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APPLICATION OF M- LEARNING IN ENHANCING READING COMPETENCY AMONG ENGINEERING UNDERGRADUATES

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Abstract

With the advent of technology in the learning process, classroom alternatives have been practised to ensure that students receive the best practices in the classroom. Mobile learning (M-learning) is one of the options applied by educators to improve the quality of instructions. This study aimed to investigate the reliability of m-learning in improving the quality of learning process on students' reading comprehension skills. 30 first-year students of Universiti Tun Hussein Onn Malaysia (UTHM) from technical faculty were chosen to be the participants of this study. A quasi-experimental technique was utilised in which students were evaluated during the pretest and posttest stages to determine the difference in their reading skills once the m-learning instrument was applied in between these stages. Then, a questionnaire was distributed to each student via Google Form in order to collect data on their perceptions of m-learning implemented by their instructor. The findings demonstrated that students had a favourable opinion towards m-learning and that there were notable variations in the outcomes of the pretest and posttest. Thus, the implementation of m-learning is highly recommended in order to achieve the best results and satisfaction in the learning process.

Keywords: M-learning, perception, reading competency

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1. Introduction

A second language learner's reading ability and English competence are both influenced by their reading comprehension as English as Second Language or English as Foreign Language (ESL/EFL) students (Kung, 2019; Pourhosein Gilakjani & Sabouri, 2016; Rahimi et al., 2016). As some researchers have claimed that reading comprehension affects reading ability (Rahim et al., 2017), several studies were conducted in regard to improving ESL/EFL learners' reading comprehension by examining the strategies used during the reading activities. These strategies include visual organisation (Rahim et al., 2017), and scaffolding (Shirmohammadi & Salehi, 2017).

The rapid growth of technology and the momentary adaptation of the younger generation have led to new patterns in daily life and consequently in learning and education. According to The Malaysian Communications and Multimedia Commission (MCMC Statistics & Data Intelligence Department, 2021) “smartphone use is the highest among individuals under the age of 35, and the trend is declining in older age groups”. The survey establishes validity in proving that teenagers and young adults are the active users of smartphones in which these groups fall under the category of students. This indicates that technologically advanced students are keeping up with the latest devices available in the market and somehow manage to stay ahead of their peers in terms of the devices they use for everyday communication, connectivity and educational purposes. There is always a gap between ‘what students are capable of’ (through the devices they use) and ‘what is offered in the classroom’. Hence, it is undeniable that technology adds more hues to students' learning experiences, including English language learning.

Ever since the studies of Educational Technology emerged in the 1980s, the utilisation of technology has become an option to educators’ pedagogies in blending their teaching materials to appear modern and interactive (Pedro et al., 2018). In fact, learning with a mobile phone is fundamentally different from learning in the classroom. The connection of the Internet to mobile devices makes it easier for students to access their learning materials and communicate with their peers without having to be physically in the classroom. Although its definition has evolved in various directions in this 21st century, the growth of these definitions has ultimately led to the formation of a new learning modality, which is called mobile-learning (m-learning) (Pedro et al., 2018).

1.1. Literature review

Despite the adoption of technology in educational institutions, there is still inadequate utilisation of m-leaning in Malaysia. In most ESL (English as a Second Language) reading instructions, less effort is put into developing students' critical thinking, let alone their ability to comprehend texts that are challenging. Not only that, it is practically unheard of to find an educator who actively encourages students’ interpretation over reading materials that could challenge ideological presumptions (Pradita, 2018). Furthermore, reading comprehension in the ESL classroom has been criticised as ESL learners tend to have limited exposure to reading activities in the traditional classroom. In reference to the classroom experience in a traditional reading room, this has resulted in serious disadvantages for students: lack of motivation to learn, showing up to class unprepared, complete dependence on the teacher, and weak competition. This reflective experience demonstrates the need to incorporate a student-centred

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approach and contextualised reading practices into practice. Therefore, mobile technology, like other m-learning systems, should be employed as a means to enhance various student-centred practices so that they will be motivated and cooperative in creating a meaningful learning environment as well as contextualised learning opportunities. It is perceived to be a serious problem when students are unwilling to participate and collaborate in classroom activities hence, these will result in disruption of teaching processes.

