

Identifying reasons of mobile phone use during assessment among university ESL learners

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Abstract—Mobile phones can be very attractive to learners due to their small features. They can also allow learners to gain access to several features from anywhere and anytime. Past studies have indicated that mobile learning aids English for second language (ESL) learners more in specific language learning areas such as reading comprehension and vocabulary learning. The present study aimed to determine the level of mobile dependency among ESL students, as well as their purpose and perception of using mobile phones in a classroom reading assessment. A questionnaire was administered among 54 university students after they had completed a reading comprehension assessment. The findings indicate that most respondents use their mobile phones for translation purposes. Fortunately, the findings also show that there is low dependency on mobile phone use by the respondents. This study shows that, if used appropriately, mobile phones could serve as important tools for learning and assessment.

Keywords—mobile phone use, reading assessment, ESL learners, test of mobile phone dependency.

I. INTRODUCTION

Formative assessment is a means to gauge learners' knowledge and boost their motivation and commitment to learn (Meo & Marti-Ballester, 2020). In order for students to ace their assessments, they need to be active learners. Active learning can lead to effective knowledge attainment and inherent grasp of learning materials (Huang & Yu, 2019). Among recent methods to encourage active learning is mobile learning. Mobile learning has gradually become an uncomplicated and handy means for learners to intensively use for enquiring, getting information and acquiring knowledge due to its commonness and vital influence for educational purposes (Huang & Yu, 2019; Jaradat,

2014). Hence, students should be permissible to utilize different electronic devices such as computers, tablets, laptops or mobile phones to complete their test (Meo & Marti-Ballester, 2020). Mobile phones can be very appealing to students because of their pocket-sized feature and the fact that they can be carried easily allowing students to gain access to its features from anywhere and anytime (Aziz et al., 2018; Meo & Marti-Ballester, 2020) and it presents an innovative way to deliver content and to ease and simplify the learning process in the classroom (Jaradat, 2014).

The prevalent growth in the use of mobile devices such as mobile phones and tablets, and the fact that mobile technologies are aiding the development and assessment of educational environments for applicable learning activities has led scholars to evaluate whether they can be resourcefully used as a means for students to learn (Hoi, 2020; Jaradat, 2014; Kates., 2018; Meo & Marti-Ballester, 2020). Some studies found that students using mobile phones while performing learning activities were less engaged and displayed less critical thinking ability (Meo & Ballester, 2020). Although there are plenty of studies on mobile learning, comparatively little attention has been devoted to examining student's perception on the use of mobile phones for assessment (Meo & Marti-Ballester, 2020). According to Kates et.al. (2018), there is no clear agreement regarding the size and direction of the effects of mobile phone use on academic performance within the scholarly literature. Therefore, there is a need to conduct more research to decipher the significance of mobile phone use and its explicit implication on language teaching and learning quality (Jaradat, 2014). The main purpose of the study is to examine students'

use of mobile phones during reading assessments as well as their perception on its use.

Apart from that, past research suggests that mobile phone use has become such a significant part of a student's life that they do not necessarily apprehend their level of addiction to their phones (Yadav., 2021). In order to identify the level of which mobile phone use crosses the line from being a useful tool to being one that causes addiction to students, another purpose of the study is to assess the level of mobile phone dependency of students.

II. LITERATURE REVIEW

A. Mobile learning

There is an emerging trend of adopting digital technologies in classrooms and thus, it is increasingly vital to have a thorough understanding of technology use, in particular, the use of mobile phones for educational purposes. Klimova (2018) listed several features of mobile technology as follows:

- 1) Portability
- 2) Individuality
- 3) Unobtrusiveness
- 4) Availability
- 5) Adaptability
- 6) Persistence
- 7) Usefulness
- 8) Usability

