Mobile Instant Messaging for Mobile Learning Activity: Use of WhatsApp Group as a Mobile Learning Platform in Anak Pintar Community

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ABSTRACT

Equipped with various features, WhatsApp is the most popular mobile instant messaging (MIM) used by Indonesian internet users. This platform allows one-to-one and even one-to-many communications. WhatsApp is also potentially used to assist mobile learning activities. Mobile learning is a digital learning activity that uses both mobile devices and internet connectivity to help overcome time and space barriers in the learning process. This study aimed to investigate the use of WhatsApp in mobile learning activities in Komunitas Anak Pintar (KAP, *smart children community*), one of Indonesia's virtual communities. Under qualitative design and constructivist paradigm, this study sought to understand the social meaning created in context, especially on how MIM is used as a mobile learning platform in a virtual community and how learners perceived it. A case study method with in-depth interviews was used as the data collection technique. Results showed that learning through WhatsApp was positively perceived as efficient, flexible, less formal, informative, adjustable, helpful, and accessible. However, it also has limitations such as device and connectivity dependency, problems in learning process and materials, and lower community sense of belonging.

Keywords: Komunitas Anak Pintar, Mobile Instant Messaging, Mobile Learning, Virtual Learning Community, Whatsapp.

1. INTRODUCTION

As the utilization of the internet and mobile phones grows globally, people become increasingly familiar in building interpersonal relationships through the use of electronic devices (Wilson & Oren, 2014), resulting in the rise of mobile application usage. Mobile instant messaging (MIM) is a kind of mobile application that is used primarily for enhancing human communication and interaction, especially in textual conversation form. It is also one of the most extensively used applications worldwide (Briskman, 2019; Tang & Hew, 2017). A worldwide research compared four large messaging applications with four huge social networking applications and revealed that worldwide MIM penetration gradually increased in 5 years and surpassed social networking penetration (Birdsbeep, 2017).

This popularity is built upon several reasons that can be classified into two aspects: technology and human-related

aspects. Technology concerns with the innovation, invention, and the development of information and communication technology. It commonly includes the use of the internet and mobile phones, which are both highly adopted among users, providing available and low-cost internet service, multiple features offered by applications, multiple modes of communication platforms, and the easy financial transaction through e-commerce and peer-to-peer payments. Meanwhile, human-related subjects are indicated by the growing need of people to perform real-time interaction and collaboration, constant need to connect with each other, high adoption of mobile applications among users from various age groups, and the growing interest in joining conversational forums for social networking (Birdsbeep, 2017).

The MIM platform comes in several kinds, such as Telegram, Line, WhatsApp, WeChat, and Viber. Among the many available platforms, WhatsApp is the most widely used and popular MIM application worldwide (Briskman, 2019; Dailysocial, 2017; Hootsuite & Social, 2019) and the world's third most used social platforms after Facebook and YouTube (Hootsuite & Social, 2019). In Indonesia, WhatsApp is the second most used social platform after YouTube and the leading MIM platform with the highest number of active users among Indonesian internet customers (Hootsuite & Social, 2019).

Advantageously, WhatsApp constantly renews their features to meet customers' needs. Today, WhatsApp can cover the need of exchanging personal text, pictures, and videos, group chatting, synchronizing function between mobile devices and personal computers, facilitating voice and

video calls, sending voice message, sharing documents, and securing with end-to-end encryption (WhatsApp, 2019). WhatsApp features are mostly optimized for communication and interaction purposes. However, this platform can activate more potential functions, such as optimizing the WhatsApp group for mobile learning.

The use of WhatsApp for mobile learning activity has already been widely investigated. Learners have a positive perception toward WhatsApp as a mobile learning platform (MI & Meerasa, 2016). This platform reportedly has a significant impact in increasing learners' writing skills (Fattah, 2015). Furthermore, it can potentially enhance authentic learning wherein learners are allowed to learn at their own pace by themselves, perform collaborative learning, reflect the process and materials they encounter, shift multiple roles as both producer and consumer of knowledge sharing materials and process, and learn multiple perspectives (Kola & Sunday, 2018). WhatsApp can also be utilized to support language learning activities in Indonesia (Ayuningtyas, 2018; Linda & Ri'aeni, 2018). Additionally, through WhatsApp, a virtual family support group community, named Yayasan Keluarga Pengasih Indonesia (YKPI), was able to facilitate a one-month mobile learning course on drugs and family issues from psychological and communication perspectives (Marlina, 2017).

