

# Foundation Students' Perceptions Towards the Integration of WhatsApp in Learning During COVID-19 Pandemic

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**Abstract:** Since the announcement of the first movement control order (MCO), the Malaysian education system has been put under pressure as education providers and educators work tirelessly to provide continuous quality education online during the COVID-19 pandemic. As classes shifted online, educators and students relied heavily on devices and applications to ensure that the teaching and learning process could be conducted smoothly. One such app that has been used extensively is WhatsApp. Thus, this research aimed to study students' perceptions of the use and integration of WhatsApp for their learning during COVID-19. It is hypothesised that students would have positive perceptions toward the integration of WhatsApp into their studies. The following research used a quantitative design based on the Technology Acceptance Model (TAM) and questionnaires were used to collect data. The respondents consisted of 50 foundation students at a Malaysian private university and were selected using purposive sampling. According to the findings of this study, WhatsApp is important in helping students learn online during this pandemic, with 82% of respondents experiencing academic engagement, 92% agreeing that WhatsApp should be used in education, and 68% showing positive perceptions of continuing to use WhatsApp after COVID-19. Future research can be conducted to compare WhatsApp with other similar applications as well as how educational institutions exemplify best practices in using WhatsApp.

**Keyword:** COVID-19, Online learning, Students perceptions, Technology Acceptance Model (TAM), WhatsApp

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## INTRODUCTION

The COVID-19 health crisis, which began at the start of 2020, has brought unprecedented impacts on various sectors such as healthcare, the economy, agriculture, tourism, etc. The Malaysian education sector was also hit hard by the pandemic which affected many key stakeholders at every educational level. A UNESCO report by Li and Lalani (2020) illustrated the severe impact of the pandemic, especially on students, with an estimated 1.38 billion students stuck at home and unable to participate in normal schooling activities. Consequently, the pandemic has driven technological growth at exponential levels as demand for better technological infrastructure increased for educational services to be able to continue online. This has resulted in learning that has become ubiquitous as students can learn anywhere, anytime and everything by accessing the platforms available on the Internet. Bensalem et al. (2018) highlighted that learning via portable learning devices like smartphones and laptops has created unlimited chances for students to attain their learning goals through real-time and authentic interactions that make learning meaningful, effective, and different from conventional classroom learning. Application features such as texting, calling, media sharing, documents, etc. appear to be very encouraging and flexible for learning.

Despite the shift to online learning, there have been concerns over poor connectivity and accessibility for students to continue their online studies at home. This is echoed by Wan (2020), who highlighted the struggles that students encountered during this uncertain time of moving from traditional to online learning modes. According to Baum and MacPherson (2019),

the abrupt introduction of online learning has resulted in higher rates of absenteeism from class, lower achievement rates, wider achievement gaps between student groups, and increased deferment and dropout rates. Hence, it is imperative for teachers to find technologically friendly solutions for students to continue their learning, especially for those who do not have proper access or connections for classes.

With teachers under pressure to study and implement new learning approaches to ensure the continuation of service delivery, there is a pressing need to build and strengthen the use of technology in education as well as improve upon existing technological foundations that can cater to all student demographics. In view of this, a suitable tool that can support online learning is WhatsApp. The reason behind this choice is that it has become one of the most common apps used by students as it is convenient, low-cost, available on various mobile platforms and useful for learning and communication (Hamad, 2017; Susanti & Tarmuji, 2016).

Therefore, this study is important, especially to teachers, as the results can be used to inform and equip teaching staff in educational institutions to fulfil the future needs and requirements of post-COVID-19 teaching-learning environments. The rest of the paper is organised as follows: research objectives and questions; literature review; methodology; results; discussion; and concludes with implications and recommendations for future research. Hence, this research aims to investigate foundation students' perceptions towards the use of WhatsApp in their learning during the COVID-19 pandemic and identify students' perceptions of the benefits of integrating WhatsApp in learning. In particular, the research aims to answer the following questions:

1. What are students' perceptions towards the use of WhatsApp in their learning amidst the COVID-19 pandemic?
2. What are students' perceptions of the benefits of integrating WhatsApp into learning?

