The Urgency of WhatsApp in Online Learning: Elaboration and Perception of Islamic Religious Education Teachers in Indonesia

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ABSTRACT

This study aims to analyze the perceptions of Islamic Religious Education teachers regarding the use of WhatsApp as an online learning platform. Using a mixed parallel convergent research method, this research collects quantitative data through surveys, while qualitative data is obtained through in-depth interviews, observation, and documentation studies. This study shows that students in teacher certification programs in Indonesia are heavy users of WhatsApp, as evidenced by 97% of quantitative research respondents spending more than 4 hours per day for academic purposes. With an average standard deviation value of 0.816, this study confirms that students' perceptions of WhatsApp positively impact academic achievement. This is reasonable because they see WhatsApp as having flexibility not limited by place and time; features that are easy to use, integrated with lecture support software; and a fairly strong data security system. In implementing the certification program, WhatsApp's advantages are used to support the success of online classes, such as group discussions, sharing educational knowledge, sharing references, and finding academic agendas. This study also shows that WhatsApp can encourage of Islamic Religious Education teachers to have collaborative skills in teams. However, WhatsApp is still not maximized due to the absence of features for conducting evaluations, a poor learning management system, and the internet in Indonesia, which is not evenly distributed. These findings can be used as a basis for the government to improve the quality of online learning through WhatsApp. Because of its important role in the teacher certification program, we expected that Islamic religious education teachers can use the features in WhatApp to optimize their use in the academic world.

Keywords: Islamic Religious Education, Online Learning, Teacher Certification Program, WhatsApp.

INTRODUCTION

WhatsApp is a popular app with 2 billion users in over 180 countries [1]. [2]Its use has expanded due to its ability to download text, audio, and video messages for free. Asia's high level of Internet usage has also contributed to the growth in the number of WhatsApp users.[3] Besides being a social media, WhatsApp is also used in education as a communication tool supporting the teaching and learning process.[4] Several researchers have noted that higher education institutions use WhatsApp as a learning tool, especially after the COVID-19 pandemic, because it can facilitate synchronous and asynchronous communication, enhance social interactivity, and support creative and collaborative approaches to learning.[5] However, some education scholars have a skeptical view regarding WhatsApp's effectiveness in learning. They argue that WhatsApp can distract students and allow manipulation of student actions because students may be tempted to open things unrelated to learning. Perceptions regarding using WhatsApp as a learning tool also vary, some support it, and some reject it.[6]

Contemporary studies of WhatsApp in education have demonstrated its benefits.[7] Although WhatsApp was not specifically designed for educational environments, given that some have concluded that its affordability can support adequate educational resources for teaching and learning.[8] Several studies, such as those conducted by Agrawal and Mittal, explored WhatsApp as a constructive medium to strengthen educational relations.[9] In addition, implementing w-CRM via WhatsApp was also identified as an effective way to improve the relationship between students and the components involved in learning. The study by Aljaad Hamid also provides convincing evidence of the positive impact of WhatsApp on student academic performance and team effectiveness.[10] Aljaad Hamid's research found that unplanned changes that occurred in WhatsApp-based learning actually contributed to its sustainability. Although these studies provide great benefits, especially in the use of WhatsApp for online learning, there has not been much empirical research investigating the use of WhatsApp in teacher certification programs,

[1] Philipe Melo and others, 'WhatsApp Monitor: A Fact-Checking System for WhatsApp', *Proceedings of the 13th International Conference on Web and Social Media, ICWSM 2019*, Icwsm, 2019, 676–77 <https://doi.org/10.1609/icwsm.v13i01.3271>.

[2] et al Melo, Philipe, 'Whatsapp Monitor: A Fact-Checking System for Whatsapp', *Proceedings of the International AAAI Conference on Web and Social Media*, 13 (2019).

[3] and Indra Bangsawan Napratilora, Martina, Hendro Lisa, 'Using WhatsApp as a Learning Media in Teaching Reading', *Mitra PGMI: Jurnal Kependidikan MI*, 6.2 (2020), 116–25.

[4] Dedi Jasrial, 'Utilizing WhatsApp Application for Teaching English Language: Why and How?', *International Seminar and Annual Meeting BKS-PTN Wilayah Barat*, 1.1 (2019).

