

Utilization of whatsapp application as discussion media in blended learning

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ABSTRACT

The purpose of this study is to discuss about utilization of Whatsapp application as discussion media in Blended Learning. This study sought to integrate learning technologies to improve the quality of student's learning. Messenger application is used to communicate synchronously, so it can be positioned as a discussion media. This study focused on Whatsapp capabilities can be utilized to conduct in online learning of Blended Learning. This study aims to describe the discussion media. This study through the literature review that outlines the stages of Blended Learning using Whatsapp application as a discussion media by using qualitative methods. The result shows that Whatsapp application utilization as a discussion media in Blended Learning sessions initiated by offline using conventional methods, so the online session focused on the discussion as indicated by dialogue and interaction among participants.

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1. INTRODUCTION

Technological developments recently are social media applications, where the application of social media can bring rapid communication with the challenges of current information. The development of social media application has exceeded the expectations of the internet as a link in early 2000. Internet-connected smartphone increasingly permits users to access social network sites also to use social media applications [1]. With the development of Internet-connected smartphone, social media applications become more grown exponentially, especially students that always carry a smartphone where connected to the internet with social media applications.

Educational challenge nowadays is to meet the demands of information technology speeds as the culture of the younger generation. Students as young people always carry a smartphone as a means of communication and information anywhere. They are so accustomed to the convenience of online environments, especially social media applications. Social media is a 21st-century term used to broadly define a variety of networked tools or technologies that emphasize the social aspects of the Internet as a channel for communication, collaboration, and creative expression [2, 3]. It is also a challenge for educators to be able to distribute these habits in order not to be a bad habit. Educators are challenged to change the habit so it can be used in learning. It is certainly not without the need for students to learn to use social media applications.

The nature of social media is to provide added value as a result of the evolution of the Internet. Characteristics of social media are participation, openness, conversation, community and connectivity [4].

- a. *Participation*: social media evocative contributions and feedback from any interested members so as to obscure the media with the user.
- b. *Openness*: many social services are open to feedback from members. Openness in feedback members is very involved in providing comments, responses, and sharing of information. Rarely news on social media that are closed so not much to protect the information provided by its members.
- c. *Conversation*: conversations on traditional media to broadcast a one-way manner, in contrast to the same social media that also broadcast but can be done on a reciprocal basis between the first broadcasters to the broadcaster next.
- d. *Community*: the presence of social media, the many owners who freed members to create a community based on common interests, hobbies etc.
- e. *Connectivity*: most types of social media thrive on their connectivity, utilizing links to other sites, resources, and people.

Social media developments are so rapid variations affect the development of learning. One form of learning variation is to implement an electronic-based learning, or better known as e-learning. E-learning should have linkages between educators and learners. The effectiveness and efficiency of learning can be as good as infrastructure or facilities to support the innovation of conventional learning. E-learning can bridge the social media application that is online with offline learning is Blended Learning. Online learning in Blended Learning efforts to integrate learning technologies so as to improve the quality of student learning [5]. Applications that are widely used is the messenger application that is used to communicate synchronously, with the advantages of social media applications, especially the messenger believed to be used as a medium of learning that can improve the quality of learning to be positioned as a discussion media.

One of the social media applications on a smartphone is Whatsapp. Excess Whatsapp is a communication tool that also serves as a news anchor. Whatsapp messenger application is an application that can send text, pictures and even sounds so appropriate to be used as a discussion tool. Anecdotal evidence and initial research suggest that Whatsapp may be a promising tool to support communication and collaboration in and outside the classroom, facilitating the crossing of physical and virtual boundaries through its mobility and immediacy [6-8]. There is much positive influence was mentioned regarding technical, educational, and instructional issues [9]. One of the learnings that need collaborative was subjects Topology majoring in Mathematics Education. Subject topology has a distinctive character, namely the use of logic and analyzes in depth in each chapter so it is important to optimize the logic and analytical ability in full is essential in order to master the course of this topology. Logic and analytical ability can be observed clearly in the method of discussion, to record a good discussion are to use the media to record the conversation Whatsapp on learning Blended Learning.