Moreover, WhatsApp has the potential to facilitate mobile learning activity. Although several studies have been conducted to prove such potential, most of them either focus solely on learners' perspective (Ayuningtyas, 2018; Fattah,

2015; Linda & Ri'aeni, 2018; MI & Meerasa, 2016) or on single-course perspective (Marlina, 2017). In contrast, the current study focused on both learners' and organizational perspectives to enrich academic literature on the use of MIM for mobile learning in Indonesian context.

This study was conducted on Komunitas Anak Pintar (KAP, *smart children community*), which is a community concentrating on child and parenting issues in Indonesia. This research aimed to understand the way this community utilizes WhatsApp for mobile learning and the way learners/members perceived their learning experience. This intention is reflected through the following two research questions:

1. How does KAP utilize the WhatsApp group as a mobile learning platform?

2. How do learners interpret their mobile learning activity in that platform?

Practically, the result of this study may serve as an input for evaluating KAP's mobile learning activity and a reference in initiating more digital learning communities that utilize MIM as their mobile learning platform.

1.1. Mobile Instant Messaging

MIM is the next-generation short message service in the field of textual communication (Tang & Hew, 2017). It is a type of computer-mediated communication that allows users to exchange digitally based information in real time through the internet. This kind of mobile application consists of various platforms, such as WeChat, Line, and WhatsApp. Despite the differences among these platforms, all of them share several common features as follows: providing easy access via mobile phones, using the internet as its data transmission mechanism, facilitating one-to-one and one-to-many communication (Church & de Oliveira, 2013), and allowing read-and-reply messaging and optional actions such as add, delete, or block a contact (Caro-Alvaro et al., 2015).

Nowadays, MIM is popular among users as their primary communication means. Young people tend to shift and extend face-to-face communication into multimodal interaction and communication through smartphones (Schwarz, 2011). After many decades have passed and with the advancement of technology, they still rely on text messaging on a daily basis (Church & de Oliveira, 2013), suggesting as one of the reasons on how MIM applications, such WhatsApp, can still be accepted worldwide (Tang & Hew, 2017).

WhatsApp is a cross-platform messaging application that was first initiated in 2009 (Wilson & Oren, 2014). After a decade, it is now the global market leader of MIM (Briskman, 2019; Hootsuite & Social, 2019). Customers enjoy its simple, fun, and free-to-download cross-platform usage, as well as its synchronized function, accessible communication service, built-in camera, real-time connection, immediate sharing function, group conversation, and rich media features such as text, photos, video, emoticon, document, and even location that can be shared not only to personal contact but also within a group (Tang & Hew, 2017). It is also a low-cost alternative to older texting media (Wilson & Oren, 2014). For activation, users need to be connected to the internet and install

the WhatsApp application in their devices (Church & de Oliveira, 2013).

As a MIM variant, WhatsApp differs from social networks. Both are recognized as platforms that bridge the need of people to communicate, connect, and share, but their main difference lies in the audience size, duration, and intent (Wilson & Oren, 2014). Social networks can offer many-to-many communication, with a durable post, and can produce certain network effects, and the content is intended to be delivered to the public. Conversely, WhatsApp and other MIM platforms primarily function by bridging one-to-one or one-to-few communication mechanism. Users can choose whether to prolong or to make a post temporary, with the content specifically directed toward a certain person or a specific group (Wilson & Oren, 2014). This main function and differentiation of WhatsApp has been expanded along with technology development. Today, a MIM platform such as WhatsApp can even be used as a medium for learning in virtual environment (Ayuningtyas, 2018; Fattah, 2015; Kola & Sunday, 2018; Marlina, 2017; MI & Meerasa, 2016), which is widely known as mobile learning.

1.2. Mobile Learning

Mobile learning is any kind of learning extension that operates by optimizing mobile devices as its primary means to facilitate the process of learning (Traxler, 2005). Several devices, such as personal digital assistant, handheld computer, iPod, digital camera, pocket computer, and mobile wireless phone can be utilized (Bansal & Joshi, 2014; Traxler, 2005).

