ORIGINAL ARTICLE

REVOLUTIONISING TERTIARY EDUCATION IN MALAYSIA THROUGH WHATSAPP: A DESCRIPTIVE ANALYSIS

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Abstract

The Covid-19 pandemic has significantly impacted the education sector, including tertiary education in Malaysia. To adapt to the new normal, online learning has been adopted, but challenges such as limited resources, lack of interaction, and high dropout rates persist. This study aims to explore the potential of using WhatsApp to revolutionise tertiary education in Malaysia using a mixed-methods approach. A descriptive analysis was conducted to investigate students' perceptions of blended learning using WhatsApp at a public university. A sample of 105 students from a local public university was selected for the study, using random sampling. After applying WhatsApp during lessons for 14 weeks, a questionnaire was distributed to the students to identify their perceptions on WhatsApp application, to investigate the influence of gender differences on perceptions and to explore the students' suggestions on ways to improve WhatsApp application in lessons. The findings revealed positive perceptions among students regarding the playfulness, usefulness, ease of use, and interaction aspects of using WhatsApp for learning. On the other hand, gender differences did not significantly influence students' perceptions of the WhatsApp application. Finally, suggestions provided by students to enhance the utilisation of WhatsApp in the classroom included incorporating interesting activities, providing clearer instructions, and using various teaching tools. These findings offer insights for improving the quality of tertiary education in Malaysia. The study highlights the potential of WhatsApp as a convenient tool for communication and collaboration between teachers and students in tertiary education settings, particularly during times of crisis like the Covid-19 pandemic.

Introduction

Due to the Covid-19 pandemic, various sectors are largely affected, and this includes the education sector (Tadesse & Muluye, 2020)[1]. Even though Malaysia has reached the 'endemic' stage of her battle with Covid-19, the administrators, educators, and students still adhere to the 'new norm' routines to sustain the efficiency of the institutions. This has undoubtedly changed the educational landscape both locally and globally. The process of transitioning will require improved approaches, which will ease learners' adaptability suitable to the course's content.

The MCO period has required the schools and tertiary institutions to begin using online learning as an approach in their teaching and learning. This has transformed the education system at large as learning in a formal education setting was seen as a possibility for the students (Sulaiman et al., 2022)[2]. However, recent SOP for the endemic stage has allowed schools and colleges to conduct face-to-face learning instruction, and this has led to the integration of online learning elements to be implemented in face-to-face classrooms (Juhary, 2022)[3]. One of the elements is the implementation of technology applications in classrooms (Chan 2022)[4]. Various advanced technological applications were designed for education and were promoted to practitioners and students (Chan, 2022)[4]. The plethora of digital platforms brought into the classroom environment has shown infinite advantages. Among all implementations, the use of WhatsApp as a medium to teach has become more prevalent across all levels of education.

Despite Malaysia's strong emphasis on higher education and the increasing adoption of technology in education, tertiary education in the country still faces challenges such as limited access to resources, a lack of interaction between students and teachers, and high dropout rates. These challenges have been exacerbated by the Covid-19 pandemic, which has forced universities to shift to remote learning. The use of mobile messaging applications such as WhatsApp in recent years has become increasingly popular in education, as it provides a convenient and accessible way for teachers and students to communicate and collaborate. Such applications offer instant responses and intuitively enhance teacher-student and student-student communication. Despite the widespread use of Whatsapp in the teaching and learning process, limited research regarding its effectiveness in this particular setting has been conducted.

Therefore, the aim of this study is to examine the potential of using WhatsApp to revolutionize tertiary education in Malaysia, by conducting a descriptive analysis to investigate the perceptions of students on blended learning using WhatsApp in the classroom in tertiary education in Malaysia. Subsequently, this study will contribute to the existing literature on the use of mobile messaging applications in education and provide insights for educators and policymakers on how to enhance the quality of tertiary education in Malaysia.