The use of a smartphone in learning is a solution for the disruption faced by the people of the digital age, which uses a smartphone as mere entertainment (play equipment) so that learning in the classroom to be disrupted [10]. Utilizing the features of a smartphone, namely SMS (text messaging) as well as other features such as messenger-like Whatsapp, BlackBerry Messenger (BBM) can be used in learning [11, 12]. Thus innovation in the use Whatsapp application is required in the development of learning.

The pedagogical framework for the development of learning using discussion method derived from the theories of collaborative learning. The theory of collaborative learning in particular socio-cultural approach (Vygotsky learning theory) and social-constructivist (Piaget learning theory) influence on learning [13]. The second approach to socio-cultural and socio-constructivist learners emphasize collaborative work with their peers and participate actively.

The socio-cultural theory emphasizes the role of psychological tools, such as language, concepts, theories, and other use of the software as part of learning. While social-constructivist theory emphasizes the individual's knowledge structure that directs a person's consciousness. An important part of the learning can be described as a situation where the structure prior knowledge insufficient or contradictory to the new situation.

In this situation, the structure of knowledge requires updating, seeking new knowledge or explanation to assimilate or accommodate the structure of knowledge to respond and work in the new situation. Discussion method of learning based on the theory of collaborative learning can be done by models of conversation that dialogue/interaction [13]. This type of interaction is (1) the negotiations are close to collaborating in Vygotsky's theory in which the indicator is the involvement in the completion of tasks, (2) the argument used resolve back problems.

Application Whatsapp for Discussion Media, From the standpoint of socio-constructivist approach and socio-cultural, mobile technology and especially social software provide an interesting possibility to develop teaching and learning towards a more collaborative. Social software supports conversational interaction and social networking as well as social feedback[14]. Social apps as software that allows the social construction of meaning and new ways of collaboration[15].

Discussion methods emphasize participation and create materials that support raising and sharing of unique knowledge structure of students and knowledge gaps. In addition, it provides the environment and tools to trigger cognitive conflict by supporting the exchange of ideas and interpretations of the student. Similarly, Whatsapp as social media allows students to actively participate and communicate. Whatsapp can be used as an online learning to support learning face to face, the use Whatsapp so that it will create an environment that provides the discussion media of students outside the classroom. Whatsapp allows the creation of closed groups, providing safe environments, where academic discussions, as well as social dialogue, can take place with the lecturer as participant and facilitator/moderator of safety [16, 17].

Blended Learning using Whatsapp Application, Blended Learning is learning that combines direct instruction (face to face) or offline and learning sessions using Whatsapp or an online session. The purpose of the mixing sessions learning offline and online sessions are to support the unique interpretation of a group of students and use it as a learning resource that is more variation in the discussion. In this study, done offline learning session while in class or during the learning progress and online sessions when students and faculty using Whatsapp application outside the classroom. Whatsapp application is used as a medium to know the unique interpretation of student groups that are used in the discussion. Furthermore, the study will explore the role of the messenger as a medium of discussion and Blended Learning is done by combining offline learning session and online sessions both in class and with the application of Whatsapp.

Whatsapp as social media provides an opportunity to build a collaborative learning environment, where smartphone provides flexibility in the study is required. Connecting to-face teaching and learning with ICT refers to Blended Learning, which is a different way to blend-face teaching and online tools are different. A simple model of Blended Learning is the "integration-face classroom experience with online learning experiences" aimed at taking advantages of face-to-face situations and asynchronous text-based [5]. This causes the face to face lectures with additional materials and online learning task, using different learning management systems such as Moodle. There are more powerful way to capitalize on the idea of blended learning with face-to-face with online linking either simultaneously or not [18, 19].

Typically, students are quite familiar with social media software. Thus, from the standpoint of blended learning, social media software provides an opportunity to support collaborative learning [20]. Whatsapp as social media software can be accessed and used online with ease, so the online sessions not only provide additional material or a separate task but to add something new, namely the discussions in learning more quality-face situation. The student group will generate interpretations and ideas that are unique and find its own way of learning. With the use Whatsapp, researchers will know better than the unique ideas of students and use it for subsequent learning and further discussion.