Mobile learning activity becomes essential to people's digital experience

because of the following reasons: continuous and easy access for learning (Yurdagül & Öz, 2018); timely approach (Uther, 2019); flexible and long-life learning environment, personalization, and interdisciplinary learning (Alsadoon, 2018); collaborative, productive, and investigative learning (Laurillard, 2007); and opportunity for learning across time, location, and culture (Kukulska-Hulme, 2010; Sarrab, 2012).

One of the common reasons people start joining this activity is its ability to expand the access to learning (Yi et al., 2009), especially in improving the learning outcomes and increasing the interaction between learners and between learners and instructors (Mohammadi et al., 2017), and the access to learning materials (Huang, Chen, & Chen, 2009). Mobile learning has five elements, namely, learners, instructors, learning materials, learning environment, and learning assessments (Ozdamli & Cavus, 2011). Theoretically, this study assumed that WhatsApp can be optimized as a mobile learning environment. This research aimed to elucidate the implementation of five mobile learning elements in WhatsApp, concentrating on the case of online sharing session held weekly by KAP.

2. METHODS

Under constructivist paradigm and qualitative approach, this study explored the uniqueness of experience and meaning (Creswell & Cresswel, 2018), further analyzed the social phenomenon (Denzin & Lincoln, 2018), and constructed social reality (Neuman, 2011). In this study, the social phenomenon refers to the use of MIM as a mobile learning platform in KAP. Applying a single-case study

strategy, this study examined how this community, as the study subject, runs their WhatsApp online sharing session as a platform for mobile learning activity, as well as how the group members perceive this activity.

Data were collected from five informants by conducting an in-depth interview (Healey-Etten & Sharp, 2010). Selected by purposive sampling technique, these five informants were as follows: KAP founder, curriculum maker of their WhatsApp sharing session program, instructor of the sharing session, and two learners in that program. Data were analyzed with narrative inquiry (Savin-Baden & Van Niekerk, 2007) that optimized informants' answers as the main data to be proceeded and researched. A narrative inquiry allows the researcher to understand the chosen case from the subjects' point of view and helps uncover the specific meaning they put on their everyday experience.

3. RESULTS

This section focuses on the answers to the two abovementioned research questions. For clarity, this section is divided into themes. The first theme is the introduction to the community, the second one describes how the community utilized MIM in their mobile learning activity, and the third one concentrates on how the members' perceived their learning experience and put a meaning on it.

3.1. Community Profile

Anak Pintar Community was initiated in 2016 by four founders, namely, Putri Zainur Hayati (Putri), Chairunnisa Rizkiah (Kiki), Anne Ivanna Syafhan (Anne), and Sherly Meidya Ova (Sherly). It was developed for two main reasons. First, it aims to provide alternative refreshing activities for children because founders think that children nowadays have limited activities. For instance, they want to create more educative recreational activities, such as going to outdoor places, cooking class, science fair, and film screening rather than allowing children to merely go to malls. Second, it aims to educate the parents on three main topics: educational psychology, health, and finance. These topics are considered as daily problems face by the families in this community. "*If we want to address the kids, we cannot leave their parents out,*" said Putri, leader of Anak Pintar Community.

To deliver these two purposes, they created two main activities. First, offline activities are dedicated mostly for children. KAP invites children to attend both indoor and outdoor activities, such as cooking class, film screening, soft-skill development forum, and going to the beach, museums, or open places including Kebun Raya Bogor (Bogor Botanical Gardens). Second, online activity was initiated to communicate with and to educate the parents. They used some online channels, such as Instagram, Facebook, YouTube, and WhatsApp. However, among these channels, WhatsApp is their main media used for educational purposes. The current study aims to explore more about the community's online activity, specifically the WhatsApp online sharing session.

3.2. Online Sharing Session: Optimizing WhatsApp Group for Mobile Learning

KAP's online sharing session was introduced shortly after the community

began to develop. According to Putri, inviting kids without asking their parents' permission is unethical. Thus, this WhatsApp group was first built for socialization in relation to offline activities. Before long, founders began to notice several problems, especially about parenting style. "*Some parents are too pushy to their kids, some others are too permissive..., they also need more information for something we, with educational background in psychology, think as common knowledge, like children's talent and interest, parenting style, and problems in raising kids,*" said Putri.