## LITERATURE REVIEW

Mistar and Amin Embi (2016) commented that WhatsApp is the most popular communication tool in the 21st century as it is considered to be a real-time messaging tool and a fast knowledge resource (Mistar & Amin Embi, 2016). This is further confirmed by Constone (2018), whereby in January 2018 WhatsApp hit the usage of 1.5 billion monthly users. Dweikat (2018) supported this with his finding that WhatsApp is the second most preferred social media tool among 450 students at Jordanian universities compared to Facebook 88%, WhatsApp at 78.7%, YouTube 51.6%, Instagram 32.4%, Viber 26.9%, and Twitter 13.6%. As such, this tool appears to be very effective in connecting people and organisations, which means that WhatsApp is predominantly used by a large number of people (Trisnani, 2017).

WhatsApp is one of the platforms that boasts multiple features such as group chat, sending documents, YouTube videos, and voice or video calls. It is often used in distance learning activities (Prajana, 2017). Pustikayasa (2019) stated in her study that WhatsApp features were beneficial for the learning process whereby it enables teachers to share learning materials in various forms such as PowerPoint, PDF, Word documents, Excel Sheets, audio, video, and images directly with the students, and it also enables the teachers to get a direct response from the students with regards to the shared materials. She further elaborated that there were also several drawbacks to the use of WhatsApp, such as the need to have a good internet connection to receive information, limited data availability for receiving and transmitting large graphical and audio-visual files, and group members leaving the group at any time without any prior notifications.

Several studies were conducted to study students' perceptions of the use of WhatsApp in education. In her study, Gasayameh (2017) surveyed 154 students on their attitudes and perceptions towards the use of WhatsApp in learning and its advantages. The study's findings revealed that students use WhatsApp for personal purposes rather than educational purposes. However, students showed positive attitudes towards the integration of WhatsApp into education as they found it to be more fun, useful, and easy and they wished this to be incorporated into their formal learning. In addition, Tang and Hew (2017) reported similar results whereby WhatsApp has been used in many disciplines to assist students. Students who were in the process of learning Mandarin through WhatsApp have been proven to improve their performance both inside and outside the classroom (Selva Kumar et al., 2016).

In another study, Budianto (2019) stated that WhatsApp is notably necessary as a learning tool to provide prompt learning tasks and the interchangeability of information for students. Adopting this tool was said to provide more flexible learning activities outside the classroom with electronic sources and encourage learners to learn English outside the classroom more flexibly. In line with this, a survey conducted by Susilawati and Supriyatno (2020), declared that 90% of the learners and lecturers used WhatsApp in their daily activities, including teaching and learning activities. Due to the flexible features of smartphone technology, WhatsApp is believed to support English language teaching and learning. This

is further asserted in another study by Hamad (2017) that the use of the WhatsApp tool in learning facilitated and created the platform for learning and communication since the current generation is more familiar with all the social media platforms.

In addition to that, Malecela (2016) examined students' perceptions towards the utilisation of WhatsApp in education, and the results of the study indicated that students believed that WhatsApp was a very helpful tool to be used in learning as it facilitated interactions with their peers and instructors and also helped to enhance their collaborative learning as well as information sharing. Students' perceptions of the integration of WhatsApp into their online learning have also revealed positive feedback from the students (Wijayanti & Gunawan, 2018). Other supporting evidence was given by Suadi (2021), whose study claimed that the virtual classes of English language teaching for English as a foreign language (EFL) on two platforms, namely Zoom and WhatsApp, appeared to be positive. Interestingly, students rated both applications in online learning to be effective and efficient, despite the slow internet connection and availability issues.

Nevertheless, most of the teachers were found to have not ideally utilised these types of technologies. This finding was supported by Lailiyah and Cahyono (2016), who claimed that "some EFL teachers are resisting the opportunity to incorporate technology into their classrooms". Additional studies also highlighted some negative effects associated with mismanaged WhatsApp usage, such as interruption during class hours, addiction to the application, reduced participation in group discussions, and reduced learning speed due to delays in communication (Hamad, 2017; Hayward & Ward, 2018; Yilmazoy et al., 2020).

Hence, the gap that has been identified from the author's readings is that teachers do not fully utilise or emphasise the use of WhatsApp in the teaching and learning process, although studies have shown that structured and monitored usage of the application can have positive benefits for students' learning. As such, it is vital to get a good understanding of students' voices in using WhatsApp for their studies, as ultimately teachers need to address the lack of knowledge, skills, and competencies in utilising the application to provide better learning experiences for their students. As a result, the study hinges on identifying students' needs and expectations regarding WhatsApp so that a more strategic development plan is developed for teachers in light of the rising demand for online learning, which is expected to be part of the new normal.