2. RESEARCH METHOD

This study through the literature review that outlines the stages of Blended Learning using Whatsapp application as a discussion media. Whatsapp application usage is intended to support face to face sessions by taking advantage of participation in the discussions in small groups. Students discuss the study in the online sessions so that students in the group, did comment, justification, and advice so that they learn better quality.

The next stage is the analytic framework that analyzes Learning Blended Learning framework by focusing on discussions that took place in the group by using qualitative methods. Later stage of data collection by collecting records of discussion serve as evidence the recording process of improving their learning process as well as interviews with four students after the lecture. Interviews were recorded and analyzed to capture 'experience of discussions and lectures to emphasize the experience and ideas of students. The purpose of this analysis is to describe the types of records generated by the discussions in the group of students. Figure 1 shows the process research.

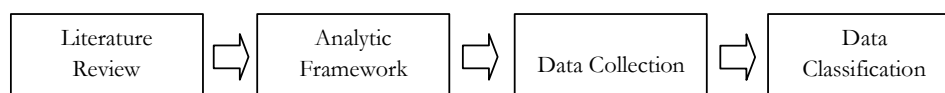


Figure 1. Process research

3. RESULTS AND DISCUSSION

In the early stages, namely literature review, the researcher outlines Blended Learning using Whatsapp application as a discussion media. The results of this phase are to formulate a tangible unit *Satuan*

Acara Perkuliahan (SAP) (course unit). Based on the syllabus of lectures Topology, taken four meetings were used in this study, namely 2 meeting them offline (face-to-face in class) and two meetings online (using Whatsapp application as a discussion media). The details of the meeting are described in the Table 1 below.

Table 1. Details of meeting

Meeting	Material	Activity	Explanation
1	Teori Himpunan	Lecture, Discussion process	Offline
2	Pengantar Topologi	Lecture, Discussion process	Offline
3	Ruang Topologi	Discussion	Online
4	Ruang Topologi	Discussion	Online

Based on the details in the Table 1 can be explained that at the meeting of 1 and 2 are used for the process of knowledge transfer as usual in the lecture using lecture and question and answer. By using Whatsapp application to appear participation in the discussions at the meeting of 3 and 4 is done online where students discuss course material in an online session with a comment, justification, and support.

The next phase is the analytic framework that analyzes Learning Blended Learning framework by focusing on discussions that took place in the group. To spark discussion, we need a series of process of challenging material for students in the process of discussion such as the provision of material with quotes and asking questions. So that the design of the material prepared by using a sequence of the summary outline with examples and exercises. With the circuit is expected to appear in the lecture-discussion process. One example of the presentation shown in Figure 2, Figure 3, Figure 4 and Figure 5.



