

Web Based Learning During The Covid-19 Pandemic

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Abstract. Pandemy covid-19 has changed the learning system in schools. The "learn from home" policy is one. Web based learning is used as a media between teachers and students. This research is a literature study. The goal of this research is to assess web based learning as theory, design and development, implementation and implications. Data collected from observations, interviews, questionnaires of books, articles and journals. The results of this research show that web based learning is well used as a mathematics learning alternative in the pandemic era

Keywords: web based learning, the covid-19 pandemic

INTRODUCTION

For the time being, the spread of Coronavirus Disease 2019 (Covid-19) is the cause of the highest death rate. The impact of the Covid-19 pandemic that has ravaged the world, including Indonesia, has altered the course of events, particularly in the education sector. The COVID-19 pandemic has resulted in fundamental policy changes in Indonesia's educational system. Nadiem Anwar Makarim, Indonesia's Minister of Education and Culture, has issued a number of policies to govern educational activities during the pandemic. This was communicated via Circular Letter Number 4 of 2020, dated March 24, 2020, and titled "Implementation of Education Policies in the Emergency Period for the Spread of Coronavirus Disease (Covid-19)." There are six (six) policies that are explained in detail. The most fundamental change, however, is to change the way students and teachers teach and learn through the policy of learning from home.

Because of the existence of this policy, various related parties have rushed to provide alternative solutions so that educational activities can take place even without face-to-face meetings (Gunawan et al., 2020). The learning process in Indonesia will continue to be conducted online until early 2021 because this method is thought to be quite effective in limiting the spread of Covid-19. This condition is aided by rapid technological advancements, which are critical to supporting the learning process at various levels of education.

So far, the study from home policy has had a significant impact on the habits and behavior of teachers and students. So far, teachers have taught in the classroom in the sense of teaching in a school building with a teaching and learning function that is supported by facilities to support the teaching and learning process. Teachers are having difficulty with this new policy because they are still looking for the right pattern for how learning from home can be done. The positive side effect of educators' difficulties is that they will inevitably have to learn online learning (e-learning).

One type of e-learning that is currently being popularly developed by educational institutions is the use of the internet in the form of web-based learning media. Schoology, Moodle, Edmodo, Claroline, Google Classroom, and many other web-based learning platforms are popular today. Internet technology, which is interactive, flexible, and not constrained by space or time, is expected to be one of the most effective learning media.

Learning via the internet is now referred to as web-based learning. This technology provides speed and is not limited in terms of location or time to access information. Students can easily carry

out learning activities whenever and wherever they feel comfortable. Space, distance, and time constraints are no longer a difficult problem to solve.

Recognizing that web-based learning is more than simply putting learning materials on the internet to be accessed via a computer. The web is used for more than just storing various documents or information instead of paper. The web is used to access the superior side that was previously revealed. The benefits that paper media or other forms of media do not have.

To currently support web-based learning, innovative and enjoyable learning is required (Sumantyo, 2020). Even when various unfavorable circumstances arise, innovative learning must be developed on a continuous basis (Masykur, Nofrizal, & Syazali, 2017). The innovations used include not only teaching materials, but also media for delivering teaching materials.

The use of web technology for learning is still in its early stages. Many studies, ranging from instructional design to technical implementation, remain to be completed.

RESEARCH METHOD

This study uses a qualitative method of literature study which will examine various literatures and related scientific sources. Researchers read and analyze as well as conclude and determine web-based learning designs that can be used during the COVID-19 pandemic. The goal of this research is to assess web based learning as theory, design and development, implementation and implications. Data collected from observations, interviews, questionnaires of books, articles and journals.

RESULT AND ANALYSIS

1.1 What, Why, And How Of Web-Based Learning

Web-based learning, also known as web-based training (WBT) or web-based education (WBE), can be defined as the use of web technology in the field of education for the purpose of learning (Horton, 2000). In simple terms, web-based learning refers to all learning that occurs through the use of internet technology, as long as the learning process is perceived to occur by those who participate in it.

How can learn using the internet? There are some basic requirements that must be met, the most important of which is access to information sources via the internet. There is also information about where the source of the information we seek is located. There are a number of data sources that can be accessed freely and without the need for complicated access administration processes. There are several information sources that can only be accessed by those who have been authorized by the information source's owner. This is not a simple task.