Research Objectives

1. To investigate the perception of students on the WhatsApp application in blended learning in a public university in Malaysia.
2. To identify the influence of gender differences towards WhatsApp application in a public university in Malaysia.
3. To explore the suggestions from the students' perspective on using WhatsApp in a public university in Malaysia.

Research Questions

1. What is the perception of students on the WhatsApp application in blended learning in a public university in Malaysia in terms of Perceived playfulness (PP), Perceived usefulness (PU), Perceived ease of use (PE), and Perceived interaction (PI)?
2. Is there any significant difference between gender about their perception on WhatsApp applications in a public university in Malaysia?
3. What are the suggestions provided by the students to use the WhatsApp application in a public university?

Literature Review

WhatsApp Application

Mobile instant messaging (MIM) can be used as a tool for participation in the classroom because it provides in-group/inter-group interaction, bending the time and space constraints in the classroom (Urien et al., 2019)[5]. An example of MIM is WhatsApp, which is widely utilised due to its benefits, such as increasing communication, delivering knowledge, enhancing teamwork values, and providing a sense of presence in learning (Klein, 2018)[6]. WhatsApp is an instant messaging app that allows users to send and receive text messages, make voice and video calls, and share images, documents, user locations, and other media. The literature shows the recent trend of utilising Whatsapp as a practical learning tool in teaching and learning environments.

Chan et al. (2020)[7] studied the level of perceived acceptance of WhatsApp in a private university and found positive results in terms of WhatsApp's usefulness and ease-of-use among the students. Moreover, Barus and Simanjuntak (2020)[8] found students to enjoy using WhatsApp in class due to its features that can be installed both on their cell phones and their computers. This further enhances their learning skills. Meanwhile, Heshkovitz et al. (2019)[9] discovered that the use of WhatsApp has improved student-teacher relationships and inculcated a positive environment in classrooms. It was reported that the teacher and students used WhatsApp to communicate at least a few times per week, even after the class session. This has helped the students feel more at ease while learning as they get to know the teacher. On the other hand, Warman (2018)[10] identified students' agreement in using WhatsApp to learn the English language. They found WhatsApp to be helpful, useful, and effective in learning reading comprehension. They felt that they could learn English anytime and anywhere. Through WhatsApp, they were able to read materials other than the textbook and had discussions with friends about it, thus, improving

their vocabulary. They could also share their opinions freely without being judged. Moreover, they also found it efficient to submit their assignments on WhatsApp as it was faster. Nuraini et al. (2020)[11] agrees to this finding as her study found similar results, where WhatsApp can enhance learning opportunities, because they are more confident with their learning. This occurs when discussions were conducted repetitively in an informal setting on WhatsApp.

Several suggestions to improve the utilisation of WhatsApp in the classroom have been provided. Khan et al. (2021)[12] investigated the influence WhatsApp has on vocabulary development. WhatsApp based activities such as text messages, audio and video messages, picture annotation, and group discussions allow them to practice new vocabulary, develop an impression of the ideas, and improve their understanding of new words. Soria et al. (2020)[13] found that using emoticons and smileys was the favourite type of feedback to engage learners while using WhatsApp.

Male and Female Users of WhatsApp Application

Several empirical studies have mentioned the differences in WhatsApp usage by gender (Rungta, 2017)[14]. Gender differences are apparent in several aspects, such as the usage of emoticons, the joining of WhatsApp groups, the most active time spent, and the changing of profile pictures (Rungta, 2017)[14]. In the educational context, it is found that female students tend to use MIM, such as WhatsApp, to interact more than the male students (Rungta 2017)[14]. Urien et al. (2019)[5] also summarised gender influences on WhatsApp's usefulness and perceived efficacy.