[5] Syarifah Afsyah, 'WhatsApp Application in English Language Teaching (ELT) Context: Media to Describe People', *Utamax: Journal of Ultimate Research and Trends in Education*, 1.1 (2019), 23–28.

[6] et al Saputra, Ulan Rindayan, 'Students' Sentence Errors on WhatsApp Daily Status: A Literature Review', *Celebes Journal of Language Studies*, 2021, 23–31.

[7] and Xavier Carbonell. Calvo, Fran, 'Using WhatsApp for a Homeless Count', *Journal of Social Distress and the Homeless*, 26.1 (2017), 25–32.

[8] and Syamimi Md Ariff Lim Ahad, Annie Dayani, 'Convenience or Nuisance?: The 'WhatsApp'Dilemma', *Procedia-Social and Behavioral Sciences*, 155 (2014), 189–96.

[9] D Agrawal, S. R., & Mittal, 'Constructive Usage of WhatsApp in Education Sector for Strengthening Relations', *International Journal of Educational Management*, 33.5 (2019), 954–64.

[10] N Aljaad, M., & Hamad, 'No Title', *Whatsapp for Educational Purposes for Female Students at College of Education–King Saud University. Education*, 137.3 (2017), 344–66.

especially in Indonesia, which has just drafted an online teacher certification policy since 2021. So the implementation is still ongoing. They are facing several problems that need to be fixed.[11]

This study analyzes student perceptions of using WhatsApp as an online learning support tool. This analysis will focus on the perceptions of students currently undergoing a teacher certification program in Indonesia using WhatsApp and its impact on academic achievement. In addition, this research also looks at how the use of WhatsApp affects the effectiveness of mixed teams in the learning process. This decision was taken as a researcher's response to the religious policies of the Republic of Indonesia, which govern the implementation of in-service teacher professional education since 2020 online.[12] Considering the effectiveness of time and effort, or the large number of teachers from various remote areas who experience limited funds, the government, through religious policies, has extended online-based learning to date, including the use of WhatsApp in online learning, which enables interactive collaboration, knowledge sharing, and effective communication between student teams in tertiary institutions.[13] This phenomenon of using mobile technology allows students to learn and interact in real-time through the exchange of text messages, pictures, videos, and voice notes.[14]

This research is based on an argument that the free text, audio, and video message download facility provided by WhatsApp can positively contribute to the success of online learning.[15] However, it is not yet known whether the inability of high school students to condition themselves to use social media also becomes the same problem for students in tertiary institutions.[16] Other doubts were conveyed by Adi, P. W., Martono, T., & Sudarno, S. he explained that the inequality of electricity and the internet in Indonesia is the most important factor causing the success of online learning in Indonesia not to be achieved either with any media, including WhatsApp.[17]. However, the lecturer's techniques and methods in teaching are also factors that increase optimism and change student perceptions to achieve learning success.[18] Departing from these various impossibilities, this research is important to determine students' perceptions of using WhatsApp in online learning. Perception can describe how the conditions and learning experiences experienced by students ?[19]

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[11] T. F. R Pereira, A. A. C., Destro, J. R., Bernuci, M. P., Garcia, L. F., & Lucena, 'Effects of a WhatsApp-Delivered Education Intervention to Enhance Breast Cancer Knowledge in Women: Mixed-Methods Study', *JMIR MHealth and UHealth*, 8.7 (2020), 17430.

[12] Gowhar Farooq, 'Politics of Fake News: How WhatsApp Became a Potent Propaganda Tool in India', *Media Watch*, 9.1 (2017), 106–17.

[13] et al Rosenfeld, Avi, 'A Study of WhatsApp Usage Patterns and Prediction Models without Message Content', *ArXiv Preprint ArXiv*, 1802.03393 (2018).

[14] et al Jabbar, Jasiya, 'The Impact of WhatsApp on Employees in Higher Education', *Recent Advances in Intelligent Systems and Smart Applications*, 2021, 639–51.

[15] and Corinna Peil Kaufmann, Katja, 'The Mobile Instant Messaging Interview (MIMI): Using WhatsApp to Enhance Self-Reporting and Explore Media Usage in Situ', *Mobile Media & Communication*, 8.2 (2020), 229–46.