Many parties attempt to use web technology for learning by posting learning materials online and then assigning students to download the learning materials as homework. Following that, they were instructed to return reports, assignments, and so on to the teacher via the internet. Of course, doing so will not result in an optimal learning process.

The terms teacher and instructor are also not used in web-based learning. The terms coach or mentor are more commonly used. The coach and mentor's role is to provide students with motivation, advice, and guidance throughout the learning process. This term may feel more appropriate for adults, where relationships appear to be more personal and mature.

1.2 Implementation of Web-Based Learning

Web-based learning during the COVID-19 pandemic necessitates close collaboration among all parties, including educators and students (Jowsey et al., 2020; Safitri et al., 2020). This condition requires educators to be more technologically literate and able to read situations and understand the circumstances of their students. In addition, students must provide proof of their family, economic, and internet circumstances. This is critical in order for educators to provide waivers or substitute assignments (Crawford et al., 2020; Gikas & Grant, 2013).

Here are some important things in implementing learning Web-based: 1. Clearly state the learning objectives for each activity. Make sure students understand what they need to do and why

they need to do it. Work weight should be assigned to activities that are carried out directly and those that are carried out virtually. 2. Provide specific instructions. When giving instructions, use clear language. Confusion causes students to become passive and slow to respond, and it can even lead to long-term misunderstandings. This misunderstanding frequently has an impact on subsequent discussions. 3. Communicate the anticipated behavior and response. Learning on the internet necessitates a high level of self-discipline. Good communication skills are also essential. All parties involved must have a clear understanding of the importance of attitudes, behaviors, and basic competencies. 4. Ensure that students have adequate computer skills and knowledge of all software used during the learning process. 5. Provide a variety of virtual, synchronous, and asynchronous communication options to meet a variety of needs. 6. Allocate a specific amount of time to each activity. Make certain that every activity that requires a response is timed. This is necessary so that students do not postpone their interactions. 7. Encourage people to think in terms of quality rather than quantity. Some argue that being active in interacting is positive and will result in praise from others or teachers. This viewpoint must be corrected by conveying not only the frequency of interaction, but also the quality of the substance delivered. 8. Provide a forum for discussion of various topics that are unrelated to the subject matter of learning. Because learning in groups and collaboratively necessitates the development of positive personal relationships between students and teachers, it is appropriate to provide a separate forum for non-learning-related social communication. 9. Make available alternative modes of communication. This is necessary so that communication can continue even if one of the facilities is unavailable. 10. Regularly monitor student activities and respond as quickly and effectively as possible. Students will use the teacher's speed in responding to a question or response, whether they like it or not, as a reference for interacting speed between them. Monitoring student activities on a regular and timely basis is critical to keeping web-based learning alive and dynamic.

Web-based learning, particularly during this pandemic, is in desperate need of the assistance of various electronic devices such as smartphones and laptop computers. This electronic device can be used to access a variety of information at any time and from any location (Nadeak, 2020; Limbong & Simarmata, 2020).

The use of electronic-based technology contributes significantly to the world of education. The contribution in question is the achievement of web-based learning goals and the ability to have a positive impact on students (Chiodini, 2020; Chick et al., 2020). The use of various digital platforms is also required in order for web-based learning to be implemented optimally.

1.3 Platforms That Can Be Used As Web Based Learning

The era and post-covid-19 encourage educators to choose web-based learning by utilizing existing platforms such as: webex, zoom, whatsapp, LMS, moodle, youtube videos, google scholar, g-meet, microsoft teams, edmodo, and so on. In this section, the various platforms will be explained.

Moodle is a free LMS application that anyone with a General Public License, license can download, use, and modify. Moodle is an acronym that stands for Modular Object Oriented Dynamic Learning Environment. Moodle is a software application that can convert learning media into a web form. This application allows users to access learning materials by allowing them to enter a virtual "classroom." We can use Moodle to create learning materials, quizzes, electronic journals, and other class-like features. Moodle strongly supports web-based learning, which can be used to create learning materials in a variety of formats, including text, portfolio, animation, audio and video, and others. Educators can use this format to deliver learning materials via web-based learning and to build systems based on the concept of web-based learning as distance learning. This learning concept proposes a teaching and learning system that is not constrained by space or time. An educator can source material from any source. Similarly, a student can access material from any location and at any time.