Furthermore, while studies using the technology acceptance model (TAM) are abundant, most of the research focused on the pre-COVID-19 pandemic period (Aburub & Alnawas, 2019; Ali et al., 2020). Additionally, this study acknowledges the significant role of technology in educational efforts during the pandemic and the degree of technology acceptance among developing nations is vital to encourage the continuous integration and ethical use of technology in the teaching and learning process.

### ***Research Model***

The technology acceptance model (TAM) was first proposed by Davis, Bagozzi, and Warshaw in 1989 to study how people's behaviour can be changed. In this context, the technology acceptance model was used to explain an individual's acceptance of an information system (Lai, 2017). For the purpose of this paper, the authors chose to use the technology acceptance model 2 (TAM 2) revised by Venkatesh and Davis (2000) as it serves to answer the research questions while also providing sufficient focus on a few selected elements that affect students' perceptions:

- a) Perceived usefulness: The extent to which an information system or tool is viewed and used favourably is heavily dependent on its usefulness in assisting the individual in completing tasks and performing various functions.
- b) Perceived ease of use: The extent to which an information system or tool is considered for widespread use is determined by its usability (user-friendliness) in assisting individuals in navigating and performing tasks efficiently and effectively.
- c) Perception/Usage Intention: The intention to use an information system or tool is determined by how users perceive it before, during, and after using the system or tool for the first time.
- d) Integration/Usage behaviour: The extent of the system or tool integrated into the user's daily routine demonstrates the degree of altered user behaviour.

## METHODS

### *Design*

This study used a quantitative approach to investigate students' perception of WhatsApp and its integration into learning. A quantitative approach was used to collect a lot of responses from the target group effectively and efficiently. The data collected for this study were processed using SPSS version 16.0. Descriptive statistics were used throughout the data collection process to analyse the data to identify the students' perceptions of using WhatsApp in their learning.

### *Sample*

The respondents of this study were 50 foundation students from a Malaysian private higher education institution. Purposive sampling was used to select participants for the study as there were a few criteria that participants had to fit, including

- a) Foundation student at the chosen private university.
- b) Have experienced or are currently experiencing online learning due to the pandemic.
- c) Have specifically used WhatsApp for online learning.

### *Data Collection Instrument*

Questionnaires were used to collect data for this research. This questionnaire was adapted and simplified from a previous study conducted by Suadi (2021), Cakrawati (2017), and Yin (2016). The questionnaire consisted of 27 items divided into four parts as shown below. The responses were recorded with a Five-Likert-like scale of responses. They were 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, and 1 = strongly disagree. There was also 1 Yes/No question and 3 multiple-choice questions.

**Part A** - Perceived usefulness: This part contained 14 questions to determine students' appraisal of the usefulness of WhatsApp for their studies and day-to-day interactions.

**Part B** - Perceived ease of use: This part contained 8 questions to determine how user-friendly WhatsApp is in aiding students' studies.

**Part C** - Usage intentions (Perceptions): This part contained 5 questions to determine what students think or feel when using WhatsApp.

**Part D** - Integration of WhatsApp in learning: This part contained 4 questions to determine how students will utilise WhatsApp in the future for learning.

### *Instrument Validation*

A pilot study was conducted with 33 Foundation students to establish the questionnaire's validity and reliability. A Cronbach Alpha value of 0.82 was obtained, indicating that the instrument used is valid and reliable.

### *Data Collection Procedure*

The authors first contacted the programme coordinators of the three foundation programmes to obtain permission to send the questionnaire to the students. Students were given a few days to complete the questionnaire before the Google Form was locked. Once a sufficient number of responses were collected, the data was collated and processed in SPSS 16.0. The following subsection presents the results of the analysed data.