Addressing these problems was extremely basic; thus, they were able to turn their use of the WhatsApp group in 2016 into more educational rather than for communication only. Subsequently, educating the parents began to be the community's priority apart from providing alternative activities for children ever since. "Online sharing session" has become the term they used to name their mobile learning activity.

KAP's online sharing session is a virtual meeting among members, regularly held every Wednesday or Friday once or twice a month. This group has more than 200 members. They come from different cities, such as Bandung, Makassar, Jakarta, Bengkulu, Depok, Bogor, and Bangka. Some of them currently live in different countries, including Nigeria, South Korea, and France. Before listed as members, they needed to register by answering personal data in KAP's databases and following the community rules. If a member crosses one rule, he/she is granted a maximum toleration for three times before the group administrator disables his/her member

account. Some of the rules are as follows: operational hours are between 5 AM and 10 PM; commercial advertisement can be shared only in Monday; and any discussion content should be related to family matters. Furthermore, members are allowed to share their opinions, problems, and knowledge through daily discussions that happen organically, even beyond the online sharing session. In daily discussions, many topics, such as socioeconomic, popular issues in media, or political phenomenon affecting family life, can be talked about.

The applicability of WhatsApp as a mobile learning platform cannot be separated from the features it has. Innovation in communication technology has equipped social media, including MIM applications (Jong, Lai, Hsia, Lin, & Liao, 2014), with certain features that meet the requirements of mobile learning activity. Similar to some other e-learning activities (Harriman, 2010), mobile learning requires some supporting features, such as synchronous and asynchronous communication options, tagging, uploading, creating and managing groups, and knowledge sharing and management (Baker, Bricout, Moon, Coughlan, & Pater, 2013; Lee, Yen, & Hsiao, 2014). These features enable the users to form interaction, which acts as the foundation of experience (Riveros, 2017) and knowledge creation (Schramm, 1955).

In KAP's online sharing session, interaction flows fluidly through discussion between the speaker and the members. A guest speaker with special background or experience in line with the session's topic is always available for every session. This speaker acts as their mobile learning instructor, whereas the

members act as the learners. The speaker can be one of the members or an outsider that joins the group only for one session. This person is given 20–30 minutes to discuss the presented topic and is free to choose the media where he/she wants to pass on the learning materials. The media may be PowerPoint presentations, voice notes, written notes, or directly written notes in WhatsApp chat. This wide range of options is supported by the rich features of WhatsApp, as mentioned by Tang & Hew (2017), making the learning process easier, simple, and flexible.

Thereafter, members are allowed to ask some questions. The whole session takes approximately 2 hours, from 8 PM to 10 PM. All activities within this group are free of charge for the members and the speaker as well. Voluntariness and community spirit are the values this community hold tight.

The topics in each session are planned according to the daily observation of everyday family problems or members' suggestions. Learning through the WhatsApp group offers a more personalized learning experience. Members can choose whether they want to participate in the discussion synchronically or not. Those who cannot join the discussion may scroll up all materials and conversations stored as a digital trace of the group. They can access it whenever and wherever they want.

The WhatsApp group in this case has been utilized as a mobile learning environment by the community. The community chose WhatsApp as their mobile learning environment for two main reasons: familiarity and interactivity. As mentioned previously, WhatsApp is the most popular instant messaging platform in Indonesia (Hootsuite & Social, 2019). People, especially this virtual community, are more familiar and comfortable to WhatsApp than any other messaging applications. Most of them have this application in their smartphones. "*There was one time we tried to introduce Selasar* (another kind of learning platform)*, but it is not easy for people to transfer from one into another platform*," Putri explained.

WhatsApp was also perceived as a suitable platform for mobile learning because it facilitates people to develop a two-way interaction. In this platform, when a member shares something, the others can reply or give comments, both synchronously and asynchronously. Conversations flow naturally, and members can talk informally similar to when they hang out with each other in reality. "*In this community, not everyone knows each other. Yet, along the time we spend online, people get to know even without face-to-face meeting. Just, 'yeah I know that person,' or something like that*," Putri added.