[16] S Yustika, G. P., Subagyo, A., & Iswati, 'Masalah Yang Dihadapi Dunia Pendidikan Dengan Tutorial Online: Sebuah Short Review', .. *Tadbir: Jurnal Studi Manajemen Pendidikan*, 3.2 (2019), 187.

[17] S Adi, P. W., T., & Sudarno, 'Pemicu Kegagalan Pada Pembelajaran Di Sekolah Selama Pandemi Di Indonesia (Suatu Studi Pustaka)', *Research and Development Journal of Education*, 7.2 (2021), 464–73.

[18] and Mira Kusmira Ariansyah, Ariansyah, 'Analisis Sentimen Pengaruh Pembelajaran Daring Terhadap Motivasi Belajar Di Masa Pandemi Menggunakan Naive Bayes Dan SVM', *Faktor Exacta*, 14.3 (2021), 100–106.

[19] et al Bishop, Valerie, 'The Impact of the Caremongering Social Media Movement: A Convergent Parallel Mixed-methods Study', *Health & Social Care in the Community*, 30.6 (2022), 5167-5175.

RESEARCH METHOD

This study utilized a convergent parallel mixed-methods research design, as outlined by [20]. Quantitative data were gathered through self-administered online surveys, while qualitative data were obtained via two focus group sessions with students from the Teacher Professional Education Postgraduate Study Program at Walisongo State Islamic University, Semarang, Indonesia. Both quantitative and qualitative components were conducted concurrently, analyzed independently, and interpreted together to ensure validation and triangulation [21]. This approach facilitated a comprehensive understanding by combining numerical data with thematic insights.

For the quantitative aspect, surveys with five closed-ended questions, adapted from .[22] framework, were distributed to 150 students using Google Forms, with 100 respondents participating. The survey explored WhatsApp usage for academic purposes, including frequency, duration, and its effects on academic performance. Ethical approval was secured beforehand, and participation was voluntary and anonymous. Data were analyzed using descriptive statistics to identify trends and insights.

Qualitative data were collected through in-depth interviews with 10 purposively sampled participants from 24 invited students. These sessions explored themes such as the role of WhatsApp in online classes, its impact on class unity, and student collaboration on assignments. Focus group interviews provided rich, contextual insights into the participants' experiences, highlighting group dynamics and individual perspectives [23].

FINDINGS AND DISCUSSION
Quantitative Research Findings

The survey was collected with the help of Google Forms among students of the Teacher Professional Education study program at Walisongo State Islamic University Semarang, Indonesia. The survey link is distributed through various platforms, including WhatsApp, Facebook, and Instagram. A total of 134 students were recorded as giving responses to the accumulated Google form link. After observing, there were 34 responses whose data we considered invalid (including not completing the survey). In contrast, we considered 100 responses valid to be used as a data source at a later stage. The IBM Statistical Package for the Social Sciences (SPSS) was utilized to analyze quantitative data. This involved descriptive statistical analysis of standard frequencies, percentages, and means. The survey items provided insights into various aspects: frequency of WhatsApp usage, daily time spent on WhatsApp, weekly time spent on academic-related activities, and students' perceptions regarding WhatsApp's impact on academic achievement. The ensuing section presents the quantitative research results, as adapted by Antonio Augusto Claudio in 2020.[24]

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[20] Creswell, (2013)

[21] et al Murphy, Kathy, 'Reflections on the Added Value of Using Mixed Methods in the SCAPE Study', *Nurse Researcher*, 21.4 (2014).

[22] and Ajay Bailey Hennink, Monique, Inge Hutter, 'Qualitative Research Methods', *Sage*, 2020.

[23] Anne Lazaraton, 'Quantitative Research Methods', *Handbook of Research in Second Language Teaching and Learning*, 2005, 209–24.

[24] et al Pereira, Antonio Augusto Claudio, 'Effects of a WhatsApp-Delivered Education Intervention to Enhance Breast Cancer Knowledge in Women: Mixed-Methods Study', *JMIR MHealth and UHealth*, 8.7 (2020), e17430.

