learning as it helps learners to use it anywhere and anytime and it can help students to get more collaborative learning without worrying about a place and time to improve their writing skills.

METHOD

Subjects of the study

The selected participants were 23 ESL Diploma students, registered for a university course entitled 'Integrated Language Skills III' as taught in University of Technology MARA, Malaysia.

Instrument of the study

A writing test was used by the researchers in order to measure the students' pre-writing ability and writing proficiency level. Four writing tests were disseminated to students. The students were asked to create four online mind maps by using the Mobile-Assisted Mind Mapping Technique (MAMMAT) before they were asked to write four argumentative essays in 350 words of familiar topics and relate to current issues. Crobach's Alpha was computed for checking test reliability. The result was 0.77 suggesting that the items had relatively high internal consistency.

Research Design

In order to conduct the study, the effects of using Mobile-Assisted Mind Mapping Technique (MAMMAT) on students' argumentative writing skills were investigated using the quantitative research design. Quantitative data were collected using the pre-test post-test with the experimental research design. Before the application, the purpose of the study and expectations from the students during the experiment process was explained to the students. The students were trained on the use of *MindMup*, online mind mapping by using their mobile phone to generate, develop and organize essay outlines in the writing class. During the 12-week period, students were expected to use the technique in their writing class.

Research Procedure

The research procedures as follows:

1. All the test items were tried out before giving the pre-test to find out the instrument and reliability.
2. The pre-test and post-test were given in order to analyze the writing scores.
3. Quantitative data were collected using the pre-test and post-test and analyzed by using SPSS.

4.

RESULT AND DISCUSSION

The descriptive analyses of pre-test and post-test results of participants are presented in Table 1.

| Writing Test | N | Mean | S.D | Std. Error Mean |
|------------------|----|--------|--------|-----------------|
| Pre- Test | 23 | 16.978 | 1.9539 | .2913 |
| Test 1 | | | | |
| Test 2 | 23 | 17.444 | 1.8285 | .2726 |
| Test 3 | 23 | 18.333 | 2.1559 | .3214 |
| Test 4 | 23 | 18.156 | 2.5222 | .3760 |
| Post-test | 23 | 18.778 | 2.1415 | .3192 |
| Test 1 | | | | |
| Test 2 | 23 | 18.656 | 2.2382 | .3336 |
| Test 3 | 23 | 18.767 | 2.4555 | .3660 |
| Test 4 | 23 | 19.689 | 1.7879 | .2665 |

Paired-sample T-Test was used to verify validity the hypothesis. Table 2 shows the significance of difference between the mean scores of the sample’s pre-post writing skills Test 1.

Table: 2 Paired-sample T-Test of Writing Scores Test 1

| Writing Test 1 | Mean | SD | df. | t | Sig. |
|----------------|--------|--------|-----|-------|-------|
| Pre- Post Test | 1.8000 | 2.6722 | 22 | 4.519 | 0.000 |

The result in Table 2 has shown that Writing Test 1 post-test score of the participants (M= 18.778, SD= 2.1415) is statistically higher than the pre-test score (M =16.978, SD=1.9539)(t(22)= 4.519, p<0.05).This finding shows that the use of Mobile-Assisted Mind Mapping Technique (MAMMAT) improves students’ writing skills.

Table: 3 Paired-sample T-Test of Writing Scores Test 2

| Writing Test 2 | Mean | SD | df. | t | Sig. |
|----------------|--------|--------|-----|-------|-------|
| Pre-Post Test | 1.2111 | 2.4367 | 22 | 3.334 | 0.002 |

Table 3 shows the significance of difference between the mean scores of the sample’s pre-post writing skills Test 2. The result in Table 3 has shown that Writing Test 2 post-test score of the participants (M= 18.656, SD= 2.2382) is statistically higher than the pre-test score M=17.444,SD=1.8285)(t(22)=3.334),

p<0.05). This finding shows that the use of Mobile-Assisted Mind Mapping Technique (MAMMAT) improves students’ writing skills.

Table 4 shows the significance of difference between the mean scores of the sample’s pre-post writing skills Test 3.

Table : 4 Paired-sample T-Test of Writing Scores Test 3

| Writing Test 3 | Mean | SD | df. | t | Sig. |
|----------------|-------|--------|-----|------|-------|
| Pre-Post Test | .4333 | 3.1218 | 22 | .931 | 0.357 |

The result in Table 4 has shown that Writing Test 3 post-test score of the participants (M= 18.767, SD= 2.4555) is statistically higher than the pre-test score (M = 18.333, SD= 2.1559) (t(22)= .931), p<0.05).. This finding shows that the use of Mobile-Assisted Mind Mapping Technique (MAMMAT) improves students’ writing skills.

Table 5 shows the significance of difference between the mean scores of the sample’s pre-post writing skills Test 4.

Table: 5 Paired-sample T-Test of Writing Scores Test 4

| Writing Test 4 | Mean | SD | df | t | Sig. |
|----------------|--------|--------|----|-------|-------|
| Pre-Post Test | 1.5333 | 3.0737 | 22 | 3.346 | 0.002 |

The result in Table 5 has shown that Writing Test 4 post-test score of the participants (M= 19.689, SD= 1.7879) is statistically higher than the pre-test score (M = 18.156, SD= 2.5222)(t(22)= 3.346), p<0.05). This finding shows that the use of Mobile-Assisted Mind Mapping Technique (MAMMAT) improves students’ writing skills.

Results indicated that the use of Mobile-Assisted Mind Mapping Technique (MAMMAT) improved the students’ writing skills. Song and Fox(2008) found out that students produced a positive attitude towards the use mobile device in learning. Additionally, the result was in agreement with other studies done by Kwon and Cifuentes [19] and Chiu [20] which reported that the use of computerized mind maps should be encouraged for the assistance of students in generating complex ideas for their essay. This study also was reinforced by Liu [11] who explored the effect of different computerized mind mapping treatments (no mapping, individual mapping and cooperative mapping

on the performance of pre-writing phase of students with different writing proficiencies. To recapitulate, mind mapping gives many benefits to their writing like it helps them to organize ideas before they move on writing, create more ideas in their writing as they can give many examples based on it, allow them to list their points and they can easily elaborate their points and they can develop their ideas more easily.

CONCLUSION

In recent times, mobile phones have already become a routine part of our lives. It can also be concluded that most of the students have basic knowledge of online mind mapping skills. Most of them know how to handle major computer operation skill but not so expert in using online mind map. Therefore, students should be encouraged to use the online mind map and they need to have more practice in using this technique. This clearly indicates that the mind mapping technique can act as a powerful tool in boosting the confidence level of students in writing effectively. Based on the discussions and descriptions set out in the paper, it can be deduced that the potential of mobile learning and mind mapping in teaching ESL writing is promising. In enhancing the 21st learning skills via mobile technology, researchers and educators are encouraged to use mobile learning technology specifically MALL to help in improving ESL students writing skills. Therefore, educators should recognize that technological innovations will become a culture in learning and it will begin with the educators and the pedagogical processes they use in learning [21].

This result of this study could have important implications for ESL writing learning and mobile learning. Students can have opportunity to practice anytime and anywhere since they carry their mobile phones almost all the time. This fun experience can make writing learning interesting for undergraduate students. Results also suggest that mobile phone provide tremendous opportunities for learning, especially outside the classroom since they are available all the time. It is recommended that further studies should investigate the effects of using this technique for other language skills. Besides that, further studies also should find out about the students' perspectives towards using this technique.

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