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The Acceptance Of Mobile Learning For The Subject Of Geography Among Pre University Students (Form 6)

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Abstract: 21st century technology and skills in education are two of the key issues in research over the years. Mobile learning has shown great potential of 21st century technology in education today. Technological developments such as mobile learning have changed the way students communicate, learn, think, and share information among them. This study was conducted to look at the acceptance of mobile learning among form 6 students in geography subjects. The quantitative method was used in this study involving 137 form 6 student from Pre University center located in the district of Kota Kinabalu, Sabah. All students taking geography subjects were taken as samples. Questionnaire was used as an instrument in this study, referred and modified from the Technology Acceptance Model (TAM) to determine the level of acceptance of mobile learning among form 6 students in Geography subject. The study involved a form 6 student from Pre University center located in Kota Kinabalu, Sabah. The results from statistical analysis show that the acceptance level of students on mobile learning is in the high level.

Keywords: *Mobile Learning, Acceptance, Technology Acceptance Model*

INTRODUCTION

Implementation of technologies such as mobile learning in teaching and learning especially in fieldwork activity is one of the way to enhanc the quality of 21st century education in Malaysia and in developing students'

soft skills. The re-branding of form 6 education has become one of the Ministry of Education's (MOE) initiatives in the Malaysian Education Development Plan (PPPM) 2013-2025 with a view to strengthening the form 6 education through enhancing the image, system and quality of education equivalent to other pre university education such as Matriculation (Malaysia Ministry of Education, 2013). Among the aspects of soft skills implemented in this system is include communication skills, teamwork, leadership, critical thinking, problem solving, information management, ethics, and more (Majlis Peperiksaan Malaysia, 2012).

Coursework such as fieldwork activity is one of the assessments which will be evaluated in the Malaysian High School Certificate (STPM). Fieldwork activity is seen as a context in which the benefits of mobile learning technology can be used. Particularly in collecting data, taking pictures, videos and audio recordings and saving interview notes (Herrington, Herrington, Mantei, Olney, & Ferry, 2009).

The concept of mobile learning is refers to application of E-learning anyway and everyway (Jarvis & Dickie, 2010). Technology implementation not only in the classroom but also outside the classroom where students adapt to the advancement of new technologies such as smartphones and tablets in their learning. This mobile technology is typically used to transfer information or provide information to users at any location (Masrom & Ismail, 2010), and to store multimedia data using a variety of mobile applications (K. E. Welsh, France, Whalley, & Park, 2012). However, teachers are aware of the use of technology in teaching and learning, but are unaware of its importance in facilitating student fieldwork activity (Dunn, 2012). Nowadays most students have mobile devices (K. Welsh & France, 2012) but they are unaware of its importance in helping to improve the quality of their learning (Woodcock, Middleton, & Nortcliffe, 2012).

1.1 Research Problem

In Malaysia, Mobile learning is only widely practiced at the higher learning institution. It is widely used in support of the teaching and learning system through the bring your own device policy to give students the flexibility to search and access information using their smartphone or tablet. On the contrary, the situation at form 6 education.

Due to existing educational policies that prohibit the use of mobile devices among students causing mobile learning has yet to be fully explored, especially at the Malaysian schools level (Sa'don, Dahlan, Ibrahim, & Fadzleen, 2013). Research on the use of mobile learning technology in teaching and learning activity have also been conducted in Malaysia but not many have touched on the use of technology in fieldwork activity (Amin & Norazah, 2013).

The success of implementing mobile learning will depend on human factors. Among the human factors involved are students' acceptance to use technology in their learning. It is found that, even if a student uses a mobile device regularly, it does not mean that he or she will be ready to use it in their learning activity (Supyan, Mohd Radzi, Zaini, and Pramela, 2012). The aims of this study are to look the acceptance of mobile learning among form 6 students in geography subjects fieldwork activity.

1.2 Benefits of Mobile Learning

Mobile devices are an easy-to-reach, affordable and accessible tool for students in the 21st century education (Grimus and Ebner, 2016), thus they have the opportunity to carry out their learning activities using mobile devices without the constraints of space and time (Ch'ng & Samsudin, 2013)

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Learning systems assisted with the use of mobile devices have the benefit of pedagogical development such as student-centered learning and the ability to make any space or place a learning place (Franklin, 2011). As students become more aware of the use of mobile devices in their learning, it will lead to more effective use of mobile learning (Song, Murphy, & Farley, 2013). It further enables teachers to build a new community of learning ecosystems. This is because most students today use smartphones, iPads, tablets and iPod devices to keep in touch and discuss among them (Berge & Muilenburg, 2013).