Two survey items were analysed using frequencies and proportions to answer research questions about college students' use of WhatsApp. Table 1 illustrates that WhatsApp is used multiple times daily by nearly all participants (96.0%), while merely three respondents utilize it once a day. These findings indicate that the students who were respondents in this study were heavy WhatsApp users.

Table 1. Frequency of Student WhatsApp Usage in a Day.

Period Of Use	Frequency	Percentage (%)
Very often in a day	96	96.0
Once a day	4	4.0
Total	100	100.0

Table 2 indicates that 12% of the participants devote over 10 hours daily to WhatsApp, while 70 respondents use it for 7-10 hours a day. Additionally, 5% of the respondents spend 4-6 hours on the platform, and 3 respondents utilize it for 1-3 hours daily. Notably, there are no participants who abstain from using WhatsApp during the day. This data indicates that the respondents in this study, on average, are heavy users of WhatsApp.[25]

Table 2. The Time Used on WhatsApp in One Day

Period Of Use	Frequency	Percentage (%)
>10 Hours/day	12	12.0
7-10 Hours/day	70	70.0
4-6 Hours/day	5	5.0
1-3 Hours/day	3	3.0
Total	100	100.0

In the third section, the survey data was examined using frequency, percentage, and average score techniques to illustrate students' weekly academic-related activities on WhatsApp (presented in Table 3). Moreover, Table 3 outlines the various types of academic-related activities frequently performed by students on WhatsApp. Lastly, Table 4 presents student opinions on WhatsApp usage and its influence on academic achievement.

Table 3. The level of Use of WhatsApp for Academic Activities in Online Learning.

	Frequency	Percentage (%)
Group discussion	27	27
Group studies	19	19
Sharing resources	31	31
Informing educational agenda	23	23
Total	100	100

[25] Levent Cetinkaya, 'The Impact of WhatsApp Use on Success in Education Process', *International Review of Research in Open and Distributed Learning*, 18.7 (2017).

Table 3 presents the academic activities performed by students on WhatsApp. According to the results, 27% of the respondents engage in group discussions with peers, while 31% use WhatsApp for sharing resources. However, only a small percentage of students, 23% and 19% respectively, use WhatsApp for educational agendas and group studies. The data indicates that WhatsApp is predominantly utilized for group discussions, sharing resources, and conducting study groups as part of academic-related tasks.

Table 4. Descriptive Statistics of Student Conformity Levels about the Use and Impact of WhatsApp on Academic Achievement.

No	Statement	N	Mean	SD
1	WhatsApp makes it easy for me to convey various information quickly.	100	3.91	0.721
2	Through WhatsApp, I can interact academically with my peers and lecturers easily.	100	3.90	0.846
3	WhatsApp is a very useful online platform for supporting group projects lecturers assign.	100	3.94	0.743
4	WhatsApp facilitates knowledge sharing more efficiently than any other social media.	100	3.98	0.801
5	I can communicate clearly through WhatsApp messages.	100	4.00	0.710
6	My interactions in WhatsApp conversations are easy to understand.	100	3.92	0.829
7	WhatsApp gives individual freedom, which sometimes undermines spelling and grammar in sentences.	100	2.17	1.004
8	Using WhatsApp can reduce concentration during lectures.	100	2.12	1.021
9	WhatsApp often distracts me from my personal study schedule.	100	2.12	1.102
10	Message notifications provided by WhatsApp often disrupt my concentration in doing college assignments.	100	2.29	1.109
11	WhatsApp sometimes strikes me in finding a balance between online and offline activities.	100	2.00	0.915
12	I often put off my academic work because I use WhatsApp too much.	100	2,18	1,101
	N valid (by list)	100	3,11	0,816

Finally, a survey containing statements about students' perceptions of using WhatsApp and the impact on academic achievement, Table 4 attempts to display descriptive statistics in average and standard deviation (SD). The findings show that the respondents positively agree with the six statements. They believed that WhatsApp was useful in conveying the information discussed easily (M = 3.91 SD =0.721) and Promoting active involvement in academics among fellow students and instructors (M = 3.90 SD =0.846). WhatsApp is a very useful online platform for supporting group projects lecturers assign (M = 3.94 SD = 0.743) and enabling fast knowledge sharing (M = 3.98 SD = 0.801). In addition, the attitude of respondents towards interaction using WhatsApp messages was considered understandable (M = 3.92 SD = 0.829) and clear (M = 4.00 SD = 0.710).

