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WhatsApp implementation on pedagogical content courses during COVID-19 pandemic: Students' learning activities and perception

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Abstract

This study attempted: (1) to describe the teaching and learning activities using WhatsApp; and (2) to determine the students' perception of the implementation as a platform of online learning. This research was descriptive qualitative research utilizing observation of one lecturer and survey delivered to 117 students who took pedagogical content courses. The observation was conducted during one academic semester teaching in 2020 by using a journal note and a survey using a questionnaire that contained 20 items. There were four dimensions determined in the questionnaire: ease/relevance, before learning, during learning, and benefits of WhatsApp. Among 117 respondents involved in this study, there were 83 undergraduate students and 34 postgraduate students. The study proved there were nine learning activities done by the students in the main and post-activity phases. Such activities included sending the written summary on the pedagogical content knowledge and link of the video of oral presentation and simulation, discussion through questions and answers, giving additional comments, giving conclusions, and giving feedback. The study also revealed that the perception of the students on WhatsApp utilization was very positive. They strongly agreed that it was comfortable and relevant to use during the COVID-19 pandemic and helped them improve oral and written communication skills. Moreover, they confirmed it increased their critical thinking through discussion activity conducted before and during learning. Thus, it enhanced their understanding of the pedagogical content knowledge materials.

Introduction

Most recently, education has been much affected by the current situation due to the COVID-19 pandemic. This has forced educators to apply alternative strategies in teaching a foreign language. Online platforms have become the best solution. In this case, technology plays an essential role for learning purposes (Siwawetkul & Koraneekij, 2020). Technology has become a daily means to get information, have entertainment, communicate, socialize, and even learn English as a foreign language

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(Richmond et al., 2020). As one application of technology, WhatsApp has been extensively used by Indonesians compared to other applications (Afsyah, 2019). It has greater functionality than SMS to send and receive messages in many formats. It is also easy to use and helps connect people to society and the whole world (Irfan & Dhimmar, 2019). It shares both social and educational advantages such as an enjoyable atmosphere, a better friendship, and collaboration(Barhoumi, 2015).

Several studies on WhatsApp usage have proven positive effects on the instructional process, especially the English teaching and learning process. It was discovered significant in helping the Pre-University students in Kuala Pilah to learn the language better and enhance their proficiency in using English (Mistar & Embi, 2016). It did not substitute educational explanations but was used as a tool to improve speaking skills and keep communication active outside the classroom daily, becoming constant support for language use (Andújar-vaca & Cruz-Martínez, 2017). It provided students with synchronous feedback from the teacher on the one hand and from other group members on the other (Khalaf, 2017). It was proven to motivate students by interacting and using English meaningfully beyond the traditional classroom (Kartal, 2019). It makes students no longer feel afraid of English. They felt confident in themselves, and they were more willing to learn and enjoyed the lesson (Aktaş & Can, 2019). Similarly, the omnipresent aspect of WhatsApp in learning resulted in the students' positive attitude that it was appealing and useful for their education (Budiharto, Mentari, Talullah, & Kinanatul, 2020).

Different from those former studies, the current research was specifically conducted in a teacher training college for teaching pedagogical content courses at tertiary level for undergraduate and postgraduate programs during the COVID-19 pandemic, namely Teaching English as a Foreign Language (TEFL), Micro Teaching, Seminar on Language Teaching and EFL Analysis, Design, and Practices. Thus, the study's purpose was two-fold: (1) to describe the teaching and learning activities using WhatsApp; and (2) to find out the students' perception of the implementation as a platform of online learning.

Literature Review

Technological Pedagogical Content Knowledge (TPACK) and Social Media

TPACK deals with three aspects, namely, technological knowledge, pedagogical knowledge, and content knowledge (Schmid, Brianza, & Petko, 2021). Thus, it can be defined as the knowledge needed by educators to integrate technology in delivering the content of their instruction (Santos & Castro, 2021). Since social media has become a part of human life, the use of social media as a technology to deliver instructional materials is increasing (Vandeyar, 2020). Thus, several studies have been conducted to evaluate the use of social media within instruction (Afsyah, 2019; Hamadi, El-Den, Azam, & Sriratanaviriyakul, 2021; Koçak & Vergiveren, 2019).