## FINDINGS

The demographic profile of the participants is presented in Table 1 below. A total of 50 participants participated in the study. Out of the 50 students, there were three respondents (6.0%) each in the 17, 18 and 22-year-old groups, respectively. Twenty-six respondents (52.0%) were 19 years old, nine respondents (18.0%) were 20 years old, five respondents (10.0%) were 21 years old, and one respondent (2.0%) was 23 years old. The largest group of respondents were from Foundation in Business (58%), followed by Foundation in Arts (26%), and lastly, Foundation in Science (16%). Lastly, the majority of respondents (86%) have used WhatsApp in their studies, with only 14% categorised as infrequent users.

**Table 1**

### *Background of Participants*

Categories	Frequency	Percent	Valid Percent	Cumulative Percent
	(n)	(%)	(%)	(%)
Gender				
Male	22	44.0%	44.0%	44.0%
Female	28	56.0%	56.0%	100.0%
Age				
17	3	6.0%	6.0%	6.0%
18	3	6.0%	6.0%	12.0%
19	26	52.0%	52.0%	64.0%
20	9	18.0%	18.0%	82.0%
21	5	10.0%	10.0%	92.0%
22	3	6.0%	6.0%	98.0%
23	1	2.0%	2.0%	100.0%
Programme				
Foundation in Business	29	58.0%	58.0%	58.0%
Foundation in Arts	13	26.0%	26.0%	84.0%
Foundation in Science	8	16.0%	16.0%	100.0%

Use WhatsApp in studies				
Yes	43	86.0%	86.0%	
No	0	0.0%	0.0%	86.0%
Sometimes/Infrequently	7	14.0%	14.0%	100.0%

Table 2 consolidates data on the perceived usefulness of WhatsApp. A first look at the table shows that respondents' perceptions towards WhatsApp ranged from neutral to strongly agree. Out of the 14 questions, 9 questions (Question 1, 2, 3, 5, 8, 9, 11, 12 and 13) were rated the highest for the Agree option, while the remaining 5 questions (Question 4, 6, 7, 10 and 14) were rated the highest for the Neutral option. The 9 questions focus on the social aspect and the usefulness of WhatsApp in facilitating communication. To illustrate, Question 12 is the highest positively rated question with 39 responses under the Agree and Strongly Agree options (78%), followed by Questions 2 and 13 (76%), and Questions 8 and 9 (72%). On the other hand, the lowest rated questions are Questions 14 (36%), 6 (48%), and 7 (40%). These three questions were concerned with the academic gains associated with WhatsApp (i.e., concept formation, skills development, and motivation). Hence, the results show that students prefer to use WhatsApp to establish and maintain social relationships during the pandemic. This echoes the results obtained by Gasayameh (2017), who found that students utilise WhatsApp for personal uses such as communicating with friends rather than as an educational tool.

**Table 2**

*Perceived usefulness*

Categories	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	Row	Row	Row	Row	Row	Row	Row	Row	Row	
	Count	Valid N (%)	Count	Valid N (%)	Count	Valid N (%)	Count	Valid N (%)	Count	Valid N (%)
1. I am experienced in using WhatsApp for study purposes.	3	6.0%	0	.0%	12	24.0%	22	44.0%	13	26.0%
2. I think using WhatsApp for learning is considered normal during COVID-19.	1	2.0%	0	.0%	11	22.0%	21	42.0%	17	34.0%

3. I think using WhatsApp is important for my learning.	2	4.0%	0	.0%	14	28.0%	24	48.0%	10	20.0%
4. Using WhatsApp features well makes me look good / technologically advanced to others.	1	2.0%	4	8.0%	19	38.0%	18	36.0%	8	16.0%
5. I feel a sense of belonging using WhatsApp.	1	2.0%	4	8.0%	20	40.0%	22	44.0%	3	6.0%
6. WhatsApp helps me to understand concepts in more effective ways.	1	2.0%	2	4.0%	23	46.0%	20	40.0%	4	8.0%
7. The use of WhatsApp has improved my writing and speaking skills.	1	2.0%	2	4.0%	27	54.0%	18	36.0%	2	4.0%
8. WhatsApp facilitates better interaction and communication between the lecturer and myself.	1	2.0%	1	2.0%	12	24.0%	24	48.0%	12	24.0%

