An analysis of online learning media in promoting learners’ autonomy during covid-19 pandemic

A N Azhiimah¹, T Rijanto², Munoto², I Nurlaela², I Basuki² and Joko²

¹Postgraduate Department, Universitas Negeri Surabaya, Surabaya, Indonesia
²Postgraduate Lecturer, Universitas Negeri Surabaya, Surabaya, Indonesia

Email: alfiinant.19009@mhs.unesa.ac.id¹, tririjanto@unesa.ac.id², munoto@unesa.ac.id³, luthfiyahnurlael@unesa.ac.id⁴, ismetbasuki@unesa.ac.id⁶, joko@unesa.ac.id⁷

Abstract. Covid-19 pandemic has affected the educational sectors in many countries. Learning activities that are usually carried out directly or face-to-face, have turned into online learning. The purpose of this study was to analyze the selection of learning media to promote learners’ autonomy during Covid-19 pandemic. This present study employed literature research method. There are four steps of this method namely, designing the review, conducting the review, analysing the review, and writing the review. The research subject was a journal that has a relationship with the research title. Based on the results of the literature review that was carried out, it could be seen that the selection of learning media needs to be done so that it can adjust to the achieved objectives in order for an effective learning outcome. Thus, learners’ autonomy can increase.

1. Introduction

Independent learning is a willingness to learn based on initiatives that comes from oneself without coercion from others to solve learning problems that are owned with full responsibility. Learning independence plays an important role in increasing the competence of students. The independent learning attitude of students can make students superior in learning. Based on constructivist theory, in the learning process, the teacher is not allowed to simply give knowledge to students, but students must be able to build their knowledge to provide opportunities for students to find their information and apply their knowledge [1]. Some indicators that need to be considered in independent learning are having a plan in learning, being independent in learning, having a sense of responsibility, behaving in discipline, being able to take self-initiative, doing self-evaluation, being able to make decisions freely and consciously, having a desire to move forward, having courage to resolve conflicts within oneself, and participating in learning activities [2]. Students’ learning independence can be improved by giving repeated exercises and completing the exercises given by their abilities.

Covid-19 pandemic that currently occurred has an impact in various fields, including in the field of education. Learning that is usually done directly or face-to-face has turned to learn that is done online. Online learning is carried out due to government policies in social distancing to reduce the spread of Covid-19. Thus the thing that needs to be considered is students’ learning independence. If students’ learning independence is low, online learning cannot take place well. This is because learning does not take place optimally like learning activities that take place face-to-face so that students have to do most
of the learning activities independently. Learning activities can be said to be effective if students can achieve predetermined instructional goals, provide an attractive learning experience, involve students actively to support the achievement of instructional goals and have the means to support the teaching and learning process [3]. The interactions that exist between teachers and students in online learning often encounter problems in the process because communication that is done virtually cannot be as effective as face-to-face communication [4]. This is because a teacher cannot be replaced by technology in learning interactions, so the teacher must be able to build the atmosphere needed by students psychologically [5]. Students' psychological needs can be in the form of a feeling of being able to learn, a feeling of being valued for learning outcomes, a feeling of autonomy by gaining freedom and trust [6].

Online learning is not a problem if teachers and students have implemented online learning before, but for teachers and students who are not used to learning online, they will have difficulty in implementing online learning [7].

Learning that is carried out completely online, will make students feel difficult in following learning activities. Based on the results of the research that has been done, it is known that the difficulties faced by students in doing online learning were the lack of clarity of teacher instructions when giving assignments to students, so that students cannot fulfill their assignments or were late in collecting their assignments [8]. This can occur due to the lack of skills and qualities of the teacher so that the delivery of material and assignments cannot be understood by students. On the other hand, the use of the internet can also hinder learning activities such as unstable network connections and server downtime due to the large number of students accessing the system [9]. In other studies also mentioned difficulties in online learning such as, 1) students cannot have their own learning initiative, so students wait for instructions or assignments from teachers in learning, 2) students were not used to carrying out online learning needs at home, students study material follows what is given by the teacher, not what they need, 3) the goals or targets of student online learning were still limited to obtain satisfactory grades, not the abilities they should improve, 4) some students were still unable to monitor, organize, and control online learning at home, still impressed learning as needed, 5) there are still students who gave up on e-learning tasks when there are difficulties and 6) mistake that most students make was that students rarely evaluate the process of learning outcomes [10]. Thus the thing that needs to be considered is related to the level of student learning independence because in online learning students must be able to manage their learning activities properly.

