

THE ACCEPTANCE AND USE OF WHATSAPP MOBILE INSTANT MESSAGING FOR LEARNING SUPPORT

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Article history

Received date : 11-6-2023

Revised date : 12-6-2023

Accepted date : 25-7-2023

Published date : 15-8-2023

To cite this document:

Deraman, A., & Abd Rahman, M. S. (2023). Implementation of the topsis method in determining the best physics learning media aid with roc weighting. *Journal of islamic, social, economics and development (JISED)*, 8 (55), 485 – 493.

Abstract: *This study is based on the previous work that had done by So, S. (2016) at a university in Hong Kong with three main research's objective including test the performance of WhatsApp acceptance, determine of the main predictor of change, and establish and testing model of acceptance and use. The performance was measure by given the academic pre-test and post-test both to the experiment and control group of students. Besides the traditional classroom learning for both groups, the experimental group was also supported with softcopy materials and the interaction via WhatsApp outside face-to-face hours. Meanwhile, the participants of the control group used WhatsApp only for academic communication. Pre-test scores were used as the covariate. The marginal means on the post-test scores showed that the participants in the experimental group performed better than those in the control group. The intervention of WhatsApp improved the learning achievement of the participants. The determination of main predictor of change was identify by performing the Principal Component Analysis (PCA) to the sub divided of WATQL provided by So, S. (2016) which classified 4 main component including Perceived of Usefulness (PU), Perceived Ease of Use (PEOU) and Effort Expectancy (EE) as Independent Variable (IV) and acceptance of WhatsApp for learning support (ACCEPTANCE) as dependent variable (DV). The questionnaire was administered at the end of the study by given the Google Form link through CSC134 students WhatsApp group in volunteer mode. The Multiple Linear Regression (MLR) analysis had used to do the hypothesis testing, which found that there were exist enough evidence to conclude that all the IV components were predicting the DV, therefore the model is accepted and useful to predict the acceptance and used of WhatsApp to support learning.*

Keywords: *Acceptance and use, WhatsApp, Learning Support.*

Introduction

The number of social media and platforms drastically increased to become the most important applications of the Internet (Aichner et. al., 2021), and the mobile instant messaging (MIM) had revolutionized education to be more effective and efficient for everyone at anywhere and anytime (Ningsih, et al. ,2023).

WhatsApp was a common MIM media used by the educational fields (Ningsih et. al., 2023) and significantly encouraged students in motivation and achievement which enrich in many skills (Alamer et al.,2023). It has becoming as alternative online learning media because of their so many useful features including WhatsApp groups, broadcast messages, WhatsApp web, starred messages, exchanging voice notes or documents. Video, photo, voice recording, etc. can be deliver by teacher to student or vice versa or peer to peer sharing among students (Baguma et al.,2019)

Literature Review

Undoubtedly, social media has become the most popular activity on Internet which over 4.26 billion users worldwide. The number of people was estimated to increase to six billion in 2027. That's mean more than two thirds of the world's population. Meanwhile, 78.5 percent of Malaysian become the active users of social media which estimated to increase to 91.7 percent of total population (Statista, 2023).

Statista (2013), a data analysis portal had ranked the most popular social media worldwide by comparing the number of active users which are led by Facebook, then followed by YouTube, next WhatsApp, and fourth Instagram.

At the other hand, the most popular social media in Malaysia was WhatsApp MIM. The research by Statista which published in 2022 found that 98.7 percent of Malaysian respondent choose WhatsApp application as their favorite social media. Figure 1 shows the most popular social media platform in Malaysia.