9. WhatsApp allows me to academically engage with peers and lecturers at any time and any place.	1	2.0%	1	2.0%	12	24.0%	20	40.0%	16	32.0%
10. My grades would be better if I could contact my tutors through WhatsApp after class hours.	2	4.0%	2	4.0%	20	40.0%	17	34.0%	9	18.0%
11. Having lessons on WhatsApp helps me to develop my teamwork skills.	1	2.0%	2	4.0%	17	34.0%	18	36.0%	12	24.0%
12. WhatsApp enables me to share information and connect ideas with peers.	2	4.0%	0	.0%	9	18.0%	22	44.0%	17	34.0%

13. Chatting on WhatsApp helps me to maintain social relationships during this pandemic.	1	2.0%	1	2.0%	10	20.0%	20	40.0%	18	36.0%
14. WhatsApp increases my interests and motivation in lessons.	3	6.0%	3	6.0%	26	52.0%	14	28.0%	4	8.0%

Table 3 above depicts the results regarding the perceived ease of WhatsApp usage. Upon closer inspection, all of the respondents indicate strong positive responses to all of the questions except Question 18. For instance, it can be seen that in Question 15, 86% of the respondents find WhatsApp easy to use and only 8% find it challenging. Moreover, 86% of respondents are familiar with the use of WhatsApp and 70% do not feel stressed out when using it. This shows that there is no significant internal barrier that prevents respondents from using WhatsApp effectively. Similarly, external barriers do not interfere greatly with respondents' usage of WhatsApp, as seen in the table, with only a small percentage of respondents being hampered by technical problems (6%), device difficulties (4%), internet connectivity (22%) and financial difficulties in affording data or devices (16%). This is in line with the statement that WhatsApp is a user-friendly tool that has a short learning curve and is convenient and cost-effective to use (Hamad, 2017; Widodo, 2019).

**Table 3**

*Perceived ease of use*

Categories	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	Count	Row (%)	Count	Row (%)	Count	Row (%)	Count	Row (%)	Count	Row (%)
	Valid N		Valid N		Valid N		Valid N		Valid N	
	(%)		(%)		N (%)		(%)		(%)	

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15. The user interface such as design, layout, accessibility of WhatsApp is easy and user-friendly.	1	2.0%	3	6.0%	3	6.0%	24	48.0%	19	38.0%
16. WhatsApp is new to me and I am not comfortable using it.	19	38.0%	24	48.0%	3	6.0%	3	6.0%	1	2.0%
17. The use of WhatsApp stresses me out.	15	30.0%	20	40.0%	9	18.0%	5	10.0%	1	2.0%
18. WhatsApp does not increase my self-esteem because I am not able to express my thoughts openly.	15	30.0%	13	26.0%	20	40.0%	2	4.0%	0	.0%
19. WhatsApp is not	14	28.0%	18	36.0%	15	30.0%	3	6.0%	0	.0%

conducive to my learning because it creates technical problems.

20. Use of WhatsApp is very difficult, mainly by smartphone.

16	32.0%	25	50.0%	7	14.0%	2	4.0%	0	.0%
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21. Use of WhatsApp is very challenging due to low-speed internet connection.

14	28.0%	13	26.0%	12	24.0%	8	16.0%	3	6.0%
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22. Use of WhatsApp is very difficult because of low economy (i.e. unable to afford data or devices).

14	28.0%	15	30.0%	13	26.0%	5	10.0%	3	6.0%
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Table 4 shows students’ opinions on the use of WhatsApp in education. An overwhelming majority of respondents, 46 out of 50 (92%), answered ‘Yes’ and only 4 out of 50 respondents (8%) answered ‘No’, which indicates that WhatsApp is perceived as an integral tool for educational purposes by students. This links back to Question 3 in Table 2 whereby students think that WhatsApp is important for learning. Hence, teachers need to take the opportunity to integrate WhatsApp into more teaching and learning activities.

**Table 4***Question 23: Use of WhatsApp in education*

Categories	Frequency	Percent	Valid	Cumulative
	(n)	(%)	Percent	Percent
Valid responses				
Yes	46	92.0%	92.0%	92.0%
No	4	8.0%	8.0%	100.0%
Total	50	100.0%	100.0%	

Table 5 illustrates students' intention to use WhatsApp in their studies. From the results obtained, more than half of the respondents (60%) were neither excited nor bored with the application itself. Despite the neutral feeling associated with WhatsApp learning, it is important to note that 68% of respondents still express positive intentions to continue using WhatsApp even after the pandemic is over, and 38% of respondents are aware that WhatsApp has a positive influence on their learning. Conversely, 68% of respondents did not find that using WhatsApp was a waste of time. These are positive indicators that sustained and motivated use of WhatsApp over time can potentially drive more positive student behaviour when they are provided with more stimulating tasks that make learning more meaningful (Bonsu et al., 2021; Gon & Rawekar, 2017).