Methodology

This was a mixed-methods study that combined both qualitative and quantitative approaches. For the quantitative approach, 105 students were selected as the sample using the random sampling method at a local public university. The students were diploma students ranging from semester 1 to semester 4. Referring to Table 1, the demographic of the respondents were analysed. There were 42 (40%) male students and 63 (60%) female students who responded in this study. As for their age, 99 students (94%) were in the range of 18 to 20 years old while only 4 (4%) were in the range of 21 to 23 years old. Lastly, 2 students were in the range of 24-26 years old. For the qualitative approach, participants were selected purposively based on their feedback in open-ended questions in the questionnaire.

Table 1
Statistical Summaries for Demographic Variables

Demographic	Frequency	Percentage (%)
Gender		
Male	42	40
Female	63	60
Age		
18 – 20 years old	99	94
21 – 23 years old	4	4
24 – 26 years old	2	2

Data Collection Method/Instrumentation

The questionnaire was adopted from various studies on the perceived efficacy of technology by Gao et al. (2020)[15], Ali & Sofa (2018)[16], Fisher et al. (2018)[17] and Bouilheres et al. (2019)[18]. The open-ended questions were used to collect qualitative data to support the quantitative findings.

The reliability of each item was evaluated using Cronbach's Alpha to assess its internal consistency. As shown in Table 2, all Cronbach's Alpha values in this study are greater than 0.60. It is critical to note that all reliability measures have exceeded the minimum alpha value of 0.60 as suggested by Nunnally (1978)[19] and Peterson (1994)[20].

Table 2
Reliability Analysis's Results

Description	Number of Item	Cronbach's Alpha
Perceived Playfulness (PP)	2	.663
Perceived Usefulness (PU),	5	.868
Perceived Ease of Use (PE)	5	.719
Perceived Interaction (PI).	4	.677

On the other hand, the open-ended questions were validated by lecturers who have been using WhatsApp in class for 5 years. These findings were utilised to find suggestions from the students' perspective on the best strategies to employ WhatsApp in lessons.

Data Analysis Method

Data analysis was conducted using SPSS for quantitative analysis and thematic analysis for qualitative analysis. The details about the analysis for each research objective are summarised in Table 3 below:

Table 3
Data analysis for each research objective

The Statistical Approach Used in Data Analysis		
Statistical Test	Scale	Research Objective
Mean	Interval	To investigate the perception of students on the WhatsApp application in blended learning in a public university in Malaysia.
t-test	Nominal	To identify the influence of gender differences towards WhatsApp application in a public university in Malaysia.

The Qualitative Approach Used in Data Analysis

Thematic analysis	To explore the suggestions from the students' perspective on using WhatsApp in a public university in Malaysia.

Findings

Research Question 1: The perception of students on the WhatsApp application in blended learning in a public university in Malaysia in terms of Perceived Playfulness (PP), Perceived Usefulness (PU), Perceived Ease of Use (PE), and Perceived Interaction (PI).

Table 4
Description of the Mean and Standard Deviation Values for Each Item

Item	Description	Mean	Standard Deviation
Perceived Playfulness			
1.	Perceived Playfulness 1: I feel the utilisation of WhatsApp is fun.	4.32	.612
2.	Perceived Playfulness 2: I enjoy using WhatsApp for class.	4.30	.709
Perceived Usefulness			
1.	Perceived Usefulness 1: Using WhatsApp for class is useful to me.	4.37	.683
2.	Perceived Usefulness 2: Using WhatsApp helps me share opinions effectively.	4.33	.768
3.	Perceived Usefulness 3: The online materials provided on WhatsApp help me gain a clearer understanding of the subject.	4.15	.830
4.	Perceived Usefulness 4: I feel more confident coming to the class with certain knowledge provided in advance via WhatsApp.	4.21	.768
5.	Perceived Usefulness 5: My online experience on WhatsApp helps me engage actively in my learning face to face.	4.10	.733
Perceived Ease of Use			
1.	Perceived Ease of Use 1: WhatsApp functions are easy to use.	4.63	.654