The use of mobile technology in mobile learning is expected to create learning spaces that connect students globally and can challenge and transform our educational institutions into 21st century education that

creates a more complex learning environment. In addition, support from the school and the education system is also needed. This is because it is a key factor in the successful use of mobile learning implementation in our education system (Al Tabib, Daud, Mahmud, & Ayub, 2016).

Geography is one of the subjects that is still using the tradisional way of memorizing facts without technology skills. In addition to geography skills topics, building bar graphs and lines are using Microsoft Excel, other topics in this course are taught manually. The lack of technology integration in geography subjects is one of the reasons why students are less interested in it (Lateh & Muniandy, 2011).

1.3 Mobile Learning in Fieldwork Activity

Mobile learning can improve data collection efficiency, analyze field data faster and reduce data processing time in schools, which is often the cause of problems in preparing fieldwork reports especially for form 6 students. The use of mobile learning in fieldwork activity is not widely used in form 6 teaching and learning practices. Teachers need to show students how to integrate mobile learning in fieldwork (Constantinidis, Chang, Lewi, Saniga, & Sadar, 2013). Implementing mobile learning in their fieldwork activity will enable students to learn new skills in applying 21st century technology and soft skills within themselves by integrating their own learning experiences (Fuller & France, 2014). It provides students with opportunities to do technical research skills such as data collection, data analysis, and others (Dunn, 2012). In addition, the implementation of mobile learning in fieldwork activity can reduce the pressure on the cost of conducting fieldwork and increase student digital literacy. It can also reduce the boundaries between formal and informal learning systems by using mobile devices (Welsh dan France, 2012).

The application of mobile technology using smartphones as a tool can increase student engagement in fieldwork activities and in turn will help teachers focus more especially on implementation processes to be completed within a set time frame (Jarvis, Tate, Dickie, & Brown, 2016). Cheon, Lee, Crooks, & Song (2012) and Martin & Ertzberger,

(2013) found that using mobile devices through mobile learning helps in the development of self-learning, collaborative learning and informal learning beyond the classroom.

1.4 Technology Acceptance Model

Technology Acceptance Model (TAM) developed by Davis, Bagozzi dan Warshaw (1989) (Davis, Bagozzi, & Warshaw, 1989) F. D. Davis, R. Bagozzi, and P. Warshaw. It is a combination of several theories of behavior and is used specifically in technology implementation. Through this model, the acceptance of a technology is a key factor in determining its success in implementing technology in an activity. Implementation of technologies that are considered doesn't add any value in any activity is considered unsuccessful (Davis et al., 1989). TAM is used to determine perceived usefulness and level of perceived ease of use affecting their acceptance of mobile learning N. Park, R. Roman, S. Lee, and J. E. Chung. Davis et al., (1989) defined perceived usefulness as "the extent to which a person believes that using a particular system will improve or improve his or her work". Whereas perceived ease of use is "how much one believes that using a particular system dosent need any effort". These then lead to individual behaviour intention and actual behaviour.

Acceptance of new technologies is a prerequisite for seeing the success of technology-based learning; Therefore, studies on students' acceptance of technology may contribute to the development of technology implementation in mobile learning (Putra, 2016) D. M. Putra.

METHOD

2.1 Population and Sampling

This research involved form 6 school located in the Kota Kinabalu district of Sabah. The sampling method used is the purposive sampling. It is a method of selecting a sample based on specific research needs and characteristics (Frey, Carl & Gary, 2000). All 137 students taking geography subjects were taken as study samples. Students from each

school will conduct fieldwork activity according to their respective schools and the fieldwork will be according to the schedule provided by their schools base on the manual provided by the Malaysian Examination Council. The sample of the study selected has the same characteristics as form 6 students between 18 and 19 years old.

2.2 Instruments

The instrument is built based on the technology acceptance model instrument developed by Davis et al. (1989). The purpose of this instrument is to measure the acceptance of mobile learning among form 6 students in geography subjects fieldwork activity through the following attributes: usefulness, ease of use, social influence, actual use, and behavioral intention to use.

RESULTS

The findings of the students' level of acceptance of mobile learning in geography fieldwork activity are shown in the table below.

3.1 Participant Profile

The respondents in this study were 137 students consisting of students taking form 6 geography subjects in Kota Kinabalu district. From the data obtained, 31.4% (n = 43) were male, and 68.6% (n =94) were female students. This indicates that female students are the majority of respondents in this study. Data distribution on respondents' gender is shown in Table 1.

