

# **The Effect of WhatsApp Application Usage on Student Achievement in Business-based Subjects**

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## **Abstract**

Although online learning has been highlighted as a solution to continue the teaching and learning process since the whole world was hit by the Covid-19 pandemic, there is criticism that students in Malaysia are not yet ready to pursue online learning and may only contribute to the decline in students' academic achievement. Hence, to assess the relevance of online learning towards student achievement, this study aimed to determine the relationship between the use of WhatsApp applications (usability, engagement, and attitude) and student achievement in online learning, and the influence of the use of WhatsApp apps (usability, engagement, and attitude) on students' achievement in business-based subjects. The study employed a quantitative approach. A total of 210 respondents, comprising Form 4 students from selected schools in Ipoh Perak, were involved in this study. To collect data, questionnaires were used as instruments. The study data were analysed using Pearson correlation and multiple regression analysis. The findings of the Pearson correlation analysis showed a significant and negative relationship between engagement in the use of the WhatsApp app and the achievement of online learning. The findings of the regression analysis also found that engagement in the use of WhatsApp apps influenced the achievement of online learning, but not for the usability and attitude towards the use of the WhatsApp app. The influence of engagement in the use of the WhatsApp app on the achievement of online learning is negative, indicating that the greater the engagement with the WhatsApp app, the more students' achievement declines. Therefore, the findings reveal that even though the WhatsApp app could be one of the aids in online learning, excessive use of it can reduce students' achievement.

## **Keyword**

Whatsapp application, usability, engagement, attitude, achievement, online learning

## **INTRODUCTION**

Starting from March 2020, the world was shocked by the spread of a new outbreak of the newly discovered corona-type virus known as Coronavirus disease (COVID-19). To control and curb the spread of the virus, in Malaysia, the Movement Control Order (MCO) was announced. In line with that, almost all sectors across the country have been ordered to close and temporarily cease operations. Almost all types of work, except those in essential services, are carried out at home. The education sector is also no exception. All higher and primary, public, and private education institutions are ordered to close and prevented from operating face-to-face.

Therefore, to ensure that the education process is not affected, the Ministry of Education (MOE) has decided that face-to-face learning which has become the normal practice in education, to be replaced by alternative learning methods (Ministry of Education (MOE), 2020). This situation has enabled the implementation of home-based teaching and learning (PdPR), replacing conventional learning following the extension of the MCO period (Mahlan & Hamat, 2020). No doubt, everyone in the education sector, whether teachers or students, should be ready to implement and follow PdPR (Mahlan & Hamat, 2020).

Home-based teaching and learning (PdPR) have been introduced and implemented as a proactive approach to continue the teaching and learning process in a life of new norms. In the era of globalization, a variety of new applications have been produced to meet the needs of users (Hairia'an & Dzainudin, 2020). In the field of education, there is no exception. Teachers and educators rely on web-based and mobile applications to assist them in implementing PdPR. What is more, the use of technology, as well as its application in the classroom, is one of the major steps toward 21st-century education (Ching & Beden, 2021). To ensure the implementation of technology is done appropriately, teachers and educators play important roles to identify all the restraints and challenges that will be faced. Only then, the selection of appropriate and effective teaching and learning methods can be made to smoothen the future teaching and learning process (Mahlan & Hamat, 2020).

Online learning is a new approach that has been highlighted as a solution to continue the teaching and learning process since the whole world was hit by the Covid-19 pandemic. While online learning is said to be capable of optimizing the use of technology and supporting the 21st-century learning strategy, there has been criticism that students in Malaysia are not yet ready to pursue online learning and that this approach will only contribute to the decline in students' academic achievement. A report from the United Nations International Children's Emergency Fund (UNICEF) reveals that children in this pandemic era are the generation who are left behind due to the stunted educational system (BERNAMA, 2020). That said, the implementation of PdPR may be a solution to curb student dropouts, but the lack of facilities is said to contribute to the deterioration of student achievement. In addition, statistics released by the MOE show that 70 percent of students from all levels of education do not have appropriate facilities to support online learning such as laptops, and the majority of those students come from families in the B40 group (BERNAMA, 2020). Nevertheless, the findings of empirical studies that prove the extent to which PdPR contributes to the decline in students' academic achievement are still hard to find. What is worst, it was reported that Malaysia experiences the highest learning losses in education progress among Asian countries and even exceeded the losses of all ASEAN members (Singh, et al., 2022). Hence, to tackle the issues and to ensure that the technology could benefit the students optimally, this study seeks to determine the relationship between the use of WhatsApp applications (usability, engagement, and attitudes) and students' achievement in online learning, and the influence between the use of WhatsApp applications (usability, engagement, and attitudes) on students' achievement in online learning.

## **LITERATURE REVIEW**

The use of technology in the learning process has a great influence on the achievement of students as a whole and it can also be a contributing factor in ensuring the effectiveness of learning and consequently improve the performance of students. Online applications, either web-based or mobile-based, are useful technologies to conduct online learning. It provides an interactive learning situation, which is required under the constructivist approach (Susilawati

& Supriyatno, 2020). What is more, most of the online applications are for free, which does not burden the teachers or the students. However, to ensure effective online learning, teachers need to wisely choose the appropriate applications to use according to the needs and abilities of the students.