Therefore, acknowledging their ubiquitous characteristics, mobile phones are nowadays widely used in education, including language learning (Klimova, 2018). According to Cho et al. (2018), mobile learning can be defined as any form of learning in which content or facilitated educational activities are carried out using mobile technologies as facilitating tools, whenever and wherever the learner desires. Wang (2016) defined mobile learning as a distinct type of electronic learning that is facilitated through mobile devices with distinctive features and Internet connection means. Mobile assisted language learning is defined as the use of mobile phones and other mobile devices in language learning, particularly on attainment of linguistic knowledge and skills as well as offering aid with communication using mobile technologies in circumstances where portability and set learning present specific benefits (Cho et.al., 2018; Hoi, 2020). Mobile phones allow learners to learn languages flexibly at a time and a place convenient to them, to retrieve information easily, and to adapt to their individual learning habits (Hoi, 2020). The second and third reasons can also be applied in classroom learning and assessment settings.

It has been shown that the function of mobile technologies in language learning not only can make students more content with their language learning but also facilitate them to attain better language learning performance (Huang & Yu, 2019). This is because students can be stimulated by the features of a mobile device to carry out effective interactions with each other and their educator (Jaradat, 2014). However, mobile devices have potential shortcomings primarily when used excessively as students can easily be grossly dependent on it (Yadav et.al., 2021).

B. Theories related to mobile learning and learning achievement

The main theories relevant to mobile learning are cognitive theory and activity theory. Mobile phone use among students is becoming increasingly prevalent even in classrooms. According to the cognitive theory of multimedia learning, mobile phone use for non-related learning tasks during classroom learning such as texting and social media use could impede a student's information processing, thereby decreasing learning performance (Kim et al., 2019). To ensure positive use of mobile phones for learning, educators need to focus on bridging its use with the learners' personal initiative.

Personal initiative is strongly linked to learning achievement (Huang & Yu, 2019). In order to attain learning outcomes, learners with higher personal learning initiative (PLI) are more prone to have the initiative to attain knowledge and initiatively overcome difficulties, which consequently leads to better learning performances (Huang & Yu, 2019).

According to activity theory, learning is described as a cultural and historical activity system, which is facilitated by tools that can aid or limit learners in acquiring knowledge and developing their skills (Meo & Marti-Ballester, 2020). According to Meo and Marti-Ballester (2020), the four factors related to learning activities using electronic devices are as follows:

- 1) Students' autonomy with a technology
- 2) Students' function (user-friendliness)
- 3) Students' satisfaction with a technology
- 4) Activities that could be completed using electronic devices for learning purposes

This study was influenced by the two theories mentioned above as students' perception and mobile phone dependency are linked to cognitive theory while their actual use of mobile phone during an assessment can reflect the autonomy and purpose of use via activity theory.

C. Past studies

The prevalent ownership of mobile devices has prompted scholars to consider them as prospective means to deliver learning content, and to contemplate the use of mobile devices as pedagogical support tools (Cho et.al., 2018). For instance, scholars have started to evaluate the effects of employing mobile devices in language learning and explore the design of mobile-learning interventions that can maximize the benefits of new technologies (Cho et.al., 2018). A review done by Klimova (2018) which explored the use of mobile phones and their apps for teaching the English language reported that mobile phone use, as a whole, brings positive results in language learning. Kim et.al. (2019) examined the use of mobile phones in classrooms to find the predictors of in-class phone use and the impacts of its use on students' learning achievement and grades. They conducted a long-term measurement study with 84 students in Korea by collecting a total of 196 704h of mobile phone usage data for 14 weeks. They found that the mobile phone use was over 25% of the classroom learning duration. According to a report cited in Cho et.al. (2018), 73% of teachers reported that they and/or their students used mobile phones for educational purposes in the classroom or when they worked on assignments. In Jaradat's (2014) study on students' attributes and perceptions towards using mobile phones in learning, a majority of the respondents preferred receiving language lessons on mobile phones and were positively satisfied when using it. This was also echoed in Wang's (2016) study in which learners expressed satisfaction and favorable attitudes toward the integration of mobile learning into classroom instruction.