Moodle is a popular web-based learning platform for creating a course website and ensuring that students have access to it. This is only available to registered students. This web-based learning platform can be accessed by exchanging geographically dispersed information. Students can communicate with their friends via synchronous communication (chat) and asynchronous communication (discussion forum). In terms of functionality, Moodle has features that are simple to implement, aid in the student assessment process (online tests and quizzes), and can manage

assignments from students who are already on schedule, in addition to displaying various types of preparation tools to support the teaching learning process (Costa et al., 2012). This Moodle can assist teachers in monitoring how each response in the learning process is to become a teacher while also outperforming other students (Harahap, 2015).

Google Classroom was first introduced as a G-Suite for Education feature on May 6, 2014, and was made public on August 12, 2014. Google announced a class API and share buttons for websites in June 2015, allowing school administrators and developers to engage with Google Classroom even further. In March 2017, Google opened classes to allow private Google users to enter classes without the need for a G Suite for Education account, and in April, private Google users were able to create and teach classes (Imaduddin, 2018: 4). According to Numertayasa (2017:137), Google Classroom is a mixed learning platform for all levels of education that makes it easier for teachers to create, share, and classify each paperless assignment.

According to Iftakhar (2016:12), Google Classroom is one of the best platforms for improving teachers' workflow. "It provides a set of powerful features that make it an ideal tool to use with students." 'Classroom assists teachers in saving time, organizing classes, and improving communication with students. Anyone with Google Apps for Education, a free suite of productivity tools that includes Gmail, Drive, and Docs, can use it. Google Classroom is widely regarded as one of the most effective platforms for improving teacher workflow. This Google Classroom has a robust feature set that makes it an excellent tool for use with students. Classrooms assist teachers in saving time, organizing classes, and improving communication with students. Anyone with Google Apps for Education, a free suite of productivity tools that includes Gmail, Drive, and Docs, can use it.

Microsoft Teams is a component of the Office 365 suite that can be used to host virtual meetings and discussions, share and collaborate on files, and record class sessions from anywhere and at any time (Poston et al., 2020; Pradja & Baist, 2019; Schumann Erikson, 2020).

Edmodo is a platform for online education. Nicolas Brog and Jeff O'Hara founded Edmodo, a microblogging website, in 2008 (Hutagalung, 2019). Edmodo is used for communication, learning materials, and evaluation. Edmodo has a group code that allows educators to place learning materials, assign assignments, and hold exams, according to (Amalia & Siregar, 2019). This is due to the fact that Edmodo's interface is similar to that of Edmodo combines some of the features of a learning management system (i.e. applications used to manage learning, deliver content, and conduct online activities such as ensuring attendance in virtual classes, ensuring assignment collection, and tracking student achievement) and some of the features of social networks to create an appealing and simple-to-use learning media, later known as the Learning Social Network (Subiyantoro et al, 2013). Edmodo is a website that enables teachers to create virtual classes, discussion forums, learning agendas, structured assignments, quizzes, assignment checks, and reward students. Edmodo is a web-based learning platform that can be used by both teachers and parents to manage student activities. The use of Edmodo can bring families and schools together to help each other learn (Wirda et al, 2014; Trisniawati et all, 2019). Edmodo, which has a design similar to Facebook, provides a safe space for teachers and students to connect, collaborate, and share content (Nu'man, 2013). With an interface that resembles Facebook, a popular social media platform, users will not feel alien and will even find it simple to use (Suriadi, 2014; Balasubramanian et all, 2014). The features offered are: 1) being able to edit Profile Picture and Name, 2) the same view as Facebook, 3) assignments that the teacher can post as homework/assignments, 4) setting schedules for important events, 5) one student can become a many teachers, 6) Edmodo can be accessed via cellphone (Safitri, 2020).

A learning management system (LMS) is a system that displays, tracks, reports on, and manages learning content, student progress, and student interaction (Ali, 2011). LMSs can manage web-based learning administration such as registration and test scores, as well as provide teaching materials in a variety of formats. LMS is a system that manages learning by identifying, assessing, tracking progress, and collecting overall assignments, similar to face-to-face classroom learning. According to Baumgartner (in Graf, 2007), an LMS is software that aids in the teaching/delivery of subject matter via the internet.