In our interview session, Putri further explained, *"It is easier to communicate online. Although emotional attachment is less than offline, it is still possible to be developed. Let say, in offline, we spend about a month or two to get close [with] each other; in WhatsApp, it could take a year to build the sense of community, our sense of belonging."* Social interaction in digital learning is indeed predicted to be deeper, wider, and linear with the time spent in knowledge transfer and learning process (Johnson et al., 2008).

3.3. Members' Perspective toward the Use of WhatsApp Group as a Mobile Learning Platform

To acquire a deeper understanding, this study also conducted an in-depth interview with three members of the community, namely, WD, MR, and LT. These members, who are among the first members of this community, actively participate in online sharing sessions and daily discussions as needed. They frequently join the discussion and access learning materials by using smartphones. They continue to use the WhatApp group for the following two main reasons: for communication among members, especially with regard to children's offline activities, and for information purposes such as learning and sharing about family life, parenting, children development, financial issues, health, psychology, and up-to-date issues related to family and children.

One of them, MR, was asked to be the speaker for two different sessions, namely, dyslexia and dysgraphia, which are learning impairments among children. When being asked to be a speaker, MR thought that this is a chance to give back to the community. "*Basically, I love to share knowledge, so long as I have the capacity on it. The more people know about learning impairments, the better it will be. This is also part of my professional responsibility, to conduct psychoeducation to society.*" In her session, she used PowerPoint presentation and shared it in portable document format (PDF). "*I think they* (audiences) *are enthusiast, judging by the presence number and the questions they asked… The problem is, I don't know whether they read the materials I sent or not, or whether they understand it or not. I*

only hope this help them to be more informed," she added.

During the interview, the members acknowledge that learning through WhatsApp has advantages as well as disadvantages. For MR, sharing through WhatsApp is more relaxing. She can wear any comfortable clothes and talk less formally to the audience. She feels like talking to friends with minimal effort and less emotionally burdened. WD also thinks that learning through WhatsApp is comfortable. According to her, mobile learning through WhatsApp not only is efficient in time, place, and accommodation but also enables her to access the learning materials anytime, anywhere, and anyhow, "*Even when I was using pajama at home,*" said WD. "*When we don't have enough time to join the whole discussion, we can reread it in the morning. They* [KAP] *also provide us with resume so we can reflect the materials better,*" she added.

LT, who is a lecturer in Sociology, compared this activity with the conventional classroom teaching. "*It feels like learning in the class or in seminar. Somebody presents materials, somebody moderates discussion and applying the discussion rules, and there is also Q and A session after presentation.*" She admitted that she only joins the sessions as needed, depending on how relatable the topics to her everyday problems, the time she has, and/or current trending issues. When she has limited time, she prefers to scroll up the chat in the morning rather than following the session intermittently. She only does that for the topics she prefers; those that do not capture her interest will not be scrolled up.

These three members have positive perception toward the use of the WhatsApp group for mobile learning activity. MR, for example, thinks that nowadays, technology will be increasingly dependable and expansive. "*The trend shows [that] more people will use WhatsApp for sharing, paid or unpaid. We can also use this to enhance community building. Community members from different background can share their expertise...more people want to share without thinking about how much they'll get paid.*"

This mechanism was also perceived as helpful and informative, as agreed by WD, because of its ability to provide access for those who live in distant locations with limited access to excellent learning instructors. LT thinks that learning through WhatsApp helps her gain more information about children development issues and parenting and family issues, gives her access to materials anytime, and enhances her references about some trending issues. Meanwhile, MR says that this approach is a fun way to learn new information. She added that considering that she feels being helped, she then wants to give back by contributing her knowledge, too. Not only commenting about learning mechanism, WD also sees this virtual community as a support system. "*Here, people with similar interest or problems can gather and teach each other. When I listen to someone else's problems, I learn to be more grateful that I'm not alone facing difficult situations,*" she explained.

Although having numerous advantages, this learning mechanism undeniably has its own limitation. Mobile learning through WhatsApp may be a good learning alternative, but it can never fully replace face-to-face interaction. WhatsApp learning has at least three known limitations. First is the problem of infrastructure in which online meeting relies on the availability and quality of mobile phones and internet connections.