Figure 2. Introduction

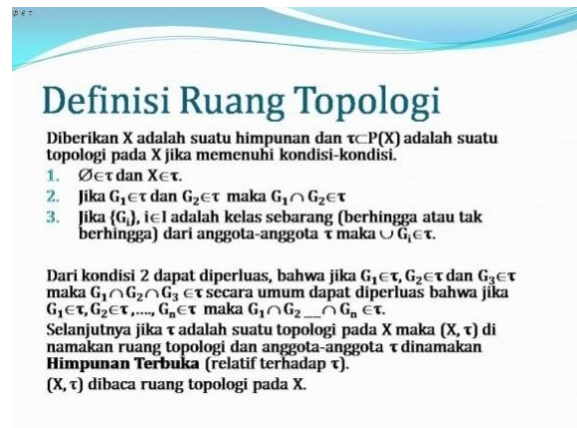


Figure 3. Subject matter

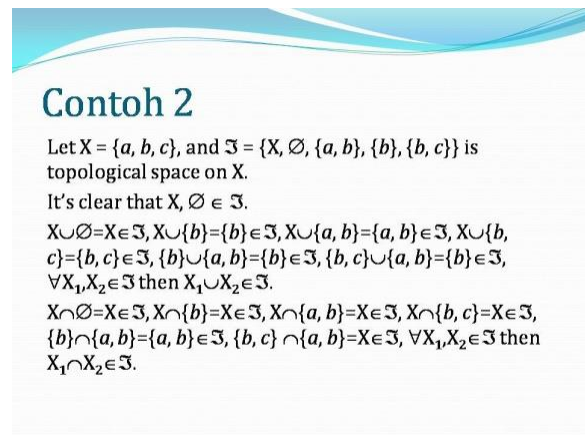
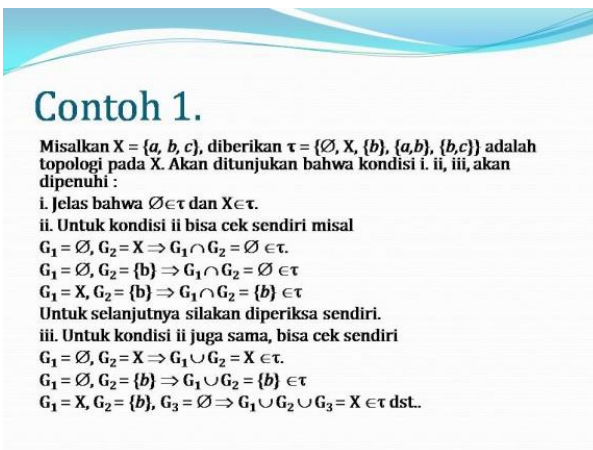


Figure 4. Example an example

Diskusikan!

- Misalkan $X = \{a, b, c\}$, diberikan $\tau = \{\emptyset, X, \{a\}, \{b\}, \{a,b\}\}$ periksa apakah τ adalah topologi pada X .
- Misalkan $X = \{a, b, c\}$, diberikan $\tau = \{\emptyset, X, \{a\}, \{b\}, \{c\}, \{a,b,c\}\}$ periksa apakah τ adalah topologi pada X .

Setelah mendiskusikan 2 tugas di atas, setiap peserta diharapkan mengajukan satu Ruang Topologi, kemudian silahkan didiskusikan Ruang Topologi yang paling mudah.

Diskusikan Lagi!

- Misal $\tau = \{\emptyset, X, \{a\}, \{a,b\}\}$ jika digambar dengan diagram Venn maka seperti berikut.
- Apakah termasuk Ruang Topologi pada X ?
- Diskusikan Diagram Venn berikut apakah termasuk Ruang Topologi?

A.

B.

C.

Figure 5. Filing for discussion

Stage of data collection by collecting records of discussion serve as evidence the recording process of improving their learning process as well as interviews with four students after the lecture. Interviews were recorded and analyzed to capture 'experience of discussions and lectures to emphasize the experience and ideas of students. The purpose of this analysis is to describe the types of records generated by the discussions in the group of students.

Stage classification of data is that the data from the records of discussion and questionnaire instruments were then analyzed to obtain the conclusion of the study. Collaborative Learning theory states that the socio-cultural approach and socio-constructivist learning is very interesting because it is done jointly. This collaboration according to the characteristics of social media such as participation, openness, conversation, community and connectivity [4, 21]. Based on research data can be argued that learning with discussion methods via Whatsapp application runs as follows.

- a. *Participation*: Whatsapp application usage evocative contribution and feedback of every participant is interested, as the recording following discussion.
- b. *Openness*: from recording images look every student commented to each other on the idea of other students, as well as feedback to a statement from the lecturer. So this is an indication that the disclosure of information in online than when meeting offline.
- c. *Conversation*: Whatsapp recorded the conversations on reciprocity among the participants. The indication is each participant has an equal opportunity to provide feedback so that there is a conversation between each participant.
- d. *Community*: with the reciprocal of each participant, each participant is possible to directly interact in private conversations with forming a community. Such a student feels that feedback from participants better understood, they will have a conversation in person to resolve the problem.
- e. *Connectivity*: Whatsapp can develop learning resources to include links to other resources, it indicates the source of connectivity each participant that can be shared with other participants.

3.1. Steps whatsapp application as a discussion media

As the smartphone application is necessary to do to prepare for the application of Blended Learning utilizing Whatsapp application can be carried out smoothly. In general, the design of the Blended Learning is offline divide the two sessions (face to face) and online (discussion using Whatsapp application). In the offline session, the learning process using the conventional method of expository accompanied by questions and answers, while the online session is given a problem that requires settlement so it is possible for an interaction among participants.

The design of the online session is the focus of this study, so the researchers designed in such a material that can foster the curiosity of participants so that the material is expected to have discussions with participants interacting with the other participants. The steps to take advantage of the Blended Learning Whatsapp application in the following manner.