However, the results in Jaradat's (2014) study also showed that there was insignificant improvement in learning even though the perception of mobile learning is positive among students. The finding was echoed in Cho et.al. 's (2018) study which found that the effects of mobile learning were minimal when measured via standardized tests. Additionally, according to the findings of a study done by Meo and Marti-Ballester (2020), although the use of mobile phones offers the flexibility to do tests, students were found to obtain lower scores, which may indicate that their greater perception of the benefits of mobile phones for learning purposes are offset by the disadvantages. Similar results were found in Yadev et.al. 's (2021) study in which over half of the participants were dependent on mobile phones and it affected their academic performance and changed their behavior. The study by Silva, Matos, Ezequiel, Lucchetti and Luccheti (2018) found a high frequency of abusive mobile phone use among students which was associated with greater levels of surface learning. These results also corresponded with Kates et.al. 's (2018) study which indicated that overall mobile phone use has a small negative effect on educational

outcomes which was consistent with the previous literature.

D. Mobile learning in reading comprehension

Nevertheless, past studies have suggested that mobile learning benefits learners more in specific language learning areas such as reading comprehension and vocabulary building. Learning more words, which includes more complex words, is an important part of being an advanced reader as reading itself is a language skill (Cho et.al., 2018). The intrinsic features of mobile learning can provide autonomy, flexibility, freedom and choice for students when doing their reading comprehension (Wang, 2016). Generally, research findings pointed to the effectiveness of mobile assisted language learning for vocabulary learning, reading comprehension, listening, speaking and grammar (Hoi, 2020). The most popular use of mobile phones, according to Aziz et.al. (2018) is that learners can learn vocabulary from the dictionary of their mobile phone, which proves very helpful in searching and learning new words with reading exercises in English. According to Cho et.al. (2018), students receiving language instruction using mobile learning will almost always outscore others on average. Wang (2016) examined the effectiveness of a self-paced mobile learning integration instruction in a classroom setting in promoting reading comprehension of the English Foreign Language (EFL) among the Taiwanese university students and found that those students gained significantly higher reading scores on the post-treatment test than those who were involved in the teacher-delivered instruction.

III. METHODOLOGY

The study was conducted in November 2020 in a Malaysian university in the northern region. The sample of this study was composed of conveniently selected and accessible 54 students who enrolled in an English language course during their first semester. The selected respondents are English as a second language (ESL) learners from three different engineering courses, divided into two classes. A validated questionnaire designed on a 5-point Likert Scale model was administered among the students of which 50 were male and 4 were female after they had answered a reading test. The reading assessment was part of their course evaluation and they had been asked for their verbal consent before answering the survey. All students in both classes agreed to participate in this study. The designed questionnaire had three aspects: the first aspect was related to the reasons of the respondent's use of mobile phone during the most recent reading test, the second component dealt with their perception of mobile phone use in a test, and the final section was related to

their mobile phone dependency. The final section utilized the test of mobile dependence, a standardized tool consisting of 22 items developed by Marino Choliz in 2012. The outcome of the questionnaire is to identify the following:

- 1) The main reasons respondents use their mobile phone during the recent reading test
- 2) Respondents' perceptions on mobile phone use during a reading test
- 3) Respondents' mobile phone dependency

After the collected data was processed, descriptive statistics (frequency count, percentage, mean and standard deviation) were used to analyze and interpret the data.

IV. FINDINGS & DISCUSSION

After their reading test, each student responded in the survey questionnaire that was given by the researcher, achieving a response rate of 100%. The descriptive statistics and findings are given in the following sub-sections.

A. Respondents' demographic profile

Table 1 shows the summarized demographic background of the 54 respondents. A total of 50 male and 4 female students participated in the study, with the majority aged 18 years old.