Learning independence can be increased through the learning media used. Online learning media is a media that has a control device that can be operated by the user so that the user can control or access the material according to their needs [11]. With the implementation of online learning, teachers face new challenges to master creative online learning media and can achieve maximum learning goals [12]. The selection of instructional media to be used in learning needs to be considered to determine its effectiveness [13]. The use of media and the preparation of material provided for students must be able to increase student learning independence. This is because students have more time to do learning activities independently than learning done through online learning. Learning media that can be used for online learning are Google Classroom, WhatsApp, Zoom, Edmodo, Schoology and so on.

Based on this description, the purpose of this study was to analyze the use of online learning media during the pandemic Covid-19 on students’ learning independence. The research was conducted by examining related research from various sources.

2. Research Method

The research method used in this research is literature research. Literature research is a research conducted by collecting data through libraries or research objects in the form of various sources of literature such as books, encyclopedias, scientific journals, newspapers, magazines, and documents. Literature research is focused on the study and review of various literature that has been published by academics or other researchers [14]. A good source of literature must meet three criteria, namely relevance, completeness, and recency. Relevance with respect to the suitability between the variables studied and the theory put forward, completeness with respect to the number of sources read, updated
with respect to the time dimension. The newer the sources used, the better the quality of the theory. Based on the sources obtained an analysis was carried out based on the relevance of the source with the title it owns. There are four steps in conducting literature research, namely, designing the review, conducting the review, analysis, and writing review [15].

2.1. Designing the review
The first step in conducting literature research was designing the review. In this step, the theme to be studied, the background, and the sources that used in the research were determined. Determination of sources was needed to decide how many sources to be studied, year of publication, type of source and so on. This is because a study can find different conclusions for the same question in the study depending on the number of journals, years or even search terms so that the conclusions obtained can be different. Thus it is necessary to choose the right sources for literature research.

2.2. Conducting the review
After the research theme was determined, the next step was to start conducting a review. A review was done by reading any literature that is considered relevant. This is very useful but will take a relatively long time. Another option for conducting a review was to focus on the research method or findings. Another option was to do a review in stages by reading the abstract first and making a choice whether to read the article in full or partially.

2.3. Analysis
After conducting the review, it was necessary to pay attention to how the articles were used in conducting the analysis in accordance with the research objectives. It was necessary to abstract the appropriate information from each source. The abstracted data can be in the form of descriptive information, such as author, year, topic, or type of study. It can also be in the form of conceptualization of a certain theoretical idea or perspective.

2.4. Writing review
The final step was to write a review. Depending on the approach taken, the preparation of review articles could be structured differently according to the information held. Even though the preparation of writing is different, things that need to be considered are that in writing it is necessary to include the objectives and methods in the literature research carried out.

3. Result and Discussion

3.1. Media used in learning
The implementation of learning that was carried out during Covid-19 pandemic is the implementation of online learning. In conducting online learning, it is necessary to pay attention to the selection of media used by the teacher. This is because in online learning, students have the responsibility to organize the learning activities they do well. Based on several studies that have been carried out, the media used by the teachers were in the form of Google Classroom, Zoom, Whatsapp, Edmodo and Schoology.