The Use of WA as a Teaching Media

WhatsApp is an application that can be used to deliver instant messages to mobile network users with different platforms, and this application is widely used among students to send multimedia messages like photos, videos, audio along with short messages, texts, files, emoticons, locations, voice, and video calls (Cetinkaya, 2017) as found by Brian Acton and Jan Koum in 2009. It has become a very prevalent and well-appreciated application globally with more than 1.5 billion users (George, Preetha, & Pramod, 2018). WhatsApp offers a lot of benefits. It is for leisure, social, academic, work, and informative reasons (Koçak & Vergiveren, 2019). Socially, it can connect people to have interaction among more than a hundred members (Suhail, Sarhandi, Asghar, & Abidi, 2018). Academically, it provides flexible access to learning material, teacher availability, and learning beyond class hours (Onyema, Deborah, Alsayed, Noorulhasan, & Sanober, 2019). Thus, it is a trending and highly beneficial tool for sharing academic knowledge and information (Bruno & Lawyer, 2020). Specifically applied in the EFL context, it is a simple yet successful application to improve English learning (Ahmed, 2019; Getie, 2020).

Methodology

This research was descriptive qualitative research held in 2020 applying observation and survey. The researchers did the observation regularly during the whole academic semester and distributed the survey before the semester ended. The study was conducted in 14 meetings. The study participants were one lecturer and one hundred seventeen students ofthe Ganesha University of Education in Bali Province-Indonesia. Among those 117 participants, there were 83

undergraduate students and 34 postgraduate students of English Language Education. The instruments employed to collect data were journaling notes, interview guides and questionnaires.

The researchers used the journal notes to record the teaching and learning activities in three stages of the teaching and learning process (Pre-Activity, Main Activity, and Post Activity). A semi-structured interview was conducted to find out the reasons for choosing the instructional activities using WA while the questionnaires were distributed to identify students' perceptions toward the implementation of WA. The researchers disseminated the questionnaires, which contained 20 items before closing the semester. There were four dimensions developed in the questionnaire: ease/relevance, before learning, during learning, and benefits of WA (Bensalem, 2018; Barhoumi, 2015).

Data from observation and interviews were analyzed using the qualitative data analysis model (Miles, Huberman, & Saldaña, 2013), which consisted of data collection, data display, data reduction and conclusion (drawing and verifying). The results of the questionnaire were quantified and analyzed using the theory of calculating perception by Koyan (2012), which focused on the way of converting the score into perception category (i.e., very low, low, average, high, and very high) with its qualification (i.e., very negative, negative, neutral, positive, and very positive).

Results

The Teaching and Learning Activities through the Implementation of WA

From the results of the observation, this study found there were 11 activities done by the students and the lecturer during the teaching and learning process (see Table 1). There were two activities in the pre-activity, seven activities in the main activity, and two activities in the post-activity. The following is an explanation of those activities.

Table 1 Teaching and Learning Activities through WA

Instructional Process	Learning Activities	Reason for selecting the activities
Pre-Activity	The lecturer greets and wishes all the students good health.	To check students' readiness to learn.
	The lecturer explains the focus or scope of the lesson.	To make the students focus on the things that they have to study
Main Activity	The students send their summary of the material on pedagogical content knowledge and link of video presentation and simulation done by the group in charge (written and oral tasks).	To check students' works and enable all of the students to see their classmates' works.
	The students discuss through questions and answer based on the content knowledge learned (questions can be either from the lecturer or the students) (written and oral though voice record).	To build and strengthen students' knowledge through peer teaching.
	The group in charge provides the answer first (voice record).	To check students' understanding and to make the students the center of the instruction.
	Other students give additional answers (oral response though voice record).	To activate other students to get involved and build their own understanding.
	The lecturer gives clarifications (written message or oral explanation through voice record).	To ensure all students understand the materials.
	The lecturer gives extra information (written and screenshot).	To enrich students' understanding so that they have comprehensive knowledge as it is instructed in the lesson plan.
	The students give comments on extra material given (written message or oral explanation through voice record).	To activate the students and reconfirm their understanding
Post-Activity	The students give a conclusion of the material they have just learned.	To ensure that the students understand the materials.
	The students give their feedback on what they have learned.	To train students' critical thinking.