Table 1: Respondents' demographic background (N = 54)

<i>Sex</i>	<i>Male</i>	50 (92.6%)
	<i>Female</i>	4 (7.4%)
<i>Age</i>	<i>18</i>	40 (74.1%)
	<i>19</i>	10 (18.5%)
	<i>20</i>	3 (5.5%)
	<i>21</i>	1 (1.9%)

All respondents were semester 1 diploma students majoring in Engineering. Additionally, based on their Sijil Pelajaran Malaysia (SPM) English results, the respondents were of mixed English language proficiencies, ranging from grades A to E and everyone used a mobile phone during the administered reading test. When asked to rate their English reading proficiency, only 1 student rated it as excellent, 16 (29.6%) rated it as very good, 34 (63%) students responded it was average, and the remaining 3 deemed their reading skills as poor.

B. Reasons of actual mobile phone use during the study

The reasons for the participants to use their mobile phone during the reading test are tabled in Table 2 in order of frequency. Most students indicated that they

use their mobile phones to translate English words or sentences that are used in the reading test into Malay (83%) most probably for better comprehension or understanding of the reading article or question. This is followed by using their phone to translate Malay words or sentences into English (79.2%). This shows that students use mobile phones to help them build sentences as they have to answer in complete sentences in the English language. They think of the answer in the Malay language and then translate that into the target language. The vocabulary and overall comprehension issues faced by students are further reflected in the following three frequent reasons for mobile phone use which are to find meanings of English words in English (71.7%), to translate Malay ideas or answers or sentences into English (64.2%), and to find meanings of English words in Malay (62.3%). This is similar to the findings from Aziz et.al. (2018) in which students thought with the help of their mobile phones, they can improve their vocabulary.

Table 2: Reasons of mobile phone use during the most recent reading test (N = 54)

<i>To translate English words / sentences into Malay</i>	44 (83%)
<i>To translate Malay words / sentences into English</i>	42 (79.2%)
<i>To find meanings of English words in English</i>	38 (71.7%)
<i>To translate my Malay ideas / answers / sentences into English</i>	34 (64.2%)
<i>To find meanings of English words in Malay</i>	33 (62.3%)
<i>To find / refer to notes related to the test I was taking</i>	10 (18.9%)
<i>To read or listen to my WhatsApp messages / statuses</i>	8 (15.1%)
<i>To chat with another person about unrelated matters</i>	6 (11.3%)
<i>To take photo of the test paper (article / questions) for easy referencing when answering the test</i>	5 (9.4%)
<i>To take a selfie / selfies of my test experience</i>	3 (5.7%)
<i>To chat with another person about the test I was taking</i>	2 (3.8%)
<i>To listen to songs</i>	2 (3.8%)
<i>To get answer / answers of the test from a friend / friends</i>	2 (3.8%)
<i>To share answer / answers of the test with a friend / friends</i>	2 (3.8%)
<i>To paraphrase a sentence / sentences</i>	1 (1.9%)
<i>To search for related text of the test</i>	1 (1.9%)
<i>To chat with another person about the answer/answers for the question/questions of the test I was taking</i>	1 (1.9%)
<i>To watch videos</i>	0
<i>To use the voice recognition search application</i>	0

Interestingly, the remaining reasons are quite low in frequency which shows that most respondents had treated the reading test seriously by abiding to the necessary testing ethics even though they were allowed to use their mobile phone during the test. The findings also proved that students have more personal initiative to use mobile phones for translation and comprehension in order to achieve the test outcomes.

C. Perception of mobile phone use during a test

Table 3 shows the respondents' perception of mobile phone use in an English reading test.