According to Samsul and Triyo (2020), the WhatsApp application has been widely accepted as an effective learning aid in this digital learning era, and around 90 percent of teachers and students choose to use this application in PdPR activities. Although WhatsApp is one of the social applications used for communication purposes, it has the potential as a digital platform to help teachers carry out the teaching and learning process online. This application may not be an application that utilizes asynchronous concepts such as Google Meet, Zoom, and Webex, but the optimal use of all the features offered fulfills the needs of learning immediately (Kant, 2018). Besides, its multifunction features help teachers and students to communicate, create discussions and share ideas in one group (Idris & Rosli, 2019). In terms of cost and usage, this application appears to be a low-cost application and does not use a lot of data, but is very effective to communicate and share materials (Kamlin & Keong, 2020). That is why, it was found that the WhatsApp application is capable of providing beneficial and fun learning sessions (Joicy & Sornam, 2018). In the learning session, it is important for the students to feel good about the sessions. The existence of such pleasure helps the teacher to carry out the learning process easily and effectively. The findings by Kamlin and Keong (2020) study further reveals that students even can feel the existence of a close relationship with classmates and teachers through the use of the WhatsApp application.

Usability refers to the user's perception of how well the technology performs its functions (Ching, & Beden. 2021). Hence in this study, usability refers to the student's perception of how well WhatsApp performs its functions as a learning medium. Engagement relates to the degree to which the users find products, services, and processes as interesting to use that they would sustain using them (Shakya, et.al, 2021). Thus, in this study, engagement is defined as the degree to which students find WhatsApp as interesting to use to the extent that they would sustain using WhatsApp. Attitude, on the other hand, refers to a positive or negative evaluation that an individual has of people, objects, ideas, or anything that exists in an individual's environment (Damanik, 2020). Accordingly, in this study, attitude is defined as students' evaluation, either positive or negative, of WhatsApp use in the teaching and learning process. Finally, achievement is the acquisition of knowledge or skills that are developed by subject matter, which is usually indicated by test scores or numerical values (Fajriyah, & Usman, 2021). Therefore, in this study, achievement refers to the average test score for Business, Principle of Accounting, and Economics subjects.

## **METHODOLOGY**

This study adopted a quantitative research approach. The study was conducted at selected secondary schools in Ipoh Perak. A sample for this study consisted of 210 Form Four students, which taking the business-based subject, namely Business, Principle of Accounting, and Economics, as elective subjects at schools. The sample was selected using a simple random sampling due to the availability of the sampling frame and all the students have an equal chance to be chosen (Levine et al., 2013; Saunders et al., 2009). The selection process started with selecting the schools, getting the name list of the Form Four students from the selected school (sampling frame), generating the random numbers, and choosing the students from the total list based on the random number.

To collect the data, a questionnaire was used as an instrument. The questionnaire was divided into two parts, Part A consisted of questions on demographics and students' scores on Test 1 for three subjects, i.e., Business, Principle of Accounting, and Economics, while Part B consisted of items to measure the independent variables, i.e., usability, engagement, and attitudes of the use of WhatsApp applications in the classroom. All the 24 items used to measure the independent variables were adapted from past studies, including Kamlin and Keong (2020), Idris and Rosli (2019), and, Damanik (2020). To test the readability, clarity, and reliability of the scale used, the pilot test involving 30 Form Four students was conducted. The reliability was examined using the Cronbach alpha values, and the results showed that the values were in the range of 0.758 to 0.914. Since the values exceeded the proposed value of 0.7, the scale has sufficient reliability and is suitable for collecting the actual research data (Hair et al., 2010).

The questionnaires were prepared using Google form and the link was shared with the selected students via WhatsApp. The data collection process took about eight weeks starting from 25/04/2021 till 02/07/2021. Participation in the study was fully anonymous and voluntary. To analyse the data, Pearson correlation and multiple linear regression were utilized.

## **FINDINGS**

### **Respondent's background**

Of the total 210 respondents, most of them are in Form 4 with a frequency of 118 (56.2%) and female with a frequency of 111 (52.9%). All respondents have social telecommunication accounts and the majority of the respondents used telecommunication accounts regularly, which is more than three times a day (71.4%). The majority of respondents also reported the WhatsApp application as the most frequently used social telecommunications account (93.8%).

### **The Relationship between WhatsApp App Usage from aspects of Usability, Engagement, and Attitudes with Online Learning Achievement**

The Pearson correlation analysis is used to test three hypotheses as follows:

H1: usability has a significant association with the student achievement

H2: engagement has a significant association with the student achievement

H3: attitude has a significant association with the student achievement

The correlation analysis results depicted in Table 1 show that only the use of the WhatsApp application from the engagement aspect ( $r=-0.204$ ,  $p=0.003$ ) has a significant relationship with the achievement of online learning at a significance level of 0.05. The other two aspects of the WhatsApp application, namely the usability ( $r=-0.096$ ,  $p=0.164$ ) and attitude ( $r=-0.091$ ,  $p=0.189$ ) do not exhibit a significant relationship with the achievement of online learning at a significance level of 0.05. Moreover, based on the value of the correlation coefficient, engagement ( $r=-0.204$ ,  $p=0.003$ ) is associated with the achievement of online learning negatively. This explains that the higher the students are engaged in the use of the WhatsApp application, the deteriorating the students' achievement in online learning. Overall, these findings support H2, that is engagement has a significant association with the achievement of online learning yet disprove H1 and H3 which anticipate a significant relationship between usability and attitude with online learning achievement, respectively.