**Table 5***Usage intentions and perceptions*

Categories	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	Count	Row Valid N (%)	Count	Row Valid N (%)	Count	Row Valid N (%)	Count	Row Valid N (%)	Count	Row Valid N (%)
24. The use of WhatsApp in learning excites me.	1	2.0%	3	6.0%	30	60.0%	14	28.0%	2	4.0%

25. I realize that WhatsApp has changed the way I learn positively.	2	4.0%	2	4.0%	27	54.0%	18	36.0%	1	2.0%
26. I feel WhatsApp learning is a waste of time.	1	2.0%	18	36.0%	27	54.0%	2	4.0%	2	4.0%
27. I will continue to use WhatsApp in my learning even after the pandemic is over.	1	2.0%	1	2.0%	14	28.0%	22	44.0%	12	24.0%

Table 6 records students' intention to participate more actively in learning activities using WhatsApp. From the results, it is evident that 24 out of 50 respondents (48%) and 7 out of 50 respondents (14%) have expressed a strong desire to use WhatsApp more actively to improve their learning experience. This ties in with the results obtained by previous research, which demonstrate that students are more active when provided with flexible activities that encourage interaction with peers (Bonsu et al., 2021; Budianto, 2019).

**Table 6**

*Question 28: Active participation in learning using WhatsApp*

	Frequency	Percent	Valid Percent	Cumulative Percent
	(n)	(%)	(%)	(%)
Valid responses				
Disagree	1	2.0%	2.0%	2.0%

Neutral	18	36.0%	36.0%	38.0%
Agree	24	48.0%	48.0%	86.0%
Strongly agree	7	14.0%	14.0%	100.0%
Total	50	100.0%	100.0%	

As shown in Table 7, it is evident that students predominantly use WhatsApp for group discussions (98%) and sharing resources such as documents, images, videos, etc. (80%). This is followed by group studies (60%), informing educational agendas (50%) and lastly for other purposes (2%). Since WhatsApp is commonly used by respondents to communicate with others, it is not surprising that group discussion and the sharing of resources are the more popular educational activities that students engage in. This is supported by studies from Malacela (2016), Pustikayasa (2019) and Suadi (2021), which observe that students enjoy using WhatsApp to communicate with each other to complete group-based tasks and make full use of WhatsApp's sharing features to share multiple types of documents to facilitate collaborative learning tasks.

**Table 7**

*Question 29: Educational activities conducted using WhatsApp*

	Yes		No	
	Count (n)	Row Valid N (%)	Count (n)	Row Valid N (%)
Group discussion	49	98.0%	1	2.0%
Group studies	30	60.0%	20	40.0%
Sharing resources	40	80.0%	10	20.0%
Informing educational agenda	25	50.0%	25	50.0%
Others	1	2.0%	49	98.0%

Based on Table 8, 19 out of 50 respondents (38%) typically spend less than 5 hours a week, 11 out of 50 respondents (22%) spend around 5 to 10 hours, and 15 out of 50 respondents (30%) spend on average 10-15 hours on the application. Meanwhile, 1 out of 50 respondents (2%) spend 15 to 20 hours and only 4 respondents (8%) are constantly using WhatsApp for their studies. Such usage patterns can potentially be attributed to the purpose and the way respondents use WhatsApp. Since classes are typically only a few hours a day, there is no pressing need to use the app all the time for educational activities, resulting in the observed results.