Learning using google classroom media can easily be done by teachers or students. Teachers can manage creative and innovative online learning and create collaborative classes to build interaction with students. Google classroom is equipped with single view features for student assignments, class arrangement, decimal grading in assessments, quizzes integrated with google form and even able to conduct video conferencing via the google meets application [16]. Before carrying out learning activities using google classroom, students can be given instructions on how to learn using google classroom media which will take place later so that students do not have difficulties in learning later [17]. The use of learning media using google classroom can also be combined with other learning media such as WhatsApp. The strategy that can be used was by posting material on google classroom and sharing the
link via WhatsApp. This strategy allowed students to access posted material whenever they want to use their electronic devices [18].

WhatsApp is a messaging application that is widely used in Indonesia. The features of the WhatsApp application that can send messages, images, sounds, videos and documents are used by teachers in learning so that WhatsApp is currently an online learning medium that is widely used during the pandemic. The benefits of using the WhatsApp application in learning are 1) WhatsApp provides collaborative learning facilities between teachers and students or fellow students both at home and at school, 2) WhatsApp is a free application that is easy to use, 3) WhatsApp can be used to share comments, text, images, videos, voice and documents, 4) WhatsApp makes it easy to disseminate announcements and publish their work in groups, 5) Information and knowledge can be easily created and disseminated through various WhatsApp features [19]. However, during its implementation, it was found that learning media using WhatsApp has several weaknesses because WhatsApp is a messaging application. In a study, it was found that 1) Teachers and students needed a lot of space on their smartphones because the class is not only owned, 2) Teachers had to wait for responses from students in virtual classes because there was no number of attendance on WhatsApp, 3) Interactions between teachers and students overlapped [20]. Thus, WhatsApp can be used as a medium of learning provided it needs to be collaborated with other learning media.

Learning media that have been widely used even before Covid-19 pandemic were Edmodo and Schoology. This learning media is widely used in blended learning where learning is carried out face-to-face with the teacher, then it can be combined with learning that uses e-learning. The display on learning media using Edmodo and Schoology resembles the display on Facebook with the aim of learning so that students are more familiar with these views. The features contained in Edmodo are, polls, grade books, quizzes, files, libraries, assignments, award badges [21]. The features provided can help teachers monitor students during online learning. Whereas in schoology, the features provided are courses, groups and learning resources [22]. In conducting learning using edmodo media or shoology, the teacher can share the class code to students so that students can join the class, and then the teacher can share material, worksheets, or tests.

Zoom is a software that can be used for conducting conferences. The features contained in Zoom such as making presentations online can be used as learning media. Students who have difficulties in online learning can indirectly be overcome by using Zoom so that the teacher can explain the material directly or students can make presentations. Based on the previous research, it revealed that 1) students could understand the material more easily because the teacher can explain the material directly, 2) students could ask questions and discuss freely such as learning in class, 3) students' questions could be responded directly so that it is more effective, 4) students did not feel bored 5) student activity could be directly monitored [23]. Meanwhile, the problem that might encountered when using zoom is that students needed additional internet data to be accessed because transferring videos requires more data to connect [24].

3.2. Selection of media used for independent learning

The use of learning media in online learning needs to be determined according to the needs and conditions of students. Thus, the selection of media types must be carried out following with the correct procedure because various types of media have their respective advantages and disadvantages. There are five steps in selecting learning media, namely, 1) Information or learning, 2) Message transmission, 3) Characteristics of lessons, 4) Media classification, 5) Characteristics of each media. The use of media needs to be determined for information purposes or learning. Media for information purposes do not have the obligation to evaluate the ability or skills to receive information, while for media used in learning, evaluation is needed. Furthermore, in determining message transmission, the media used in learning must be able to allow for interaction between teachers and students. In the characteristics of the lesson, it is necessary to analyze the learning objectives whether the learning objectives are included in the cognitive, affective or psychomotor domains because each of these goal domains requires different learning media. In the media classification step, it can be done by classifying the media according to the
special characteristics of each media. In general, media can be classified into audio, video, and audio visual media. The final step is to analyze the characteristics of each media by considering the advantages or disadvantages of each existing media.