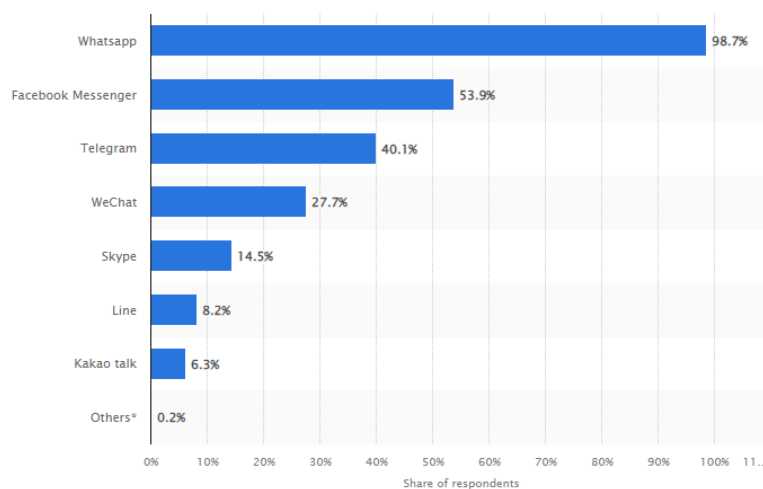


Figure 1: The most popular social media platform in Malaysia

Granić, A., & Marangunić, N. (2019) had done a systematic review of Technology Acceptance Model (TAM) in education by done search on EBSCO Discovery Service that cover studies of 15 years from 2003 – 2018. They provided an overview of TAM application and found that the model and their extended version had credible in acceptance of technology in learning.

Suci et al. (2022), had done review in the collaborative learning which analyse the paper published 2015-2020 on accepted and used of social media in learning in higher education. They found that social media can be used to support learning activities because it is easy to use and popular among students.to achieve the goals and needs of online learning.

Another review was done by Yee et al., (2021) on Unified Theory of Acceptance and Use of Technology (UTAUT) and their extended model in education to describe technology acknowledgement and employment. The acceptance theory was developed and establish by researcher nearly five decades which started with the Theory of Reasoned Action (TRA) in 1975 by Fishbein and Ajzen, followed by Innovation Diffusion Theory (IDT) in 1983 by Rogers and so on (Yee et al., 2021).

The TAM model was upgraded by Venkatesh, V. and Davis, F.D. (2000) which extended more variables and named as Extended TAM or also called TAM2 model. This transformation had to be done to cater to the invention of smartphone technology. The establish of social media had push the researcher to develop more capability model to full fill the current situation needs of the acceptance and use studies, which put the TAM model be upgraded one more time by Venkatesh & Bala (2008) and call as TAM 3 model. Table 1 summarizes the list of technology acceptance and use of model (Yee et al., 2021).

Table 1: The List of Technology Acceptance and Use of Model

Theory/Model	Acronym	Develop By	Year
Theory of Reasoned Action	TRA	Fishbein and Ajzen	1975
Innovation Diffusion Theory	IDT	Rogers	1983
Social Cognitive Theory	SCT	Bandura	1986
Theory of Planned Behaviour	TPB	Davis, Bagozzi and Warshaw	1989
Model of PC Utilization	MPUC	Thompson, Higgins and Howel	1991
Motivational Model	MM	Davis, Bagozzi and Warshaw	1992
Technology Acceptance Model	TAM	Taylor and Todd	1995
Combined TAM and TPB	C-TAM-TPB	Taylor and Todd	1995
Unified Theory of Acceptance and Use of Technology-1	UTAUT1	Venkatesh, Morris, Davis and Davis	2003
Unified Theory of Acceptance and Use of Technology-2	UTAUT2	Viswanath,Venkatesh, James Y, L. Thong and Xin Xu	2012

Research Method

This research studied the acceptance and use of WhatsApp MIM to support the learning of CSC134 course which collects data from the experiment that done on the student who enroll the course as mentioned above. Figure 2 below shows the setup and procedure of the research study. There was exist 8 group/ class of student with the set of 15 -30 student for each group, the faculty of FPA was make free to their student to register in any group with the principle of “First come, first serve”. I was entrusted to teach the DPMs student with the group of M3AT1102A, M3AT1102B, M3AT1102C and M3AT1102D which cover 50 percent of CSC134 students in this campus for this semester. This condition provides the golden opportunity for me to take an exam and practice the experiment that had been done by S. So., (2016).

The group M3AT1102B was assign as the control group who just only used the WhatsApp for administration only and the group M3AT1102C was assign as the experiment group which they need to be an active student in using WhatsApp to support the learning of CSC134 course. Meanwhile, the rest of the group assume as experiment group which they are familiar to use WhatsApp to support the learning at the beginning of the semester especially when due of formal test was came. For the experiment implementation, all the groups of students were given the pre-test a week early which was taken from the previous semester before the real formal test. The result of the test had been used to compare the performance between the experiment and control group. At the end of the semester, students were invited through the established WhatsApp's group to be involved in volunteer mode to fill-in the survey that can achieve by clicking the link of Google Form which include in the WhatsApp's messages. Figure 2 below shows the setup and procedure of experiment that was examined based on S. So. (2016).