However, this discovery also uncovers the stance of participants who strongly concur that WhatsApp negatively impacts sentence structure and spelling (M = 2.17 SD = 1.004), additionally, it leads to a reduced ability to focus during academic presentations. (M = 2.12 SD = 1.021). Nonetheless, most students remained neutral to the point of slightly disagreeing with the view that WhatsApp interfered with personal study schedules (M = 2.12 SD = 1.102), hampered task completion (M = 2.29 SD = 1.109), made it difficult to balance online activities (M = 2.00 SD = 0.915), and causes delays in academic work (M = 2.18 SD = 1.101). From these findings, students seem to favor employing WhatsApp for academic reasons due to its advantageous attributes, which have minimal adverse effects on their academic performance.

Discussion of Quantitative Research

The research data noted that around 97% of students from the teaching professional education study program were heavy users of WhatsApp because, on average, they spent more than 4 hours per day for academic purposes. This finding aligns with Cetinkaya Levent's research that WhatsApp has become popular in educational circles because it has convenient and easy-to-use features.[26] When asked about the effect of WhatsApp on academic achievement, most respondents stated that the effect was positive. There are around 89% of respondents who use WhatsApp for more than 4 hours per week for various academic activities, such as group discussions (about 33%), sharing resources (about 31%), delivering educational agendas (about 20%), and group studies (about 31%) about 16%). This result aligns with Antonio Augusto Claudio's research, which stated that WhatsApp and its unique features are useful for exchanging information and knowledge between students.[27] In particular, the findings of this study support the consistent achievement of learning objectives, similar to previous research conducted in the Indonesian context.[28]

In contrast to Khodabandeh Wibowo study, which asserts that WhatsApp negatively affects students by leading to poor time management, delays, and lack of focus due to its recreational usage among students, this research shows different outcomes [29]. The average scores from above indicate that the respondents in this study express neutral to disagreeing responses regarding WhatsApp disrupting their personal study schedules (M = 2.12, SD = 1.102), hindering them from completing assignments (M = 2.29, SD = 1.109), and causing difficulties in balancing online activities (M = 2.00, SD = 0.915) as well as academic work delays (M = 2.18, SD = 1.101). These results suggest that students from the teaching professional education program in Indonesia demonstrate strong self-discipline and effective time management while utilizing WhatsApp for academic purposes, thus positively influencing their academic achievement. Consequently, it is evident that the features provided by WhatsApp support the learning process in online classes.[30]

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[26] Cetinkaya.

[27] Pereira, Antonio Augusto Claudio.

[28] Emmanuel. Béché, 'WhatsApp and Educational Continuity in Africa in the Era of COVID-19: From Its Misuse to "WhatsApp Education".'' Competence-Based Curriculum and E-Learning in Higher Education', *IGI Global*, 2023, 180–98.

[29] A M Wibowo, 'Political View and Orientation of the Rohis Members Toward the Form of the State', *Analisa: Journal of Social Science and Religion*, 2.2 (2017), 234 <https://doi.org/10.18784/analisa.v2i2.498>.

[30] et al Imamyartha, David, 'EFL Learners' Engagement and Learning Motivation in Team-Based Mobile Language Learning through WhatsApp', *Teaching English with Technology*, 22.1 (2022), 82–103.

In the view of Lev Vygotsky's Social Constructivism theory, the research results that recorded teaching professional education study program students as heavy WhatsApp users with an average of more than 4 hours per day for academic purposes can be seen as clear evidence of the importance of social interaction in the learning process that can be built through WhatsApp. Vygotsky emphasized that learning occurs through social interaction and that knowledge is built through collaboration and communication with others.[33] WhatsApp, with its convenient and easy-to-use features, provides an ideal platform to support this social interaction. The use of WhatsApp for group discussions, resource sharing, delivering educational agendas, and group studies reflects the core principles of Social Constructivism, where students actively construct their knowledge through meaningful social interactions[34]. The results of the study showing the positive influence of WhatsApp on students' academic performance underscore the importance of this communication tool in creating a collaborative and supportive learning environment [35]. These findings support Vygotsky's theory that effective learning occurs through social mediation and the use of tools that facilitate interactions between individuals, resulting in consistent achievement of learning goals.