Table 3: Perception of mobile phone use in a reading test (N = 54, M = mean, S.D = standard deviation)

No	Item	M	S.D
1	I think mobile phone use should be allowed during a test.	3.74	0.91
2	I think students should be allowed to chat with other people using mobile phones during a test.	2.26	1.03
3	I think students should be allowed to use mobile phones for translation purposes during a test.	4.02	1.09
4	I think students should be allowed to use mobile phones to refer to notes during a test.	3.30	1.09
5	I think students should be allowed to use mobile phones as a dictionary during a test.	4.20	0.94
6	I think students should be allowed to use mobile phones to listen to songs during a test.	2.56	1.34
7	I think students should be allowed to use mobile phones to watch videos during a test.	2.06	1.07
8	I think students should be allowed to use mobile phones to access social media apps or websites during a test.	2.46	1.08
9	I think students should be allowed to use mobile phones to take photos during a test.	2.26	1.10
10	I think students should be allowed to use mobile phones to discuss with others during a test.	2.15	1.05
11	I think students should be allowed to use mobile phones to paraphrase sentences during a test.	3.43	0.92

The findings shown in Table 3 reveal that a majority of the respondents perceived that students should be allowed to use mobile phones for translation purposes (M = 4.02, SD = 1.09) and as a dictionary (M = 4.20, SD = 0.94) during a test. These findings do correlate with the responses in Table 2 in which respondents were mostly shown using their mobile phones for translation and vocabulary finding purposes. Next, most respondents were rather neutral in their perception of

the overall use of mobile phones during a test (M = 3.74, SD = 0.91). Similar responses were made for allowing the use of mobile phones to refer to notes (M = 3.30, SD = 1.09) and for paraphrasing purposes (M = 3.43, SD = 0.92). On the other hand, the majority of the respondents perceived that chatting, listening to songs, watching videos, accessing social medias, taking photos and discussing with others via mobile phones should not be allowed during a test which shows most students would not cross the examination ethical practices that have been placed on them even when given a chance. The findings also correlate with the respondents' actual use of mobile phones in Table 2.

D. Respondents' general use of mobile phone

Table 4 shows the respondents' general use of mobile phones based on the test of mobile dependence.

Table 4: General use of mobile phone (N = 54)

No	Item	M	S.D
1	I have been called on or warned about using my mobile phone too much.	2.0 0	0.9 9
2	I have put a limit on my mobile phone use and I couldn't stick to it.	2.6 3	1.0 3
3	I have argued with my parents or family members about the cost of my mobile phone.	1.8 5	0.9 6
4	I spend more time than I would like to talking on the mobile phone or using WhatsApp and other social media apps.	2.9 1	0.8 7
5	I have sent more than five messages in one day.	3.9 1	1.0 1
6	I have gone to bed later or slept less because I was using my mobile phone.	3.1 5	0.9 4
7	I spend more money on my mobile phone (calls, messages, data) than I had expected.	2.7 4	0.9 6
8	When I'm bored, I use my mobile phone.	4.0 4	0.9 3
9	I use my mobile phone (calls, WhatsApp, online) in situations where, even though not dangerous, it is not appropriate to do so (eating, while other people talk to me, driving, etc.).	2.8 7	0.9 5
10	I have been criticized because of the cost of my mobile phone.	2.0 6	1.1 9
11	When I haven't used my mobile phone for a while, I feel the need to call someone, get online, or use WhatsApp or other social media apps.	3.0 7	0.9 7
12	Since I got my mobile phone, I have increased the number of calls I make.	2.7 6	0.9 7
13	If my mobile phone were broken for an extended period of time and took a long time to fix, I would feel very bad.	3.5 6	0.9 6
14	I need to use my mobile phone more and more often.	2.9 6	0.8 5
15	If I don't have my mobile phone, I feel bad.	3.3 0	0.8 6
16	When I have my mobile phone with me, I can't stop using it.	2.8 3	0.9 1

No	Item	M	S.D
1	I have been called on or warned about using my mobile phone too much.	2.0 0	0.9 9
2	I have put a limit on my mobile phone use and I couldn't stick to it.	2.6 3	1.0 3
17	Since I got my mobile phone, I have increased the number of messages I send.	3.3 0	0.9 4
18	As soon as I get up in the morning, the first thing I do is see who has called me on my mobile phone or if someone has sent me a message.	3.2 2	1.2 4
19	I spend more money now on my mobile phone than when I first got it.	2.8 1	1.0 5
20	I don't think I could stand spending a week without a mobile phone.	3.1 5	1.1 7
21	When I feel lonely, I use the mobile phone (calls, Internet, WhatsApp...).	3.6 7	1.0 5
22	I would grab my mobile phone and send a message or make a call right now.	2.8 0	1.1 4