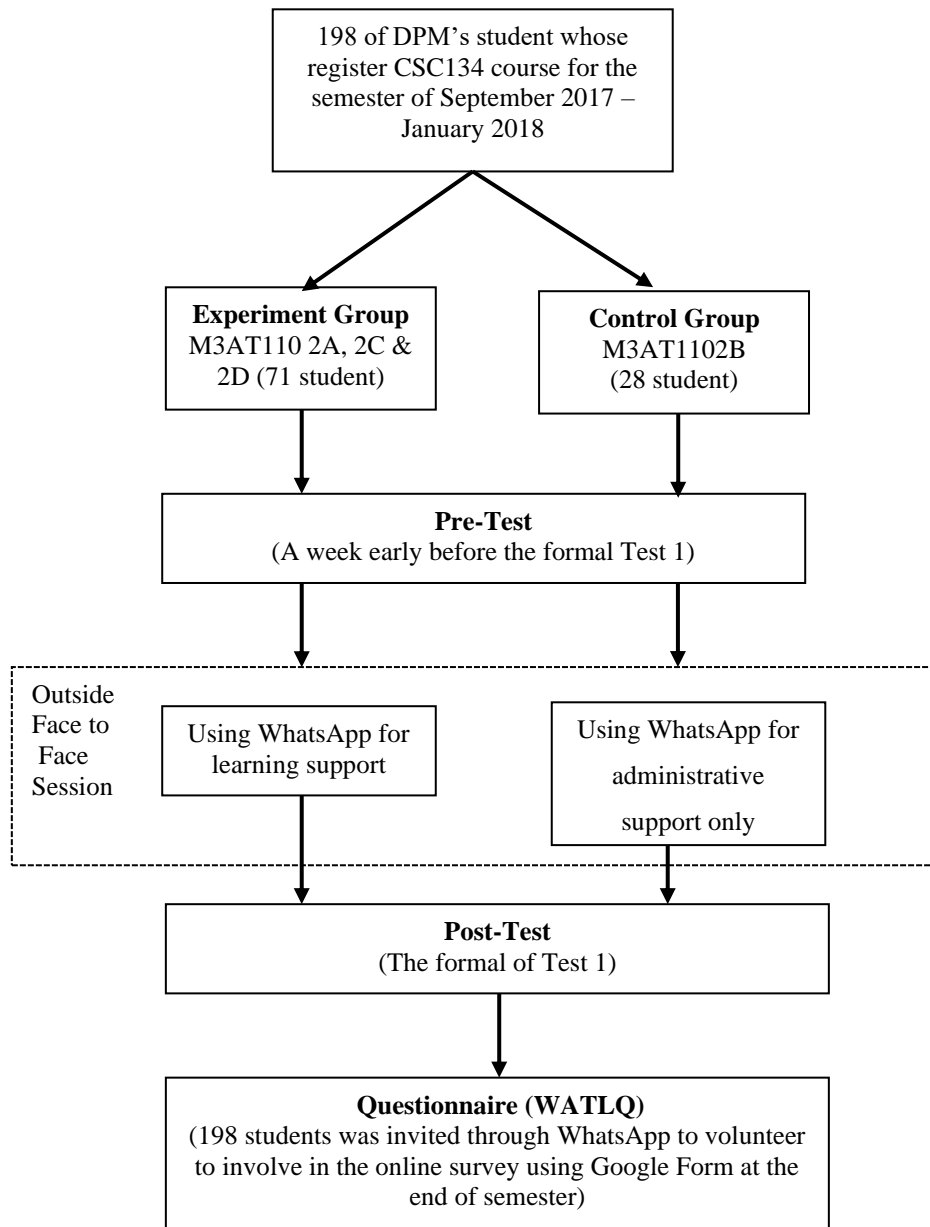


Figure 2: The Setup and the Procedure of the experiment Base on S. So. (2016)

The responses data then can be downloaded in the type of compress file or zip file which can be open using software tool to decompress and save in other type of file format like MS Excel. This responses data files need to be clean from the unrelated data like the time-stamps data which automatically recorded by Google Form.

Figure 3 below shows the proposed research model for acceptance and use of WhatsApp to support the learning which combines the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology UTAUT base on S. So, (2016). The model below was extracted after running the analytical process of Principal Component Analysis (PCA) using IBM SPSS software tool.