**Table 8**

*Question 30: Hours per week spent on WhatsApp educational activities*

	Frequency	Percent	Valid Percent	Cumulative Percent
	(n)	(%)	(%)	(%)
Valid responses				
Less than 5 hours	19	38.0%	38.0%	38.0%
5 to 10 hours	11	22.0%	22.0%	60.0%
10 to 15 hours	15	30.0%	30.0%	90.0%
15 to 20 hours	1	2.0%	2.0%	92.0%
More than 20 hours	4	8.0%	8.0%	100.0%
Total	50	100.0%	100.0%	

Table 9 shows students’ rankings of their use of WhatsApp for different educational purposes and activities. The top three activities that respondents rank as most beneficial for learning are ‘Improved receptivity to new ideas (5.35)’, ‘Improve technology proficiency (5.30)’ and ‘Facilitate group projects (5.29)’, while ‘Learn new things in new ways’, ‘Learning can extend beyond the classroom’ and ‘Enhanced social skills’ are ranked 4, 5, and 6 respectively. The last three activities that respondents considered least beneficial are: ‘Communicate in new ways with new people (4.81)’, ‘Collaborative problem solving (4.68)’ and ‘Improve creativity and innovativeness (4.57)’. The more beneficial skills reflect concrete outcomes that students experience after using WhatsApp for learning, whereas communicative benefits are less observed as students are already very familiar with communicating using such applications, hence the benefits are not as distinct. Meanwhile, students do not perceive WhatsApp as beneficial to their problem-solving, creativity, and innovative skills as their usage of WhatsApp is limited to only group discussions and sharing resources.

**Table 9**

*Question 31: Ranking of WhatsApp benefits in students’ learning*

	Mean rank
Rankings	
Improve technology proficiency	5.30

Enhanced social skills	4.94
Improve creativity and innovativeness	4.57
Learn new things in new ways	5.04
Communicate in new ways with new people	4.81
Collaborative problem solving	4.68
Facilitate group projects	5.29
Learning can extend beyond the classroom	5.02
Improved receptivity to new ideas	5.35

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## DISCUSSION

### *Perceived Usefulness*

In the 21st century, learning processes have shifted to online platforms for students' ease of use in the learning process. The result of this study revealed that many students use WhatsApp for learning during this COVID-19 pandemic as it enables them to share information, connect ideas with their peers, and maintain social relationships between lecturers and students at any time and any place. From these results, a pattern can be observed regarding the use of WhatsApp among the respondents. Most of them engage in surface usage, meaning that they only use the available features for general activities and do not use the tool beyond that. Hence, communication and interaction score highly compared to learning concepts and mastery of skills. This is in accordance with Malecela (2016) study results, where students believed WhatsApp was helpful in their study as it facilitates communication with other students and the instructor, by enhancing collaborative learning and sharing educational information. This is something educators should look into when integrating WhatsApp by providing more opportunities for students to see the tool as something more than just a social tool (i.e. using it as a medium of instruction, having discussions and question and answer sessions, etc.).

### *Perceived Ease of Use*

The result showed that most of the students perceived WhatsApp as user-friendly and posed no difficulties to the respondents. Similarly, a previous study conducted by Ahad and Lim (2014) found that WhatsApp is extensively used due to its attributes such as ease of use, real-time messaging, speed, and low cost. Therefore, to enhance the students' learning processes, educational institutions should look into upgrading the internet facilities. This is in line with the findings of the previous study conducted by Mistar and Amin Embi (2016) that encouraged educational institutions to provide internet facilities as it is the top priority of today's education. By removing such external barriers, students can focus on their learning and be able to keep up with lessons alongside their peers. This also has implications for teachers, as they can focus on delivering quality lessons to all of their students without struggling to ensure that some of them might potentially get left behind.

### *Usage Intentions and Perceptions*

The findings of the study indicated that the majority of the participants agreed that WhatsApp should be incorporated into education and should be used even after the pandemic is over. This is consistent with the findings of Gasaymeh (2017), who discovered that, although the use of WhatsApp for educational purposes was limited, participants perceived the use of WhatsApp in learning to be fun, useful, and simple, and they had positive feelings toward the intention of using WhatsApp in learning. Additionally, Tang and Hew (2017) had a similar view when they reported that WhatsApp has been used in different academic disciplines to support students' learning. This is significant for teachers because educational technology is ubiquitous and a significant part of the learning culture in many parts of the world; thus, teachers play an important role in guiding students to use technology wisely for their everyday learning.

Likewise, Yilmazoy et al. (2020) caution that introducing technology into classroom learning has risks, including

addiction, straying off task, distractions, and even greater effort must be spent on providing feedback and keeping track of students. Thus, teachers have the responsibility to monitor and structure WhatsApp learning to ensure that students gain a positive learning experience, which in turn raises positive perceptions and also redirects students to more meaningful learning intentions beyond chatting and sharing resources with friends.