**Table 1: Correlation Analysis Results**

		Achievement
Usability	Pearson Correlation	-0.096
	Sig. (2-tailed)	0.164
	N	210
Engagement	Pearson CorrelationSig. (2-tailed)	-0.204** 0.003
	N	210
	Attitude	Pearson Correlation
Sig. (2-tailed)		0.189
N		210

**Influence of WhatsApp Application Usage from Aspects of Usability, Involvement and Attitudes with Achievements in Online Learning.**

The Multiple Linear Regression analysis is used to test three hypotheses as follows:

- H4: usability has a significant effect on the student achievement
- H5: engagement has a significant effect on the student achievement
- H6: attitude has a significant effect on the student achievement

The results of the Multiple Linear Regression analysis are presented in Table 2. The R<sup>2</sup> value was 0.043, indicating that the three independent variables tested, namely usability, engagement and attitudes are capable of explaining a 4.3% variation in online learning achievement.

**Table 2: Regression Analysis Results**

Model Summary					
R	0.207				
R Square	0.043				
Adjusted R Square	0.029				
Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	3.141	0.310		10.130	0.000
Usability	0.028	0.085	0.027	0.326	0.745
Engagement	-0.208	0.084	-0.208	-2.492	0.013
Attitude	-0.034	0.070	-0.035	-0.484	0.629

a. Dependent Variable: Achievement

Further, the results disclosed that only the use of the WhatsApp application in terms of engagement significantly influenced the achievement of online learning (p-value=0.013) at a significance level of 0.05. With the Standardized Beta value of -0.208, it is apparent that the use of the WhatsApp application from the aspect of engagement negatively affects the achievement of online learning. That is, frequent engagement in the use of WhatsApp applications only reduces the achievement of online learning. As for the other two independent variables, namely the use of the WhatsApp app in terms of usability and attitude, both do not

significantly affect the achievement of online learning. Hence, only H5, which predicts a significant influence on the use of the WhatsApp application in terms of engagement in the achievement of online learning, is supported, while H4 and H6 are not supported.

## **DISCUSSION**

Despite assertions that PdPR only worsens student achievement, fewer empirical studies have been conducted to support the claim. In this regard, this study is conducted to determine the relationship and influence of the use of the WhatsApp application, the most frequently used application to support PdPR, on the achievement of online learning. The use of the WhatsApp application is investigated from three main aspects, namely usability, engagement and attitude. The results of the Correlation and Regression analysis revealed that only the use of the WhatsApp application from the aspect of engagement has a relationship and influence on the achievement of online learning. The findings also reveal that the relationship and influence of the use of WhatsApp application in terms of engagement on the achievement of online learning are negative. The findings explain that the increasingly engaged students are in using the WhatsApp application, the more likely their achievement of online learning decreases. The findings seem to contradict the findings by Malini and Tan (2020), which explained that the WhatsApp application is easy to use and has the potential to develop new knowledge for students and thus improve students' achievement. Nevertheless, findings are in line with Dhahir (2020) that students are more likely to lose focus when WhatsApp is used as the learning medium as its original functions go beyond the learning.

The findings also failed to show the significant relationship and influence of the use of the WhatsApp application in terms of attitudes towards the achievement of online learning. The findings fail to support past studies such as Idris and Rosli (2019), which stated that a positive attitude toward self-learning using WhatsApp's application, is more likely to increase the level of students' readiness to learn, which in turn improves the academic achievement of students. The findings may be due to the lack of readiness and discipline of students in the use of WhatsApp applications for learning purposes as stressed by (Kusuma & Hamidah, 2020) that online learning is focused on students rather than teachers. The Covid-19 situation that has plagued the country and around the world, it is drastically the main cause of students' unpreparedness for the implementation of PdPR. The increase in positive cases of Covid-19 involving family members, friends and close individuals also contributed to the anxiety of students to focus in PdPR.

## **CONCLUSION**

Overall, the findings show that higher engagement in using WhatsApp is more likely to contribute to the decline in student achievement in the business-based subject. To improve the student's achievement in the business-based subject, the use of WhatsApp must be reduced, due to the high possibility that the students might use the application for other purposes during PdPR. In implication, the findings provide that proper use of WhatsApp is compulsory during PdPR. The student must prevent themselves from using WhatsApp for other purposes when the class is on (Dhahir, 2020). The teachers, on the other hand, must design the lesson that may utilize WhatsApp appropriately. Due to a small sample, the generalization of the findings might be affected, which requires improvement in future studies.

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