In addition, Davis' Technology Acceptance Theory (TAM) can be used to explain the findings of this study. Based on TAM, the two main factors that influence technology acceptance are perceived usefulness and perceived ease of use [36]. The results showed that students from teaching professional education programs in Indonesia have strong self-discipline and effective time management when using WhatsApp for academic purposes. This suggests that students perceive WhatsApp as a useful and easy-to-use tool to support their academic activities [37]. Perceived usefulness is reflected by the significant positive impact on their academic performance, as the features provided by WhatsApp such as instant messaging, document sharing, and group discussion support the online learning process. Meanwhile, perceived ease of use is seen from students' ability to manage time and self-discipline when using this application [38]. This acceptance of WhatsApp technology by students is in line with TAM predictions, where positive perceptions of the usefulness and ease of use of the technology increase its acceptance and effectiveness in an educational context.

Qualitative Research Results and Discussion

In this study, qualitative data were collected through in-depth interviews with the help of a smartphone voice recorder or video device. The interview session with 1 informant was divided into two stages. Where on the first day interviewed 5 people for 82 minutes, while in the second session interviewed 5 people for 73 minutes through the Zoom meeting application. Data from in-depth interviews were then collected and analyzed thematically using the Miles and Huberman model through the stages of data collection, data reduction, data presentation, and drawing conclusions that answered research questions.

The table below shows the profiles of informants consisting of 8 males and 8 females. They are students of the teacher professional education study program at the Faculty of Education and Teacher Training at Walisongo State Islamic University Semarang. All participants are students who take online lectures and have admitted to using WhatsApp to help their academic process. Because in-depth interviews were conducted online via the Zoom application, we could select informants with different demographics based on the distribution of provinces in Indonesia. This is done to obtain a

variety of data and enable representation of the social conditions of Indonesian society in various provinces.

Table 5. Informant Profiles in In-Depth Interview Activities

Informant	Age (Years)	Provincial Origin	Teaching Time	Last Education
R1	45	Central Java	13 Years	Bachelor of Education
R2	36	East Java	10 Years	Bachelor of Education
R3	29	West Java	7 Years	Bachelor of Education
R4	37	North Sumatra	12 Years	Bachelor of Education
R5	48	East Nusa Tenggara	15 Years	Bachelor of Education
R6	29	Lampung	6 Years	Master of Education
R7	34	Lampung	8 Years	Bachelor of Education
R8	41	South Kalimantan	11 Years	Bachelor of Education
R9	49	Central Java	16 Years	Bachelor of Education
R10	38	West Papua	8 Years	Master of Education

Some of the topics we asked informants were the length of time they needed to use WhatsApp, what was their purpose for using WhatsApp, and which menus were considered the most helpful for academic activities. On the first topic, namely behaviour related to the frequency of WhatsApp, all participants admitted to using this application daily to find academic information provided by lecturers or managers of teacher professional education study programs. Even on holidays, they still use WhatsApp to talk about tasks that haven't been done before. Informants in the first session looked more intense and obligatory, as meant by informant R2.

"WhatsApp helps us in discussions in online classes; I open WhatsApp to get the latest information about lectures on implementing the teacher certification program at UIN Walisongo Semarang. Even though it's only a glimpse of important messages, I often open WhatsApp, even daily. Everything depends on needs only (R2/20/07/2023)."

Informant R7 highlighted the frequent use of WhatsApp, emphasizing that they checked the app nearly every hour to stay updated on lecture assignments or essential information from their study program. While the initial purpose was to review important messages, this habit often extended into browsing friends' stories and engaging in discussions with classmates, consuming a considerable amount of time. This pattern reflects the broader trend among participants in the second session, who exhibited high intensity in their WhatsApp usage for online classes. The extended time spent on the app was influenced by their academic workload, communication needs, and daily routines. In contrast, participants in the first session demonstrated more restrained usage, primarily limited to checking urgent messages or engaging in brief interactions. This disparity underscores how varying habits and communication priorities shaped the participants' engagement with the platform.