The highest mean for mobile phone use is from item 8 (When I'm bored, I use my mobile phone – $M = 4.04$, $S.D = 0.93$) which shows there is a slight dependency on mobile phone use when students are bored. Instead of doing other non-virtual activities, students tend to fall back to their phones whenever they do not have anything to do or when they feel bored. However, the remaining item responses show that the target respondents are not overly attached to their mobile devices as most responses were either lower than 3 in terms of mean (in which a majority of respondents disagreed or strongly disagreed with the item statements) or within the neutral mean area (3) based on the standard deviation patterns. This proves that students, specifically the target respondents, are not too dependent on their mobile phones. The lowest mean comes from item 3 (I have argued with my parents or family members about the cost of my mobile phone – $M = 1.85$, $S.D. = 0.96$) which clearly shows all respondents disagreed that their mobile phone purchase causes financial dispute in their family. With the abundant choice of affordable mobile phones available in the market and the rise of usage for classroom learning, it comes as no surprise that most households in Malaysia value the benefits of using mobile phones and the positive effects they bring, especially for educational purposes.

A normality test was done to check whether the data generated in Table 3 and 4 were normally distributed and to decide the appropriate statistical measurement for a correlation analysis. There are several types of normality tests, namely the Kolmogorov-Smirnov test, the Anderson-Darling test, and the Shapiro-Wilk test. For this study, since the sample size is small ($N=54$), the Shapiro-Wilk test of normality was chosen. From the test, the p -value = 0.000 is less than 0.05, hence the

data was not normally distributed. Therefore, a non-parametric correlation method was adopted, namely Spearman rank correlation analysis. For non-normal distributions, correlation coefficients should be calculated from the ranks of the data, not from their actual values. Therefore, we used Spearman Rank Correlation for the analysis between such data. A Spearman coefficient is commonly abbreviated as ρ (rho) and ranges between -1 to +1. From the analysis, we obtained the value of $\rho = 0.43$. The correlation was statistically significant at 0.01% level (2-tailed). Therefore, we can conclude that there is a weak relationship between students' perception of mobile phone use during a reading test and their general use of mobile phones. In other words, students' use of mobile phones in general does not correlate with their use of such devices during their academic assessments. This is true as, based on the findings, the respondents are not heavily addicted to their mobile phones and still abide by the ethical regulations when doing their tests which restrict them from using several of the mobile phone features.

V. CONCLUSION

In contemporary years, mobile devices have become the most important technical and entertainment tool for people, especially students, around the world (Yadav et.al., 2021). Such technological advancement has created a novel learning mode – mobile learning. There are a rising number of instructors adopting mobile handheld technologies to support teaching and expand learning, and mobile devices are rapidly being applied to language pedagogy because they hold a great potential to provide learners with rich, real-time, convenient, contextual and continuous learning, especially in mobile assisted language learning (Wang, 2016). Mobile learning needs to be adopted to enhance students' learning experiences (Jaradat, 2014), so an informed understanding of students' perception and preferred use of mobile learning is critical to the successful application of mobile assisted language learning in a classroom (Hoi, 2020). In addition, lecturers need to consider how mobile devices can be used to enhance the learning experience and to strengthen and harmonize its overall strategy (Jaradat, 2014). The possibilities are wide and this study shows that, if used appropriately, mobile phones could serve as important tools for interactive learning and assessment to improve students' achievements, motivations and interests.

The limitation of this study is it was conducted with three groups of students at one university. Regarding learning performance, further investigation of the relationship between perception, attitude and results is required. Follow-up studies such as interviews to

qualitatively address learner's perceptions of or attitudes toward mobile learning can also be conducted to enrich our understanding towards the educational use of mobile technologies.

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