Pre-Activity

First, the lecturer opened the class by greeting and wishing all students good health. Then, the lecturer directly explained the scope of the lesson. Those activities were done by using the text message facility. Some students also delivered text messages to respond to the lecturer's greeting.

Main Activity

In the main activity, there were seven activities done mainly by the students, starting with the sending of the group tasks in the form of written and oral assignments. The written tasks were the summary of the material on the pedagogical content knowledge learned and a mini-lesson plan for teaching simulation, while the oral task was in the form of presentation and simulation video. The lecturer asked the students to learn the pedagogical content knowledge concepts, watch the presentation and simulation videosbefore the online classroom meeting. From those materials, the classroom discussion was started by the lecturer through question-and-answer activities. The lecturer always invited the students to beginraising their questions. If there were yet no questions from the students, it was the lecturer who triggered them.

Group 1 had the opportunity to give answers first, and other students could give addition or comment later. Next, the lecturer also clarified the lesson if the students were still confused with the concept. When necessary, the lecturer gave extra information to the students to reconfirm their understanding. She added to it with an oral explanation through a voice record. Later, she invited the students to give comments on the additional material given. In the post-activity, the studentshad to make a conclusion and give feedback on the lesson learned. The summary of the activities can be seen in Table 1.

From the result of the interview, this study found that there are some reasons why the lecturer decided to do those activities and why she selected WA as the media of the instruction. From the interview, the lecturer stated that the activities during the pre-activity were selected to ensure the students were ready to study and know what they were going to study. The lecturer used the seven activities in the main activity to guide the students as active learners and to position herself as a facilitator. The activities on the post-activity were aimed at ensuring the students understood the materials and to train their critical thinking. The reasons why the lecturer used the WA application as the teaching medium were because she believed that all of the students used WA, and that they were familiar with the features of WA (text service, delivering document/file, voice record, and video call). The result of the interview can also be seen in Table 1.

Students Perception on the WA Use

The result of the questionnaire confirmed that both undergraduate and postgraduate students who took pedagogical content courses perceived the utilization of WA very positively in all seven dimensions. The highest score was before learning perceived by postgraduate students (4.88), while it was in terms of ease and relevance by undergraduate students (4.62). Table 2 presents the final score of the students' perception after setting the interval measurement to determine categorization and qualification.

Discussion

Considering the result of the study, the activities that were done by the lecturer and the students during the online instruction can be discussed by using various pedagogical theories. It is clear that the lecturer applied the students centered approach. This can be seen from the activities where the students had to do the assignment independently with their small group. The students had to discuss the other students' assignment, and were also encouraged to conclude things that they had learned from the lesson. Those activities show the concept of students centered approach, that the students are the subjects of learning, while the teacher acts as a facilitator and motivator (Al-Balushi, Ambusaidi, Al-Balushi, Al-Hajri, & Al-Sinani, 2020).

Table 2 EFL students' perception on the WA use

No	Dimensions	Undergraduate Students	Postgraduate Students	Interval	Category	Qualification
1	Ease / Relevance	4.62	4.63	4.00 ≤ 5.00	Very High	Very Positive
2	Before Learning	4.59	4.88	4.00 ≤ 5.00	Very High	Very Positive
3	After Learning	4.47	4.50	4.00 ≤ 5.00	Very High	Very Positive
4	Benefits	4.06	4.08	4.00 ≤ 5.00	Very High	Very Positive

From the teaching methods, the lecturer taught the students using Flipped Learning, Cooperative Learning, and Peer Assisted Learning methods. The flipped learning method can be seen from the way that the lecturer gave an assignment for the students prior to the online meeting. From the finding, it was found that the students had to study independently within their small group. Then, during the online meeting, the students discussed what they had done. This means that the students have to study the materials before class and then apply such during the class (van Alten, Phielix, Janssen, & Kester, 2019).

Cooperative learning can be identified in the activity when the students must complete the assignment in a small group before the students had the online class. In cooperative learning, students must work together to complete the assignment and provide equal contribution in completing the task (Hamadi et al., 2021). From the observation, it was found that the students showed the result of their group work and explained it in a group. The assignment in the form of video and situation during the discussion session also showed that the students worked together with their group. The activity that they did shows that they learn cooperatively, working together in a small group to maximize their own and others' learning (Johnson & Johnson, 2009).