Second is related to learning and content limitations, such as time constraint, focus distraction, depth of topics, and interaction delay. When reflecting back to when she was asked to be a speaker, MR highlighted that an online sharing session is limited to 2 hours only. Many questions are left unanswered in that given time. She also mentioned that the problem of focus distraction is one of the greatest challenges in learning through WhatsApp. As a speaker, she was unsure whether or not her audience was able to read and understand her presentation. Confirming this, LT stated that the e-learning materials are harder to understand than those provided by face-to-face learning mechanism. Thus, for LT, WhatsApp should not be treated as the only source of information. A learner should be proactive in learning by combining multiple methods and sources to enhance their knowledge. In addition, both LT and WD commented on the limitation of written language. "*Indonesians are still low in literacy. Not everyone can convey a clear message that can easily be understood by others,*" said WD. Therefore, LT said, "*We need to be careful in formulating a statement.*"

The third limitation is related to social interaction being less intensive than face-to-face interactions. Informants agreed that learning through WhatsApp can provide informative contents, but a deeper understanding can only be reached by

independently searching on the internet or attending offline seminars, workshops, or demonstrations.

A virtual learning community also struggles in building and maintaining members' sense of belonging. As a member, WD realized this and mentioned, "*We need offline meeting to build [a] deeper sense of belonging. The problem is, we live in different cities ...*" During discussion, not every member pays attention, gives responses, leaves comments, or shares their experiences. In mobile learning, LT added that people can hardly participate 100% in the entire discussion session. "*People are not always connected to the group. Sometimes, they focus are skipped, so they missed some important points... People also have different interest and time allocation. I, for example, will only join if the topic suits my needs, time, and preference.*"

4. DISCUSSION and CONCLUSION

These findings fulfilled most of the mobile learning's major elements, namely, the existence of learners, instructor(s), materials, environment, and assessment (Ozdamli & Cavus, 2011). In KAP's online sharing session, speaker acts as the instructor, while the members of the WhatsApp group become the learners. The WhatsApp group itself is optimized as a learning environment where learning materials can be delivered in many forms, such as notes, voice notes, presentation, documents, and videos.

In the studied community, no specific learning assessments were provided because their mobile learning is limited only to enhance family knowledge rather than to develop certain skills. Although this last finding does not fit the mobile

learning elements as proposed by Ozdamli & Cavus (2011), KAP's online sharing session can still be categorized as an informal type of mobile learning activity. Informal type of learning does not require a specific learning design (Yilmaz, 2012), including assessment mechanism, and can be facilitated through instant messaging as an example of social media (Jong, Lai, Hsia, Lin, & Liao, 2014). This type of learning is generally applied by virtual learning community, such as KAP.

Consistent with previous studies, the current study revealed learners' positive acceptance and perceptions toward WhatsApp learning (MI & Meerasa, 2016). The findings also confirmed that WhatsApp can be an alternative learning tool, has a good impact toward learners (Fattah, 2015), allows prosumer interaction wherein a member can sometimes be a learner, instructor, or discussion contributor (Kola & Sunday, 2018), and can be used to facilitate community learning (Marlina, 2017).

Furthermore, results showed that applying community rules is a good strategy to manage the information flow and social convenience. In this study context, WhatsApp learning is positively perceived as informative, helpful, flexible, efficient, accessible, less formal, relaxing, and archivable. It can also resolve the limitations of geographical location, time, money, and accommodation constraints, which are frequently observed in face-to-face learning mechanism. However, regarding community building, this virtual interaction takes a longer time to know more about the other members of the community and build a sense of belonging. In addition, members usually participate on the topics they prefer, paying less

attention to those less related to the problem they face. Nevertheless, WhatsApp learning enables them to learn both socially and independently in a more personalized learning style in which they can adjust the learning process according to their needs and preferences.

In this study, the disadvantages of WhatsApp learning, as mentioned by informants, are divided into three: related to infrastructure (availability and quality of device and internet connection), related to learning process and materials (depth of the topics, literacy problem, focus distraction, interaction delay, and time constraints), and related to social interaction (sense of belonging being less developed than that in face-to-face interaction).

In conclusion, this study revealed that WhatsApp as one of the MIM platforms can facilitate mobile learning activity. Online sharing session in KAP brings positive impact and benefits to their members. Although it offers many advantages, WhatsApp also possesses several disadvantages. Overall, WhatsApp mobile learning can be a learning alternative but cannot fully replace the role of face-to-face learning and interaction.

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