- a. Prepare the material to form a slide which is realized with the image file. The material was created using a presentation application is then stored as an image file.
- b. Ensure each participant already has a Whatsapp application and have the contact number of each participant.
- c. Create a group in Whatsapp application by entering all the contact numbers of participants.

The process of learning in Blended Learning in an online session as shown in Figure 6 and Figure 7 below.

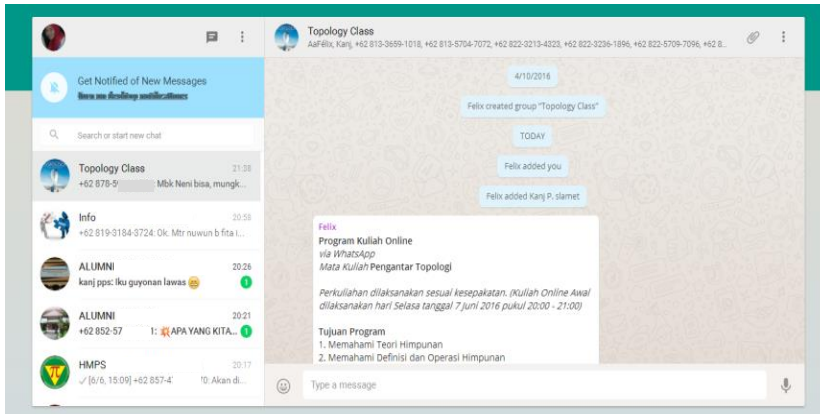


Figure 6. Whatsapp application in laptop

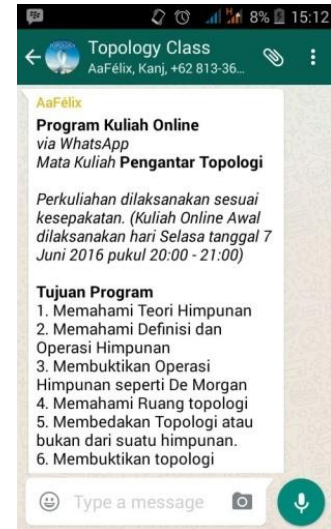


Figure 7. Display whatsapp application in smartphone

Each participant using a smartphone to use Whatsapp application, but researchers are using smartphone and laptops to anticipated so that learning can run smoothly. The ease in controlling the learning happens when researchers want to write the material, which reduces typing errors in the material. So the use of the laptop can help researchers to be able to accurately and quickly control the online session.

In addition to the ease in responding to and controlling the session online learning, the use of laptops in the study used to record ongoing learning activities. In the online session, the learning process is focused on the interaction of each participant to see action in the form of a dialogue or discussion that occurred. Discussion and dialogue are shown in Figure 8.