Peer-assisted learning practice can be seen during the discussion session. This method can be simply defined as a type of learning where the students learn from the other students (Guraya & Abdalla, 2020). The finding of the study shows that, during the discussion, the students asked questions and had them answered by the other students. All of the students had the opportunity to get involved and gave their opinions and ideas related to the questions being asked. Through peer-assisted learning, students could empower and strengthen everyone's development (Huang et al., 2018).

Regarding the lecturer's reasons for choosing such activities, it can be stated that the reasons have something to do with the pedagogical theories explained above. The major reason that the lecturer conducted the selected activities was to create student-centered learning. This is because the students are adult learners and adults have the capability to learn independently (Anderson & Meštrović, 2018). The reasons why the lecturer used WA were related to practicality and user-friendliness. These two aspects are important in integrating technology in instruction (Sukendro et al., 2020) because ease of use will influence the students' readiness for using the technology, and students' readiness will affect the success of the technology implementation in the instruction (Muthuprasad, Aiswarya, Aditya, & Jha, 2021; Scherer, Howard, Tondeur, & Siddiq, 2021).

Dealing with the students' perceptions of ease/relevance, most of the students strongly agreed that WA was an easy-to-use application anytime and anywhere, especially in the pandemic situation. According to Cetinkaya (2017), WA was not only comfortable but also fun and useful for learning. The students got positive feelings and intentions regarding its use for formal education. It was practical to enhance learning opportunities in the EFL classroom (Richmond et al., 2020), and it wasalso valuable to increase learning motivation during the pandemic situation (Richmond et al., 2020).

Reflecting on the before learning dimension, this study demonstrated that the students strongly agreed to use WA as a supporting medium for an online discussion and sending-receiving files. According to Cetinkaya (2017) and Güler (2017), it is a cross-platform application which can interact with different devices, texting one another through various media. It causes positive communication between student and lecturer, the discussion runs well, the student's knowledge appears in a group, and the information spreads evenly and quickly (Joicy & Sornam, 2018). During the learning dimension, the students strongly agreed that they could exchange the knowledge and complete the material understanding via WA. Budiharto et al. (2020) stated that EFL learners had a positive attitude in that they could interact appropriately and enjoy more language exposure. It reinforced language learning (Cetinkaya, 2017; Bouhnik & Deshen, 2014) Thus, the frequent use of video and online chatting via WA has significantly affected the students' socio-emotional development and academic achievement (Bruno & Lawyer, 2020).

The students also strongly agreed that WA gave some benefits in the teaching and learning process.It improved their oral and written communication skills, knowledge and critical thinking, and enabled them to collaborate with other students. Specifically, it facilitated students' language learning, improving their communication skills and vocabulary knowledge (Avci & Adiguzel, 2017). It also facilitated online collaboration and cooperation between online students connected from school or home in a blended mobile lecture (Avci & Adiguzel, 2017). During the implementation of WA, the students showed their critical thinking skills through exploring alternative answers and creating new ideas during the online interaction (Witherspoon, Sykes, & Bell, 2016).

Conclusion and Recommendation

WA is a powerful online application. It is not only convenient but also relevant to use during the COVID-19 pandemic. It helps the students improve oral and written communication skills and even critical thinking through discussion. More importantly, it enhances their understanding of the pedagogical content knowledge materials. Besides, it also makes them more motivated to learn and more creative in producing both written and oral projects in a cooperative learning model. Therefore, WA is a beneficial tool for holding a student-centered approach, both before and during learning, to give students more opportunities to construct their knowledge. Due to its various benefits, the researchers suggest that WA could be used as an alternative for educational purposes either synchronously or asynchronously. It is also possible to apply it in tandem with other applications for variations in learning. This study was limited to identifying the activities and the students' perceptions toward the implementation of WA for conducting online learning during the COVID-19 pandemic. Thus, in order to support this study, a further quantitative study to evaluate the effectiveness of the activities and the use of WA needs to be conducted.

Conflict of Interest

There is no conflict of interest.

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