The second topic we asked the informants about was perceptions about the reasons for using WhatsApp. In the first or second session, the informants focused on the common reasons for using

WhatsApp in online classes, which were divided into three aspects: (1) the flexibility of WhatsApp, which can be used in various places and without time limits, (2) ease of access to support online learning, (3) there is integration between WhatsApp and other software, (4) there is End-to-End cryptography that can ensure data confidentiality, and (5) the availability of many menus such as group and broadcast features which play an important role in facilitating information disclosure.

Informants R1, R2, R4, and R3 emphasized the advantages of WhatsApp in online learning, particularly its high flexibility and accessibility. According to R1, WhatsApp's widespread use among students allows seamless communication at any time and place, eliminating the constraints of schedules. Similarly, R4 highlighted that WhatsApp bridges geographical gaps among peers from various regions and provinces, fostering collaboration and effective communication despite the distance. Additionally, the platform's ease of access and intuitive design were noted as significant benefits. R3 explained that WhatsApp's user-friendly interface is straightforward and does not require extensive training, making it accessible even for those with limited technological skills. The simplicity of its features ensures that users can quickly adapt and use the app effectively, making it an invaluable tool for students navigating online learning environments.

One of the key reasons for choosing WhatsApp as a communication platform is its seamless integration with other software applications. This includes the automatic synchronization of phone contacts and its compatibility with multiple platforms, which enhances user convenience. Informant R7 highlighted this by explaining how WhatsApp directly accesses the phone's contact list, automatically displaying all saved contacts without requiring manual addition unless the contact is not already in the list (R7/23/07/2023). Furthermore, R7 emphasized the versatility of WhatsApp, noting that it supports various platforms such as Android, iOS, Windows Phone, and web versions. This cross-platform integration ensures that users, including students and lecturers, can maintain connectivity across devices, significantly aiding online learning and collaborative activities.

The fourth reason for using WhatsApp in online learning is the existence of an End-to-End Cryptography system that can ensure data confidentiality. R6 sees that WhatsApp can effectively keep members connected and promote understanding and transparency along with high privacy safeguards. According to R8, WhatsApp uses end-to-end encryption on messages, voice calls, and video calls. This means messages can only be read by the sender and recipient, so your data is kept private from prying eyes or third parties who don't provide it. However, R10 emphasises the availability of the group menu, which provides its advantages because the End-to-End Cryptography system makes information only read directly by group residents. This is important because they need it to discuss and provide feedback on information provided by others.

On the third topic of discussion, the informants agreed to mention three features considered the most helpful in achieving academic needs in online classes. Among those, they mentioned namely; 1) Groups and broadcast features, 2) Sending files and locations, 3) Voice and video calls, and 4) Emojis and Stickers. The groups and broadcast features are used to create groups and communicate with several people simultaneously. Informant R8 explained that the "Broadcast" feature helps students to find respondents when given research assignments by lecturers. This feature can send survey messages to multiple contacts at once without revealing the identity of the other recipients. Then the next feature that is considered important and very helpful is "Send Files and Locations".

Informant R10 explained that WhatsApp allows students to send various types of files, such as photos, videos, and documents (PDF, Word, Xls and others) to lecturers. This feature helps students to submit assignments on time without the need for the help of a delivery service.

Then the next feature that is considered very helpful is voice and video calls. Informant R1 explained, "Apart from text messages, we are greatly helped by voice and video call menus via an internet connection; this makes it possible to have face-to-face discussions with classmates from different provinces". In addition, informant R5 added that video and voice calling features could cut costs if a lecturer asks us to communicate with scientists abroad. Informant R7 explained that voice or video calls can also be made in groups, allowing them to solve one lecture problem with a discussion that more than two people can attend. This opportunity provides an opportunity to receive more ideas and ideas fairly.