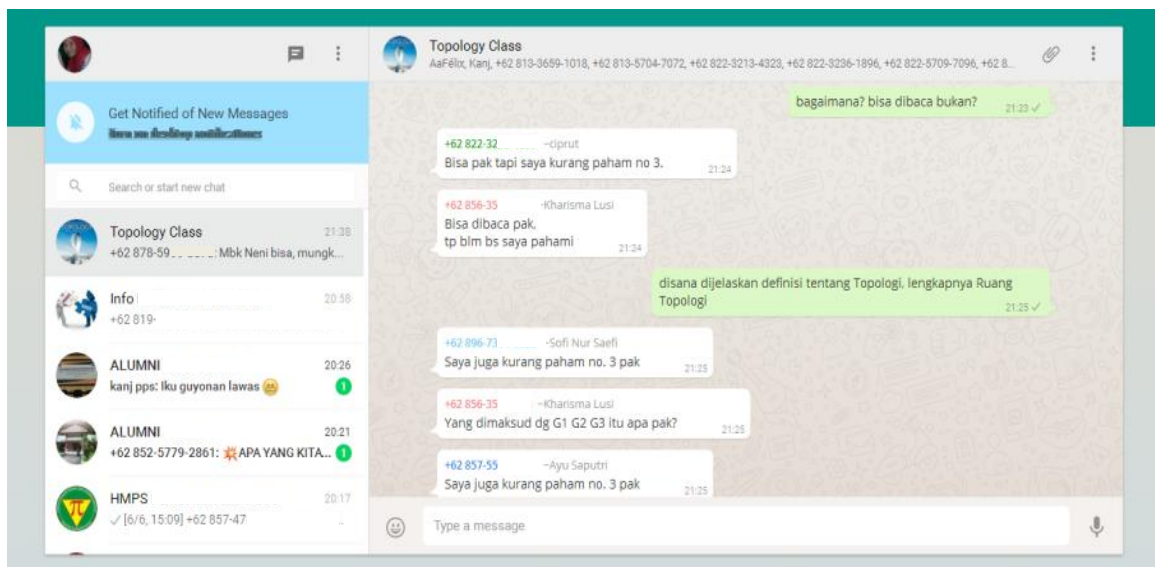


Figure 8. Display dialog and discussion sessions online

The figure shows each participant responds by asking, where it rarely happens in the offline session. This indicates that the online sessions can stimulate participants to convey the idea that begins with asking questions as an indicator of the learning process. In fact, each participant also helps each other on questions other participants shown in Figure 9.



Figure 9. Display the help dialog of participants

To clarify the submission of ideas from participants, the use of the photo as an image used by the participants to speed up the writing notation is not supported in most applications. This also applies to Whatsapp application that uses only standard notation, so if using mathematical notation is replaced by writing on paper and then photographed and attached to the group. Figure 10 shows how to use of the photos in an online session

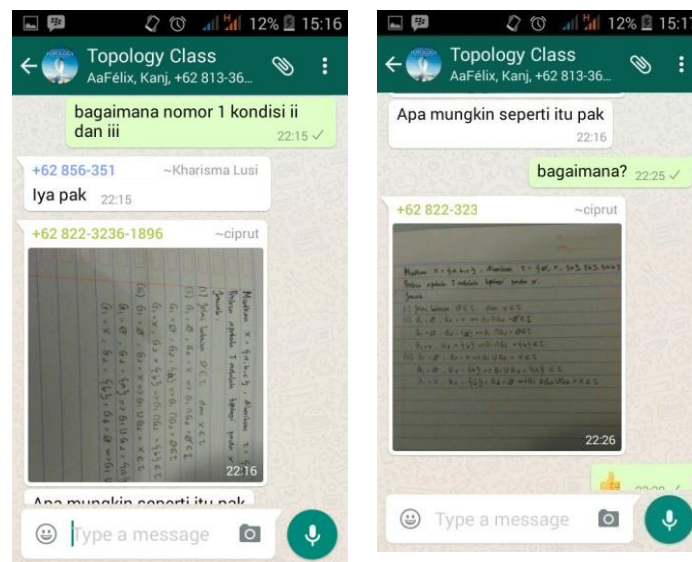


Figure 10. Use of the photos in an online session

4. CONCLUSION

Based on our discussion, it concludes that measures Whatsapp application utilization as a discussion media in Blended Learning sessions initiated by offline using conventional methods, so the online session focused on the discussion as indicated by dialogue and interaction among participants. Such steps include (1) Preparing the materials to form a slide which is realized with the image file created using a presentation application is then stored as an image file, (2) Ensure each participant own Whatsapp application and have

the contact number of each participant, (3) Create a group in Whatsapp application by entering all the contact numbers of participants.

The response of students to use as a discussion media Whatsapp application in Blended Learning with a high enough level of benefits of using 3.9 Whatsapp application where it means the course requires innovation adapted to technological advances developed in the community. Similarly, the use Whatsapp application as a discussion media is quite high with a scale of 3.2 indicating that the discussion can be simulated using the new media approach.

Whatsapp application becomes a common tool in the classroom, there will be the need for further research in order to identify the effectiveness this tool to integrate them into educational and pedagogical goals. This will necessitate the implementation of a wide range of quantitative research methodology. Also, it can be implemented to deal with high school students; junior high and elementary schools as well.

Provide a statement that what is expected, as stated in the "Introduction" chapter can ultimately result in "Results and Discussion" chapter, so there is compatibility. Moreover, it can also be added the prospect of the development of research results and application prospects of further studies into the next (based on result and discussion).

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