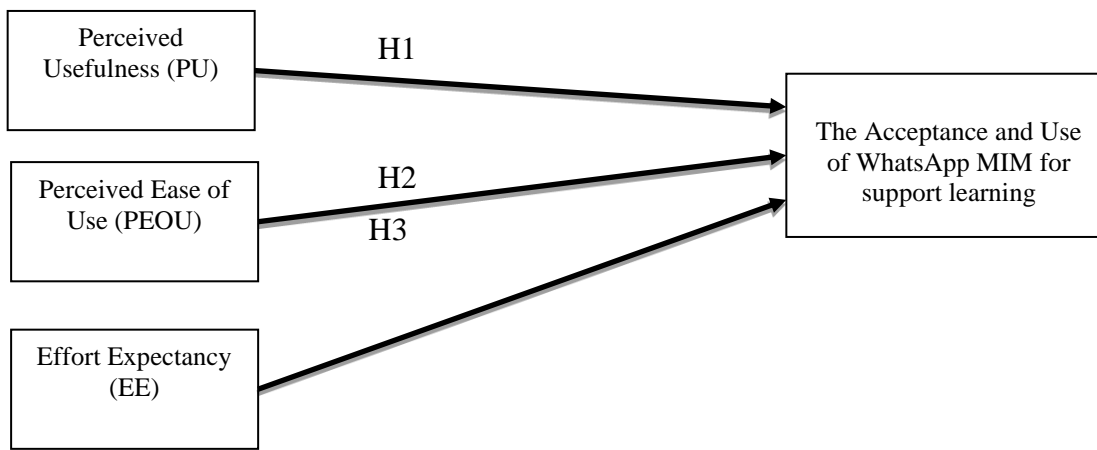


Figure 3: The Proposed Research Model for Acceptance and Use of WhatsApp for Learning Support

The variable (Independent and Dependent Variable) was adapted from WATLQ which was developed by S. So (2016). The hypothesis of the study is as below:

H1 - Perceived Usefulness (PU) will significantly predict the acceptance and use of WhatsApp MIM for learning support.

H2 - Perceived Ease of Use (PEOU) will significantly predict the acceptance and use of WhatsApp MIM for learning support.

H3 - Effort Expectancy (EE) will significantly predict the acceptance and use of WhatsApp MIM for learning support.

Analysis and Finding

The demographic data of the sample is discussed in terms of seven characteristics including gender, groups of students, urbanization, family income, experience in WhatsApp acceptance, number of WhatsApp groups, and time spent per day. Based from the findings, most of the respondents who answered the questionnaires are female (59.2%), majority respondents are from the groups M3AT1102A, M3AT1102B, M3AT1102C and M3AT1102D of students which I was teach (61.2%), live in urban and sub-urban (57.9%), family income RM1000 – RM3000 (54.6%), WhatsApp user since secondary school (78.3%), involved in below 10 group of WhatsApp (36.2%) and spent time more than 5 hours per day for WhatsApp (37%). Table 2 shows the demographic data of respondent.

Table 2: The demographic data of respondent

Item	Frequency	Percent
Gender		
Male	62	40.8%
Female	90	59.2%
Group		
M3AT1102A	23	15.1%
M3AT1102B	27	17.8%
M3AT1102C	25	16.4%
M3AT1102D	18	11.8%
M3AT1102E	19	12.5%
M3AT1102F	14	9.2%
M3AT1102G	13	8.6%
M3AT1102H	13	8.6%
Urbanization		
Urban	58	38.2%
Sub urban	30	19.7%
Rural	64	42.1%
Family Income		
Under RM1000	32	21%
RM1000 – RM3000	83	54.6%
RM3001 – RM5000	25	16.4%
RM5001 – RM10000	11	7.2%
Over RM10000	1	0.7%
WhatsApp acceptance		
This semester	0	-
From semester 1	11	7.2%
From Secondary School	119	78.3%
Around 5 years	18	11.9%
More 5 years	4	2.6%
WhatsApp Group		
1 group only	0	-
Below 2 groups	0	-
Below 5 groups	19	12.5%
Below 10 groups	55	36.2%
Below 15 groups	28	18.4%
Below 20 groups	24	15.8%
More 20 groups	26	17.1%
The Time Spent for WhatsApp		
5 minutes per day	10	6.6%
30 minutes per day	19	12.5%
1 hour per day	14	9.2%
2 hours per day	26	17.1%
5 hours per day	33	21.7%
More 5 hours per day	50	32.9%

All the hypothesis was accepted with high significant. But, when it goes to the individual relationship between $PU \rightarrow ACCEPT$, $PEOU \rightarrow ACCEPT$, and $EE \rightarrow ACCEPT$ it was quite weak in term of R Square which below 50% of common rule (W. M. Amir B. W Ahmad et al., 2015). The Figure 4 below shows that all of Independent Variable (IV) was significantly predict the Dependent Variable (DV) or ACCEPTANCE with the significant value, $p = 0.000$ for all of the IV. At the other hand, the strength of relationship quite weak which all the R Square value, R Square = 0.461, 0.299, 0.122 which were below than 0.5. But all the variable was significant. So, the assumption was fulfilled, and the model is accepted and useful to predict the acceptance and use of WhatsApp for learning support.