2	Perceived Ease of Use 2: I use the application when I am shy to ask questions to the lecturer face to face.	4.56	.733
3.	Perceived Ease of Use 3: With online materials provided on WhatsApp, I can study anytime, anywhere I can.	4.57	.618
4.	Perceived Ease of Use 4: With online materials provided on WhatsApp, I can study at my own pace.	4.57	.663
5.	Perceived Ease of Use 5: It would be easy for me to become skilled at using WhatsApp.	4.27	.724

Perceived Interaction

1.	Perceived Interaction 1: WhatsApp makes it easier for me to access the learning resources.	4.37	.669
2.	Perceived Interaction 2: With the utilisation of WhatsApp, the quality of my interaction inside and outside of the classroom with other students is much better.	4.25	.769
3.	Perceived Interaction 3: With the utilisation of WhatsApp, the quality of my interaction with my lecturers inside and outside of the classroom is much better.	4.23	.750
4.	Perceived Interaction 4: I know what my lecturer expects of me from the instructions mentioned in WhatsApp better than face to face.	3.95	.984

Research Question 2: Is there any significant difference between gender about their perception of WhatsApp applications in Malaysia.

Table 5
Description of the T-Test Result

Perception	Equal variances assumed	Equal variances not assumed

Levene's Test for Equality of Variances	F	.715	-
	Sig.	.400	-
T-Test for Equality of Means	T	.353	.347
	Df	103	82.673
	Sig. (2-tailed)	.725	.729
	Mean Difference	.03621	.03621
	Std. Error Difference	.10255	.10436
	95% Confidence Interval of the Difference Lower	.16718	-.17137
	95% Confidence Interval of the Difference Upper	.23960	.24379

Based on the table above, the T-test result shows there is no significant difference between male and female students' perception, p=.725 (p>0.5) on the usage of WhatsApp. When the p-value is more than .05, it means that the result is not significant, which clarifies there is no difference in perceptions about WhatsApp utilisation between male and female students. Meanwhile, Levene's Test shows p>0.05, which means there is equal variances in homogeneity between male and female respondents. This shows the equal number of both independent groups; male and female respondents.

Research Question 3: Suggestions to Improve WhatsApp Application in Classroom

After analysing the open-ended questions, various suggestions were found to improve the implementation of WhatsApp in class. The themes examined by Muthuprasad et al. (2021)[21] served as the basis for categorising these suggestions. Table 6 illustrates the themes found followed by the examples. Three themes emerged from the data, namely interesting activities, clearer instruction from the lecturer, and encourage students' involvement.

Table 6
The Compilation of Suggestion for WhatsApp Application

No.	Themes	Examples
1.	Interesting activities	Give more interesting activities to do and instead of leaving work, maybe the lecturer can join guiding students doing work together. Should provide something more interesting from other websites such as quizzes and games.

		In my opinion, educators can improve the application of WhatsApp by using it as a class forum sort of thing.
		Use a variety of teaching tools.
		Using some quiz to improve their strategy.
		The educators can be more engaged when answering questions and the difficulties faced by the students related to studies in WhatsApp so that the learning process will be more effective, and the problems will be solved quickly.
2.	Clearer instruction from the lecturer	Misleading information when the students get the information straight from the educators.
		By using the voice to explain about certain learning process.
		By using voice to explain the topic that they don't understand.
		The educator should provide a clear explanation through the WhatsApp application so that the students can receive the instructions well.
		Any simple instructions could use WhatsApp.
		To overcome the effectiveness and the participation of the students, educators can assign one task a day and avoid multiple tasks to avoid confusion. The clear instructions must be provided through voice message. The task should be handed before the end of the day.
3.	Encourage students' involvement	Get more of the student involvement during the discussion in WhatsApp. In my opinion, educators need to listen to feedback from students.