Table 1. Number and Percentage of Respondents by Gender

Gender	Simple (n=137)	Percentage (%)
Male	43	31.4
Female	94	68.6

3.2 Mobile Learning Acceptance Levels

Data were analyzed using Statistical Package for the Social Sciences (SPSS) version 22 software which included descriptive statistics methods such as mean and standard deviation. For the purpose of analyzing the level of student acceptance of mobile learning in form

6 geography subjects, the level of measurement such as Table 2 has been used as a result of modified from Pallant (2011) view.

Table 2. Interpretation of Min Score

Mean score	Interpretation (Level)
0.0 to 1.66	Low
1.67 to 3.33	Moderate
3.34 to 5.00	High

Table 3. Mobile Learning Acceptance in fieldwork activities Levels

Construct	Items	N	Mean	S. D	level
Perceived usefulness	PU1	137	5.16	1.426	High
	PU2	137	5.28	1.230	High
	PU3	137	5.51	1.132	High
	PU4	137	5.42	1.180	High
Perceived ease of use	PE1	137	5.35	1.128	High
	PE2	137	5.37	1.176	High
	PE3	137	5.05	1.178	High
	PE4	137	5.28	1.149	High
	PE5	137	5.40	1.141	High
Social influence	SI1	137	5.47	1.295	High
	SI2	137	5.53	1.170	High
	SI3	137	5.52	1.243	High
	SI4	137	5.51	1.255	High
Actual use	AU1	137	5.47	1.164	High
	AU2	137	5.39	1.107	High
	AU3	137	5.48	1.099	High
	AU4	137	5.42	1.041	High
	AU5	137	5.32	1.091	High
Behavioral intention to use	BI1	137	5.29	1.183	High
	BI2	137	5.28	1.294	High
	BI3	137	5.26	1.196	High
	BI4	137	5.35	1.216	High

The analysis shows that students believe that mobile learning is very useful where it is at a high level with a PU value of 5.34. PE is 5.29. The findings also show that students will be more motivated in mobile learning if they have the support of the school, teachers and peers where it is at the level of SI with a mean score of 5.50.

Students also find that mobile learning can help them to complete their fieldwork repots and thus improve their achievement by being at a high level with an AU value of 5.41. Furthermore, mobile learning

also affects student behavior which is at a high level with a BI value mean score of 5.29.

The findings of this study show that the use of mobile learning in fieldwork activity is more effective than conventional methods. The findings of this study are consistent with the findings of Karch (2014) who report that the use of mobile learning is very effective both in the classroom and outside the classroom. In order to ensure the meaningful and effective use of smartphones/tablets must be changed focus to the educational pedagogy need towards 21st century learning.

Incorporating technology into the teaching of 21st century skills will encourage students to actively participate in their learning (Larson & Miller, 2011) and further encourage the development of mobile learning in fieldwork, which will foster self-directed learning that will enable students to optimize their understanding and learning through mobile devices (Sa'don et al., 2013).

DISCUSSION AND CONCLUSION

Mobile technology has great potential for facilitating students' self-study in geographic subjects especially in fieldwork activity (Chen & Wang, 2015). To achieve this, the emphasis on the needs of teachers and students should be given priority in teaching and learning. In terms of teaching, the development of mobile learning, the school should provide basic facilities to enable teachers to apply mobile learning both at school and outside of school. Based on preliminary research, it is found that the level of student acceptance of mobile learning is high level.

However, students still need sufficient guidance in learning the use of mobile learning in fieldwork activity. The design of a mobile learning module or guide is essential to guide students and help students to better understand the application of mobile learning in fieldwork activity not only in geography subject but also in other subjects.

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REFERENCES

Al Tabib, M., Daud, S. M., Mahmud, R., & Ayub, A. F. (2016). *Mobile Learning Utilization : A Proposed Model to Investigate an Important Predictors of Mobile Learning Utilization and Measure The Role of Behavioral Intention As A Mediator Variable. Journal of Applied Sciences Research, 12(11), 31–43.*

Amin, E. M., & Norazah, M. N. (2013). *Mobile Learning : Malaysian Initiatives & Research Findings. (M. A. Embi & N. M. Nordin, Eds.) (1st ed.). Kuala Lumpur: Centre For Academic Advancement, Universiti Kebangsaan Malaysia.*

Berge, Z. L., & Muilenburg, L. Y. (2013). *Handbook of Mobile Learning. Routledge. https://doi.org/10.4324/9780203118764.ch3*