The last feature that students often use is stickers and emoticons. WhatsApp provides a variety of stickers and emoticons that you can use to express yourself more creatively in your conversations. Informant R3 mentioned using emojis to enrich communication expressions when agreeing, disagreeing, or disagreeing with a statement submitted by a group member. Meanwhile, R8 considers that emojis facilitate their inability to compose words expected to be represented by emoji expressions and stickers. As well as attracting attention, emojis and stickers can help convey feelings and emotions in more engaging ways than words alone. They can express joy, sadness, love, surprise and many other feelings more easily.

On the fifth topic, we invite informants to provide feedback on the influence of WhatsApp on the compatibility of friendships in online classes. Four participants from the first session (R1, R2, R4, R5) and two from the second session (R7, R8) agreed that their closeness with their classmates was quite detrimental because some did not get a place to talk. This happens because of the domination of certain people who control the team chat. More broadly, informant R8 explained that some members of his class felt indifferent to every discussion in the WhatsApp group. This happened because the number of messages piled up (up to more than 100) made classmates feel lazy to follow, read, and understand previous chats. R8 further admitted that he did not feel part of the class members who had an obligation to communicate online because there was no pressure, like during offline lectures, which presented physical interaction. This is exacerbated by junk messages such as stickers that pile up and share information unrelated to lectures, making it lazy to follow the previous chatter.

The features owned by WhatsApp allow students of the teaching professional education study program to support academic activities in online learning. WhatsApp has a role in strengthening interaction, collaboration, and distribution of online learning tools. Students can take advantage of the group feature for discussions with a fairly high level of data security. Informants divided into two interview sessions believed that all group members were encouraged to have the courage to express their opinions regarding the learning theme being studied. An open attitude is important because it will increase active class participation, which can help understand the material well and create a more interactive online learning atmosphere.

In general, the informants in the two interview sessions agreed that WhatsApp was considered to have contributed to the effectiveness of online learning. All informants see WhatsApp as having a positive impact because it has flexibility not limited by place and time; ease of access to support

online learning, integration with other software; strong data security system; and the many WhatsApp features relevant to online learning. WhatsApp can also improve the ability to work in groups because it can simplify needs in one feature and can be relied upon to maintain communication between lecturers and students who are separated by time and distance. All informants agreed that WhatsApp could encourage collaboration between students in one class. However, the disadvantages of online learning with the help of WhatsApp still exist. Despite document and media sharing features, the platform is not designed with specific educational features in mind, such as assessment tools, learning management systems, or an optimal display for teaching.

The Theory Acceptance Model (TAM) developed by Fred Davis can provide an in-depth perspective on the research results regarding the use of WhatsApp by teaching professional education study program students in online learning. According to TAM, technology acceptance is determined by two main factors: perceived usefulness and perceived ease of use [39]. In the context of this study, WhatsApp features such as discussion groups, data security, and the ability to encourage active participation can increase the perceived usefulness of the application. Students felt that WhatsApp facilitated interaction and collaboration, which in turn improved understanding of the material and created a more interactive learning atmosphere [40]. Perceived ease of use is also evident from students' comfort in using WhatsApp to discuss and express opinions, indicating that this technology is not only easy to use but also effective in supporting academic activities [41]. Thus, from a TAM perspective, students' adoption of WhatsApp can be explained by the high perceived usefulness and ease of use, which together drive positive attitudes and acceptance of this technology in online learning.

Conclusion

This study shows that students in the teacher professional education study program believe that WhatsApp has a positive influence on academic achievement because it supports group discussions, sharing learning resources, and managing educational agendas. This application is considered to increase the effectiveness of online learning through its flexible use that is not limited by time and place, its ability to be integrated with other software, and collaborative features that are relevant to the learning process. In addition, the aspect of data security is also a factor that strengthens students' choice in using WhatsApp as a learning platform. However, several limitations still arise, especially in terms of the lack of educational assessment tools, limitations in permanent data storage, and an unattractive appearance for teaching needs. These findings emphasize that the use of technology in learning needs to be optimized by considering pedagogical aspects and designs that better support the learning experience. The scope of the study, which is limited to one university, shows that the results obtained cannot be fully generalized. Therefore, further research is needed involving more participants from various universities and regions in order to gain broader insights. Further studies can also contribute to designing more effective online learning policies, including maximizing the use of WhatsApp as an educational platform that is balanced with conventional learning methods and paying attention to privacy and ethical aspects in its use.

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