Discussion

The study aims to investigate students' perceptions on the usage of WhatsApp applications in the classroom, in the higher education context in terms of Perceived Playfulness, Perceived Usefulness, Perceived Ease of Use, and Perceived Interaction. From the questionnaire distributed to the students, it was found that the students generally have a positive perception towards WhatsApp to be utilised in class. They agreed using WhatsApp was fun and entertaining. This finding was consistent with Barus and Simanjuntak (2020)[8] where the students in their study enjoyed the WhatsApp features because it can be used with multiple gadgets, and this improves their learning. This shows that the functions of WhatsApp that can be integrated with other platforms and gadgets such as Facebook, Twitter, Instagram, Shopee, and other social media has increased enjoyment among the users, particularly the students, as they are the crowd that benefits the most from social media platforms.

The present study suggested students report WhatsApp as useful to them because it helps them to express opinions easily and assists them in learning at their own pace. The finding is concurrent to the study conducted by Warman (2018)[10] where students reported WhatsApp was helpful to learn because it is an aid to learn in a flexible manner, anytime anywhere. This flexibility gives students the privilege and authority to plan their own time to study. Moreover, due to the features that assist them in expressing opinions freely and have discussions with friends, WhatsApp is transforming the classroom environment.

Furthermore, for perceived ease of use, students agreed that WhatsApp's functionality was easy, and WhatsApp encourages self-directed learning when lecturers provide online materials via WhatsApp. Warman (2018)[10] also found that students were using the materials to talk with their peers about them and improve their vocabulary. Lastly, the Perceived Interaction construct shows the students agree that WhatsApp enhances the quality of interaction inside and outside classrooms among the students. Nonetheless, students were not in favor of the fact that the quality of interaction with their lecturer deteriorates when the class uses WhatsApp when compared to face to face.

The second research question delves into the gender difference of the perception regarding WhatsApp usage. The study presents no significant difference in terms of male and female students. In contrast to Rungta (2017)[14], the study shows differences in their interaction, where female users like to engage in WhatsApp by emoticon usage and actively spending time in WhatsApp. This comparison illustrates differences between male and female students in different geographical contexts in MIM usage, such as WhatsApp in different countries in the world. Hence, further study could investigate more on gender differences in comparison to different countries.

Finally, several suggestions to improve WhatsApp are discussed. The recurring themes extracted during the thematic analysis based on Muthuprasad et al. (2021)[21] were more interesting activities to be done on WhatsApp, to have clearer instructions from the lecturer if it is conveyed through WhatsApp, to encourage more students' engagement, WhatsApp as a note sharing platform, WhatsApp as a teaching aid and not as the main platform to teach, and to improve WhatsApp features to provide a more interactive environment. By incorporating the suggestions mentioned above, lecturers can optimise the use of WhatsApp as a tool for language learning and facilitate effective communication and learning among students. However, it is important to note

that the effectiveness of WhatsApp in the classroom ultimately depends on how it is used and integrated into the curriculum, as well as the specific learning goals and objectives.

Conclusion

The present study investigates the students' perceptions of WhatsApp in a higher education classroom. From the study, it can be seen that students have mostly positive thoughts about using WhatsApp to help them learn. They agree that WhatsApp is generally fun, useful, easy, and improves interactions. Moreover, there were no gender differences in the perception. Various suggestions are presented to improve the implementation of the application. One issue identified was that students found hindrances in their interaction with their lecturer when WhatsApp is used. More research can be done to find out how well WhatsApp works for teachers and students to communicate with each other.

Mobile technologies have enormous potential for improving education if they are developed and applied in a way that is appropriate to the learning environment. Despite the challenges it may entail, using mobile technology in education is favourable among learners of today. Designing and implementing such technology in classrooms must take into consideration all contributing factors that can influence the learning outcome. This study has revealed some of the important factors for consideration when using mobile technology, such as WhatsApp. However, the result from this study may not offer a solution where one size fits all. Hence, it is vital to note that each educator must consider underlying mechanisms before implementing new approaches in their teachings.

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