Ch'ng, L. K., & Samsudin, Z. (2013). *Integration of Mobile Devices into Ubiquitous Learning by the 21st Century Teenagers. Education, 3(6), 362–374. https://doi.org/10.5923/j.edu.20130306.12*

Chen, C. M., & Wang, Y. H. (2015). *Geospatial education in high schools: Curriculums, methodologies, and practices. In Geospatial Technologies and Geography Education in a Changing World: Geospatial Practices and Lessons Learned. https://doi.org/10.1007/978-4- 431-55519-3_6*

Cheon, J., Lee, S., Crooks, S. M., & Song, J. (2012). *An investigation of mobile learning readiness in higher education based on the theory of planned behavior. Computers and Education. https://doi.org/10.1016/j.compedu.2012.04.015*

Constantinidis, D., Chang, S., Lewi, H., Saniga, A., & Sadar, J. (2013). *Designing Fieldwork with Mobile Devices for Students of the Urban Environment. Proceedings.*

Davis, F. D., Bagozzi, R., & Warshaw, P. (1989). *User acceptance of computer technology: a comparison of two theoretical models. Management Science, 35, 181–192. https://doi.org/10.1287/mnsc.35.8.982*

Dunn, S. (2012). *Using GIS and handheld technology to enhance fieldwork. Royal Geographical Society.*

Franklin, T. (2011). Mobile Learning : *At the Tipping Point. The Turkish Online Journal of Educational Technology, 10(4), 261–275.*

Fuller, I., & France, D. (2014). *Fieldwork Going Digital. Developments in Earth Surface Processes. https://doi.org/10.1016/B978-0-444-63402-3.00008-X*

Grimus, M., & Ebner, M. (2016). *Mobile Phones and Learning Perceptions of Austrian Students, aged 11 to 14 Years. World Conference on Educational Media and Technology, (July), 106–115.*

Herrington, J., Herrington, A., Mantei, J., Olney, I., & Ferry, B. (2009). *Using mobile technologies to develop new ways of teaching and learning. New Technologies New Pedagogies Mobile Learning in Higher Education.*

Jarvis, C., & Dickie, J. (2010). *Podcasts in support of experiential field learning. Journal of Geography in Higher Education. https://doi.org/10.1080/03098260903093653*

Jarvis, C., Tate, N., Dickie, J., & Brown, G. (2016). *Mobile Learning in a Human Geography Field Course. Journal of Geography, 115(2), 61–71. https://doi.org/10.1080/00221341.2015.1026373*

Lateh, H., & Muniandy, V. (2011). *GIS dalam pendidikan geografi di Malaysia : Cabaran dan potensi. Malaysian Journal of Society and Space, 1(1), 42–52.*

Martin, F., & Ertzberger, J. (2013). *Here and now mobile learning: An experimental study on the use of mobile technology. Computers and*

Education, 68, 76–85. https://doi.org/10.1016/j.compedu.2013.04.021

Pallant, J. (2011). *A step by step guide to data analysis using SPSS. Alen & Unwin.*

Putra, D. M. (2016). *The Influence On Factors In Attitudes Toward Acceptance Of The Information System Using Technology Acceptance Model (TAM) Case Study SPAN System In Indonesia. INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH, 5(04). Retrieved from www.ijstr.org*

Sa'don, N. F., Dahlan, H. M., Ibrahim, A., & Fadzleen, N. (2013). Usage of mobile learning in Malaysian secondary education: Stakeholders' view. Journal of Information Systems Research and Innovation, 6, 42–50.

Song, H. S. Y., Murphy, A., & Farley, H. (2013). *Mobile devices for learning in Malaysia : Then and now. In 30th Ascilite Conference 2013 Proceedings (pp. 830–834).*

Supyan, H., Mohd Radzi, M., Zaini, A., & Pramela, K. (2012). *Mobile learning readiness among Malaysian students at higher learning institutes. Asian Social Science, 8(12), 276–283. https://doi.org/10.5539/ass.v8n12p276*

Welsh, K. E., France, D., Whalley, W. B., & Park, J. R. (2012). *Geotagging Photographs in Student Fieldwork. Journal of Geography in Higher Education. https://doi.org/10.1080/03098265.2011.647307*

Welsh, K., & France, D. (2012). *Smartphones and fieldwork. Geography, 97(Spring), 47–51. Woodcock, B., Middleton, A., & Nortcliffe, A. (2012). Considering the Smartphone Learner: developing innovation to investigate the opportunities for students and their interest. StudentEngagement and Experience Journal. https://doi.org/10.7190/seej v1i1.38*