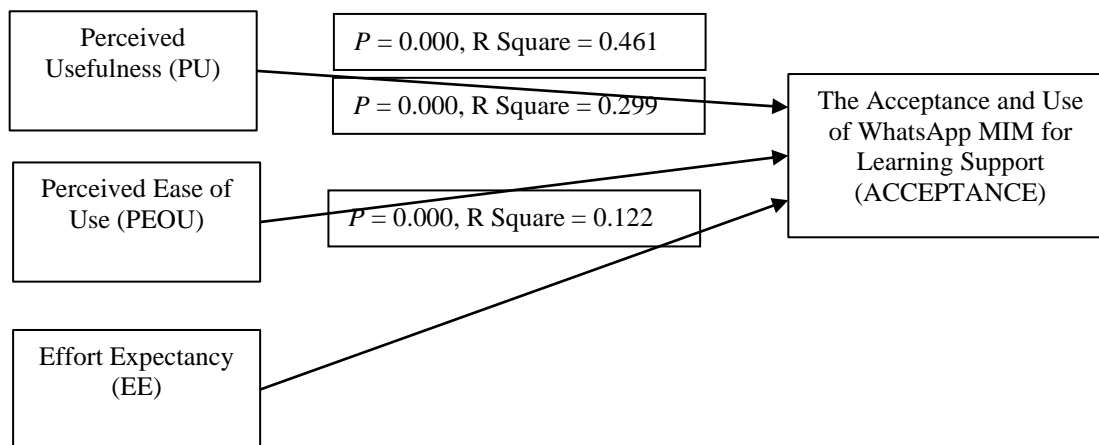


Figure 4: The Significant and R Square of Acceptance Model

The model was confirmed and useful to predict the acceptance and used of WhatsApp for learning support. It was support by the claim and finding of the based paper of study by So, S. (2016). Based on the result, we can confirm the assumption finding of the study as below:

- a. Perceived Usefulness (PU) significantly predicts the acceptance and use of WhatsApp MIM for learning support.
- b. Perceived Ease of Use (PEOU) significantly predicts the acceptance and use of WhatsApp MIM for learning support.
- c. Effort Expectancy (EE) significantly predicts the acceptance and use of WhatsApp MIM for learning support.

The examined of the So, S. (2016) work was done successfully which all the result of this study support all the finding by So, S. (2016) which the intervention of WhatsApp can support the learning.

The research framework was designed carefully and was implemented successfully. The literature review was done in depth which was come out with the research problems and research questions. The pre-test and post-test result show the improvement of learning performance of students who accept and use the WhatsApp for learning support which clearly solve the first research question (RQ1), the principal component analysis (CPA) was come out with the 4 main component of variables item and it was solve the second research question (RQ2), and the analysis of finding prove that the model of acceptance and use of WhatsApp for learning support was significant and useful, and this was answer the third or last research (RQ3). The finding analysis shows that all the research questions were clearly answered, and the study was successfully done.

Conclusion and Recommendation

This research was successfully examined the previous work that had done by So, S. (2016) at university in Hong Kong. The biggest contribution of this study is the determination of the main predictor of change toward acceptance and use of WhatsApp for learning support and the second contribution is to establish and tested the model of acceptance and used of WhatsApp for learning support. In future, this study should be extended to a bigger population of higher learning with details support activities and across other type of mobile instant messaging to provide more ubiquitous learning support.

Acknowledgments

Firstly, I wish to thank Allah SWT. My Selawat and Salam to Rasulullah SAW. My gratitude and thanks go to my supervisor Dr Fauziah Redzuan whose was willing to teach me to work on this research. My appreciation goes to my examiner, Dr Ahmad Iqbal Hakim Suhaimi, my senior and colleague, Assoc. Professor Wan Hartini Wan Hassan and Assoc. Professor Dr Abdul Rauf Ridzuan who's willing to devoting valuable time to guide me in statistic and SPSS with step-by-step guide. Special thanks to my colleagues and friends for helping me with this project. Finally, this paper is dedicated to my family on the patience and enthusiasm due to my circumstances. This piece of victory is dedicated to all of you.

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