The criteria for selecting instructional media also need to be considered. According to Rohani [25], there are six criteria in selecting media, namely conformity with, 1) Objectives, 2) Learning materials, 3) Characteristics of students, 4) Theory, 5) Learning styles, and 6) Environmental conditions, facilities, support and time available. To adjust the learning media to the learning objectives, it is necessary to analyze the objectives whether they are cognitive, affective or psychomotor. Furthermore, in accordance with the learning material, it is necessary to consider the subjects to be taught to what extent the depth must be achieved. Whereas in conformity with student characteristics, aspects of students' initial abilities, culture or student habits can be considered. This is aimed to avoid negative responses and gaps in student understanding. The suitability of the media with the theory must be based on the theory raised to increase the efficiency and effectiveness of learning. In the suitability of learning styles, it can be based on the psychological conditions of students. Furthermore, for environmental conditions, facilities, support and available time, the selected learning media must be able to support this so that learning can be carried out.

Thus, the selection of learning media to increase learners’ autonomy can be done by paying attention to the things that have been described. Based on the studies that have been carried out, in learning, the teacher cannot determine one learning medium but can combine learning media according to the goals to be achieved. To increase student learning independence, students must be able to solve their problems with their own abilities. Thus, the use of learning media such as WhatsApp, Edmodo, Schoology, or Google Classroom can be implemented as an option so that, students can learn independently. This is because the teacher can upload material in the form of modules or videos on WhatsApp, Edmodo, Schoology or Google Classroom which can be studied independently by students. Furthermore, giving quizzes can be done using Edmodo or Schoology learning media because in those learning media, there is feedback that will motivate students to increase their learning independence. However, based on the study conducted, many students were unable to participate in learning because they did not receive direct learning from the teacher, so that the teacher could use the Zoom learning media to have discussions with students on which parts of the learning material were still difficult to understand. Keep in mind that the use of media using Zoom cannot be done at every meeting, but can be scheduled together how many times a month to conduct learning using media Zoom. This is because many students complained about using a lot of data when conducting learning activities using Zoom. Thus, the independence of students’ learning can increase because the teacher always monitors how the learning activities were carried out by students.

4. Conclusion
The implementation of online learning during the Covid-19 pandemic requires teachers’ ability to choose appropriate learning media so that students’ learning independence can increase. The learning media that were widely used during the Covid-19 pandemic were Whatsapp learning media, Google Classroom, Edmodo, Schoology and Zoom. The selection of learning media needs to be adjusted to the objectives, learning material, student characteristics, theory, learning styles, environmental conditions, facilities, support, and available time. Thus, the selection of learning media cannot be determined on one learning media, but through collaboration between existing media. By choosing the right learning media, students can carry out learning activities well and their learning independence can be increased. Further research can be carried out by developing learning media that is able to cover all things which are achieved in learning objectives. Research can also be carried out by comparing the best combination of learning media to use in independent learning.

References
[1] Dedeyerianto 2019 Pengaruh internet dan media sosial terhadap kemandirian belajar dan hasil
belajar siswa *Jurnal Kajian Ilmu Kependidikan* **12** 208-225

[2] Mujisuciningtyas N 2014 Pengaruh kemandirian belajar dan sarana prasarana pembelajaran terhadap hasil belajar praktik di SMK Negeri 2 Tuban *Jurnal Ekonomi dan Kewirausahaan* **2** 103-155

[3] Hikmat H, Hermawan E, Aldim A, dan Irwandi I 2020 Efektifitas pembelajaran online selama masa pandemi covid-19 *LP2M*

[4] Baber H 2020 Determinants of student’s perceived learning outcome and satisfaction in learning during the pandemic covid-19 *Journal of Education and e-Learning Research* **7** 285-292

[5] Risdianto E 2019 Analisis pendidikan di era revolusi industri 4.0 *Research Gate* 1-16