### ***Integration of WhatsApp in Learning***

Results indicate that students are positively inclined to use WhatsApp actively in the learning process, which serves as a positive sign for educators to integrate WhatsApp in the classroom. Since students mainly use WhatsApp for group discussions and sharing resources, it is vital that teachers consolidate such activities so that students feel comfortable using WhatsApp before introducing other tasks or elements. It is also important for teachers to buy into the idea that WhatsApp can be more than just a social communication tool. When teachers are confident and motivated to use WhatsApp, they will naturally think of new ways to integrate it into their lessons. This will directly affect students' outlook and usage of WhatsApp in their learning. However, some students responded that WhatsApp does not seem to be the right tool when it comes to facilitating their learning in groups, which is possibly due to reasons like limited features that support group collaboration.

### ***Limitations of study***

One of the limitations of this study is the type of samples used. This study focuses only on foundation students at a selected private university. Thus, the respondents might potentially have a positive bias towards technology usage for online classes as it is a new experience for most of them during this pandemic. Therefore, repeated studies can look into increasing the type of student population to higher levels like diplomas, degrees, masters and even PhD students to observe the effect of WhatsApp on their learning.

Another limitation of this study is the lack of qualitative data that can also be used as a source of additional evidence to support the quantitative findings. As the study was restricted to students answering the survey questions with predetermined constructs, there was little room to further investigate students' thoughts and feelings regarding the use of WhatsApp. Moving forward, researchers can employ a mixed-methods approach to gain more insights regarding students' perceptions of WhatsApp and how to further improve the use of the app to boost their learning.

## **CONCLUSION**

The main focus of this study was to gain insight into students' perspectives about the use of WhatsApp for learning during the COVID-19 pandemic. The study adapted four constructs from the technology acceptance model 2, which are 'Perceived usefulness', 'Perceived ease of use', 'Usage intentions and perceptions' and 'Integration of WhatsApp into actual practice'. Results from this study indicated that students had highly positive perceptions towards WhatsApp across all four constructs and also revealed that students and teachers merely demonstrate surface usage of the application for teaching and learning, specifically emphasising communicative and group tasks which facilitate interaction and resource sharing.

This study contributes primarily to educators as a means to encourage them to challenge themselves to inculcate positive attitudes towards educational technology as the new educational norm and also proactively plan teaching and learning sessions that incorporate WhatsApp to engage and raise students' motivation and interest in the classroom. Besides that, this study is also relevant to students to further explore more beneficial ways to incorporate WhatsApp as part of their learning routine or habit beyond its usual functions. Hence, for students to learn successfully using WhatsApp and any other form of technology, key stakeholders including government bodies, administrations, teachers, institutions, and software and hardware developers need to lend more support, such as providing the required internet facilities, funding, policies, etc. to remove any potential technological barriers.

Additionally, this research can be used to inform policies related to technology usage in the classroom. For instance, under the 9th shift of the Malaysian Higher Education Blueprint 2015-2025, the Malaysian government aims to harness the power of learning to achieve the National e-learning Policy. Three key initiatives to establish a national e-learning platform include making online learning an integral component with 70% of courses being offered in the blended

mode in 2025; launching Massive Open Online Courses (MOOC) in partnership with other MOOC consortiums; and establishing cyber infrastructure (Ministry of Education, 2015). Hence, education providers could take more proactive measures to encourage healthy device use in the classroom and improve technology literacy rates among students to equip them with the necessary skills to manoeuvre the technological landscape of current society. Furthermore, higher education institutions should also begin to revamp the curriculum to include more technology-based activities or assessments such as 'Blended Learning Substitute' learning modes that engage students to handle class tasks and complete formative assessments using technological applications such as Kahoot!, Padlet, interactive videos, online quizzes, etc.

Thus, future research can enlarge the scope by measuring and comparing the effectiveness of WhatsApp with other similar applications such as Telegram, Discord, and Facebook Messenger. This is because social media has become an important social tool for the current generation and these social media applications boast a wider repertoire of functions than WhatsApp. Furthermore, research can also be conducted to document best practices for using WhatsApp or any other educational technology as a guide for other educators to gain new ideas and inspiration for their own instructional practice.

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