Mobile Assisted Language Learning (MALL) also known to be a subfield of m-learning which refers to the integration of mobile tools and applications to support and enhance language learning inside and outside the classroom (Chinnery, 2006; Kukulska-Hulme & Shield, 2008). MALL addresses the issues of mobile implementation in language learning.

2. Research Methods

2.1. Participants

The targeted participants of the study were 30 undergraduate students of Universiti Tun Hussein Onn Malaysia (UTHM) from a technical faculty. They were the first year students, an intact class and identified as the experimental group for this research. These participants were indirectly being introduced to the reading comprehension practices derived from the Malaysian University English Test (MUET) during the pretest stage. The similar set of questions were provided on the posttest stage and their marks were recorded for data collection. The final stage was recorded when these students were provided with a Google Form survey on their perceptions towards m-learning. This instrument was the medium utilised by the educators in assisting the students' learning process in between both stages.

2.2. Research instrument

The following two research instruments were used for this study:

2.2.1. MUET

A set of MUET Reading Comprehension Test was used in this study as the system introduced by the Malaysian Examinations Council was perceived to be a standardised, validated and reliable test. In this study, the first-year technical students from UTHM were selected to be the respondents to the similar set of reading comprehension questions during the pretest and posttest stages. The reading component of the test battery was a two-hour task consisting of multiple-choice questions (MCQ) with either 3 or 4 options. There were a total of 6 texts with 45 questions of varying length and difficulty.

2.2.2. M-learning survey

Perceptions of M-learning were measured using a five-point Likert scale with "SA-Strongly Agree", "A-Agree", "N-Neutral", "D-Disagree" and "SD-Strongly Disagree" anchors. The set of questions were coded and analysed using Statistical Package for Social Science (SPSS) software, version

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23.0, and the outcomes as well as the figures were converted into descriptive, quantitative statistics and tables.

2.3. Data collection

A Google Form was created and distributed to evaluate the experimental group's perceptions towards m-learning. After one week, the researchers reviewed and analysed the responses to the data using SPSS version 23.

As the reliability testing was made, the validity and reliability analysis revealed that Cronbach's alpha coefficient was determined as 93 (α=0.93). The majority of Social Science study circumstances regard a reliability coefficient of 0.70 or above to be categorised as "acceptable" (Mockovak, 2016). Once the pretest and a posttest were administered to the students, the software was used to record the outcomes.

3. Findings

The questions in the questionnaire were divided into parts as a means to record the accurate outcomes. The questionnaire responses consisted of two parts: 1) respondents' demographic information and 2) perceptions of m-learning. In addition, students' results from the pretest and posttest were documented to determine the difference and effectiveness of implementing m-learning in the classroom. Hence, all the collected data was presented below.

3.1. Demographic information

The demographic characteristics of the respondents are summarised in Table 1. As shown in the table, female respondents dominated the study with 23 respondents which was equivalent to (76.7%). Meanwhile, male students who were involved in this study were only 7 and this was comparable to 23.3%. Majority of the respondents were Malays (90%) and the remaining were Chinese (10%).

Table 1. Demographic Information (n=30)

	Frequency	Percentage
Gender		
Male	7	23.3
Female	23	76.7
Race		
Malay	27	90
Chinese	3	10
Indian	0	0

3.2. Perception on M-learning

This section details the results on students' perceptions of m-learning. Table 2 shows the mean value of students' perceptions. There were fourteen questions to measure the perceptions. Based on the table below, flexibility was the most popular reason for students' positive attitude towards m-learning. They found flexibility in the learning process in the aspects of time, place, communication, testing, and as an autonomous learning tool. All these aspects contributed to a mean score of 4.0 and above. The

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remaining items depicted a mean of 3.73 to 3.97 in terms of students' confidence, beliefs, and goals towards m-learning platforms to support the learning process. The students' perceptions are perceived to be moderately high to high based on the mean scores in Table 3.