[6] Octaria D, Fitriasari P, Sari N 2020 Blended learning dengan macromedia flash untuk melatih kemandirian belajar mahasiswa *Jurnal Elemen* **6** 25-38

[7] Bahasoan A, Ayuandiani W, Mukhram M, Rahmat A 2020 Efectiveness of online learning in pandemic covid-19 *International Journal of Science, Technology and Management* **1** 100-106

[8] Ramanta D and Widayanti F D 2020 Pembelajaran daring di sekolah menengah kejuruan putra Indonesia malang pada masa pandemi covid-19 *Prosiding Seminar Bimbingan dan Konseling* 61-67

[9] Putra R A M 2020 Kendala pelaksanaan pembelajaran jarak jauh (PJJ) dalam masa pandemi *Pendidikan Vokasional Konstruksi Bangunan*

[10] Utami Y P and Cahyono D A D 2020 Study at home: analysis kesulitan belajar matematika pada proses pembelajaran daring *Jurnal Ilmiah Matematika Realistik* **1** 20-26

[11] Mantra I B N, Widiasiutti I A M S, dan Pramawati A A I Y 2020 Peningkatan kompetensi mengajar secara online bagi para guru selama pandemi virus corona *Jurnal Abdi Dharma Masyarakat* **1** 12-20

[12] Atsani L G M Z 2020 Transformasi media pembelajaran pada masa pandemi covid-19 *Jurnal Studi Islam* **1** 82-93

[13] Wargadinata W, Maimunah I, Dewi E, and Rofiq Z 2020 Student’s responses on learning in the early covid-19 pandemic *Jurnal Keguruan dan IlmuTarbiah* **5** 141-153

[14] Taylor, D and Procter M 2010 The literature review: a few tips on conducting it

[15] Synder H 2019 Literature review as a research methodology: an overview and guidelines *Journal of Bussiness Research* **104** 333-339

[16] Gunawan, Suranti N M Y, and Fathoroni 2020 Variations of models and learning platforms for prospective teachers during the covid-19 pandemic period *Indonesian Journal of teacher Education* **1** 61-70

[17] Wan Hassan W A S, Ariffin A, Ahmad F, Shaberi S N M, Nor Azizi M L, and Zulkiflee S N 2020 Covid-19 pandemic: langkawi vocational college student challenge in using google classroom for teaching and learning (T&L) *International Journal of Advanced Trends in Computer Science and Engineering* **9** 3299-3307

[18] Hallal K, HajjHussein H, and Trilak S 2020 A quick Shift from classroom to google classroom: SWOT *Journal of Chemical Education*

[19] Susilawati S and Supriyatno T 2020 Online learning through whatsapp group in improving learning motivation in the era and post pandemic covid-19 *Jurnal Pendidikan* **5** 852-859

[20] Asmara R 2020 Teaching english in a virtual classroom using whatsapp during covid-19 pandemic *Language and Education Journal* **5** 16-27

[21] Mindarta E K., Harly M, Sumarly, and Paryono 2020 The quality of asynchronous online learning on edmodo-based engine electricity system course during covid-19 pandemic *Journal of educational Innovation* **7** 64-72

[22] Setiawan W 2020 Succesfull learning in the middle of pandemic covid-19 *Prosiding International Webinar on Education 2020*

[23] Yulianto E, Cahyani P D, dan Silvianita S 2020 Perbandingan kehadiran sosial dalam pembelajaran daring menggunakan whatsapp group dan webinar zoom berdasarkan sudut pandang pembelajaran pada masa pandemi covid-19 *Jurnal Riset Teknologi dan Inovasi*
Pendidikan 3 331-341

[24] Agung A S N, Surtikanti M W, and Quinones CA 2020 Student’s perception of online learning during covid-19 pandemic: A case study on the english students of STKIP Pamane Talino
Journal of Social Sciences and Humanities 10 225-235

[25] Rohani 2019 Media Pembelajaran Medan: Universitas Islam Negeri Sumatera Utara