Zoom is a platform that allows for audio and video conferencing, text messaging, and webinar hosting. Several universities chose Zoom as their lecture medium at the beginning of the use of online lectures. There has been an increase in users of work-from-home supporting application services, specifically video conferencing services such as Zoom, for users of one of the providers,

which is more than 443%. Zoom users were recorded as 257,853 on March 26, 2020, whereas Zoom users did not exceed 10,000 the previous week, on March 19, 2020. Zoom is the medium that encourages students to participate in learning the most (Meiza et al., 2020); it is free, flexible, and multiplatform (Abdillah, 2020). Furthermore, the Zoom application's features are very simple, accessible, and easy for students to learn (Hidayatullah et al., 2020), and effective in organizing theory-type learning (Hikmat et al., 2020). The process of teachers delivering lecture material to students via Zoom continues as usual (Bustomi, 2020), and it is not boring because it is accompanied by a variety of methods (Farida et al., 2020; Astini, 2020). Another advantage of Zoom is that it can help with online presentations (Zahra & Wijayanti, 2020), where the Sharing Screen feature on Zoom can help with the need to present material to students in the same way that a traditional meeting can (Naserly, 2020).

Some Zoom platforms are free, while others are not. Zoom video conferencing, which is free, is typically only effective for 40 minutes. Meanwhile, if you want to use it without a time limit or a limit on the number of meeting attendees, the account owner must install a premium or paid application (Gunawan et al., 2020). Furthermore, the security level of Zoom is questionable; even Google has prohibited its employees from meeting online using Zoom (Sharma, 2020), and with the privacy of Zoom users still vulnerable to being attacked by irresponsible hackers, it is hoped that related parties will invest more in the development of this platform (Hidayatullah et al., 2020). Despite some reservations in terms of Zoom, this platform is still in high demand, and it is not uncommon for online lectures to continue to use the Zoom platform and combine it with other platforms.

The following platform is WhatsApp, which is commonly referred to as one of the social media platforms with facilities for text messages, phone calls in the form of audio and video, and is popular among the general public. How could it not, until February 2017, WhatsApp's active users reached 1 billion every month (Anwar & Riadi, 2017). WhatsApp's designation as a means of online lectures contains some intriguing features. Because WhatsApp has the WhatsApp Group feature, it is frequently used as a medium for sending information and documents related to online lectures. WhatsApp is a platform that is close to student activities because students are used to using it in their daily lives, so it is quite easy for students to conduct online lectures through this platform. As a result, WhatsApp Group is appropriate for delivering teaching materials and assignment documents (Windhiyana, 2020; Nadeak, 2020). So far, the WhatsApp Group has served as a platform supplement to other video conference platforms, with the WhatsApp Group providing additional explanations in the form of audio recordings to make online lectures more efficient (Naserly, 2020; Astini, 2020), as well as being more quota-efficient than other platforms. Students can use voice notes on WhatsApp to create good paper presentations. The process begins with a description of lecture accomplishments, followed by the presentation of papers, discussions, and the submission of conclusions. Lecturers can also become more involved in delivering lecture material. Furthermore, by interacting during online lectures, whether by asking questions or responding, students will be more trained to compose sentences according to Indonesian language rules (Zahra & Wijayanti, 2020).

In the process of using WhatsApp Group, there are issues, such as the response from students who tend to be passive. As a result, information shared by lecturers on WhatsApp Groups is disseminated without response from students (Naserly, 2020). Furthermore, online lectures delivered via this platform frequently fail to function properly because many students have the application status set to "on," despite the fact that they are engaged in other activities (Bustomi, 2020). However, the WhatsApp platform has the highest level of effectiveness, particularly as a medium for assignments and tutorials, as evidenced by increased student learning outcomes when compared to before conducting online lectures (Hikmat et al., 2020; Meiza et al., 2020; Yensy, 2020). This is also supported because this platform is well-known among lecturers and students, as is the way it works.

Schoology is a free web-based educational platform that enables lecturers to deliver online classes to students. The benefits of Schoology are that it is easier to use, that it can be accessed by anyone, that the management system frees lecturers to provide materials, manage processes, and evaluate the lecture process (Tigowati et al., 2017; Nadeak, 2020), and that it allows collaboration and discussion between individuals and groups, as well as class discussions (Dewantara, 2018;

Mulatsih, 2020). This enables lecture content to be obtained and accessed more quickly, anywhere and at any time, without regard for space or time constraints.