Table 2. The mean and Standard Deviation of each item of "perception" (n=30)

Item	Mean	Std. Dev
Studying through m-learning mode provides the flexibility to study at the time convenient to the learner.	4.0667	.78492
M-learning can enable people to study irrespective of where they are located in the world.	4.0333	.71840
There are technologies available to enable one to take tests and submit assignments electronically	4.1000	.66176
There are electronic tools available to enable interactive communication between instructor and student without meeting face-to-face	4.0000	.83045
I feel confident while using the m-learning system.	3.8667	.73030
I feel confident while operating m-learning functions.	3.8333	.83391
I feel confident while using m-learning content.	3.8000	1.03057
I believe m-learning platforms are user friendly.	3.9667	.76489
It would be easy for me to find necessary information when using an m-learning platform.	4.0000	.74278
I believe that using the m-learning service can simplify the-learning process.	3.9667	.80872
The set-up of the m-learning service is compatible with the way I learn	3.7333	.90719
I intend to use m-learning to assist my learning.	3.8000	.80516
I intend to use m-learning to update my subject knowledge with the latest amendments.	3.9333	.73968
I intend to use m-learning as an autonomous (free) learning tool.	4.0333	.71840

Table 3. Interpretation of Mean Score

Mean score (%)	Interpretation of mean score
1.0 - 2.0	Low
2.01 – 3.0	Moderate low
3.01 – 4.0	Moderate high
4.01 – 5.0	High

For the pretest and posttest, students were asked a series of reading questions drawn from the questions on the MUET English Comprehension Test. Table 4 shows the results of the pretest and posttest as the full score for both tests was 50.

Table 4. Reading test scores (n=30)

No.	Student	Pre Test	Post Test
1	Student 1	35.00	36.00
2.	Student 2	26.00	25.00
3.	Student 3	32.00	35.00
4.	Student 4	19.00	16.00
5.	Student 5	26.00	25.00
6.	Student 6	31.00	39.00
7.	Student 7	27.00	25.00
8.	Student 8	29.00	26.00

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9.	Student 9	32.00	35.00
10.	Student 10	38.00	40.00
11.	Student 11	30.00	36.00
12.	Student 12	27.00	25.00
13.	Student 13	30.00	33.00
14.	Student 14	25.00	20.00
15.	Student 15	31.00	38.00
16.	Student 16	30.00	30.00
17.	Student 17	7.00	8.00
18.	Student 18	21.00	24.00
19.	Student 19	29.00	27.00
20.	Student 20	30.00	34.00
21.	Student 21	19.00	17.00
22.	Student 22	33.00	29.00
23.	Student 23	29.00	32.00
24.	Student 24	19.00	20.00
25.	Student 25	22.00	31.00
26.	Student 26	28.00	25.00
27.	Student 27	19.00	19.00
28.	Student 28	31.00	39.00
29.	Student 29	30.00	28.00
30.	Student 30	30.00	27.00

Based on the above results, a t-test was conducted to determine if there was a difference in the results obtained by students after the implementation of m-learning in class. The results indicated that the mean scores for the pretest (M=27.17, SD = 6.18) and the posttest (M=28.13, SD = 7.75) were both similar. The results of the test are shown in Table 5.

Table 5. Mean Scores for Pretest and Posttest (n=30)

	N	Mean	Std. Deviation	Std. Error Mean
Pretest	30	27.1667	6.18164	1.12861
Posttest	30	28.1333	7.75368	1.41562

Table 6. One sample T-test (n=30)

					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Pretest	24.071	29	.000	27.16667	24.8584	29.4749
Posttest	19.873	29	.000	28.13333	25.2381	31.0286

Based on the t-test output mentioned in Table 6, the results exhibited a significant difference between the pretest and posttest with M= 27.17, SD = 6.18, t [30] = 24.1, p=0.001, and M= 28.13, SD = 7.75, t [30] = 19.9, p= 0.001. Therefore, it can be concluded that m-learning is effective in enhancing students' reading skills while also making the learning environment more engaging.

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4. Conclusion

According to the results, it is clear that students value and actively participate in online English learning. Although there are multiple challenges faced by the students, fellow educators and administration due to the abrupt adjustments to the educational system, the online learning environment offers various advantages in the context of English language learning. It is undeniable that this medium promotes flexibility, self-learning, reduces costs and offers convenience to some extent. Online learning is a fantastic option during the COVID -19 pandemic, despite its inability to completely replace face-to-face learning. In order to establish a more balanced learning environment for English, this study suggests that blended learning shall be taken into account. It is also recommended that further research needs to be conducted to evaluate the consequences of entirely online English instruction on students from various academic backgrounds and genders.

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