The Schoology platform offers numerous benefits, including the ability to supplement traditional lectures with online discussion processes, increase student understanding and motivation, increase lecture effectiveness, support effective feedback from lecturers (Suja'i, 2018; Hermansyah et al., 2020), and improve students' critical thinking skills (Kustandi, 2017). Schoology's features are quite interesting, particularly the groups, resources, courses, quizzes, and attendance features, all of which make online lectures easier. Furthermore, Schoology is very adaptable in its use, allowing it to be applied to all courses, majors, and study programs (Suchaina, 2018; Astini, 2020).

1.4 Several Studies Related To Web-Based Learning

Web-based learning can be a powerful tool for improving student learning outcomes (Hatip & Listiana, 2018). Dian Ratu Ayu Uswatun et al. research has stated that the use of webinars accompanied by tutorials aided students. It was discovered that 82 percent of students supported the implementation of webinars, 95 percent were enthusiastic about learning tutorials, and 62 percent increased their enthusiasm in carrying out learning (Khasanah, et al: 2020). According to Mursyid's research, the use of zoom in learning is more efficient than using a Google class room or a Whatsapp group. According to his research, the Zoom application provides free quotas as well as interaction space for students and lecturers (Naserly, 2020).

According to the study's findings (Singh, 2020; Means et al., 2013), web-based learning is the best solution for continuing the learning process even when there is no face-to-face contact. Web-based learning aims to not only complete the material but also to maintain student learning motivation (Firman & Rahayu, 2020). Because it is more cost effective, using Zoom for web-based learning can increase attendance, significantly increase student engagement, and make it easier to collect qualitative data (Kusnayat et al., 2020). According to the study's findings (Hikmat et al., 2020), the Zoom Platform achieved the highest level of effectiveness, particularly as a medium for discussion and face-to-face communication. Meanwhile, the WhatsApp platform achieved the highest level of effectiveness, particularly as a medium for assignments and tutorials, as evidenced by an increase in student learning outcomes compared to before conducting online lectures (Hikmat et al., 2020; Meiza et al., 2020; Yensy, 2020).

According to Sutrisno (2020), the use of the Google Classroom platform for online lectures during the COVID-19 pandemic is quite effective, but it is even better when combined with other platforms. There are constructive suggestions for improving this platform, including the addition of live conference features and lecture video attachments that can be accessed directly in the classroom (Setiawan & Wicaksono, 2020; Mulatsih, 2020). According to one study, Nazari et al (2019), Google Classroom has features that can make the web-based learning process more interactive and help students improve their skills. According to Azhar and Iqbal (2018)'s research, Google Classroom is an effective medium for teaching and learning. Google Classroom implementation is thought to be capable of developing independence and creative thinking (Haka et al., 2020). Other research indicates that the use of Google Classroom has the potential to improve the effectiveness and efficiency of the learning process (Basher 2017). (Harefa, 2020). Not only is Google Classroom effective, but it is also free and simple to use for educators and students (Ramadhani et al., 2019).

According to research (Suja'i, 2018; Hermansyah et al., 2020; Kustandi, 2017), the Schoology platform has many benefits, including the ability to supplement traditional lectures with online discussion processes, increase student understanding and motivation, increase lecture effectiveness, support effective feedback from lecturers, and improve students' critical thinking skills. Research conducted by Diana (2020) shows that interactions between educators and students are easier and more active when web-based learning is implemented using Microsoft Teams. According to research (Abdjul et al: 2021), using Microsoft Teams with the PBL model has a significant impact on students' problem-solving abilities.

According to the findings of Safitri's research (2020), Edmodo is effective in training student learning independence in nearly 90% of cases. According to Limbong and Simarmata (2020), Edmodo is very effective when used as a tutorial and assignment media and is accompanied by other platforms used for online lectures, particularly in theory courses. This is also supported by the

findings of Windhiyana's (2020) research, which indicates that lecturers will continue to use Edmodo in lectures by combining it with other relevant media or models.

CONCLUSION

Positively, web-based learning contributes significantly to the continuity of learning during this pandemic. Educators and students will be safe in their respective locations or homes, eliminating the need to leave the house and meet face to face.

Web-based learning necessitates the use of an instructional model that is specifically designed for that purpose, in addition to internet infrastructure. An instructional model is an important factor in determining the effectiveness of the learning process. Whatever instructional model is chosen, the interaction between students, teachers, supporters, and learning materials must be prioritized.

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