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Implementation of Big Data in the Zoom and Google Classroom Applications as Online Learning Media

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ABSTRACT

Distance or online learning is increasingly becoming a trend in this digital era. Platforms like Zoom and Google Classroom (GCR) are very helpful in supporting online learning. However, how big data on the platform can be utilized as a learning support medium is still an interesting research topic. This article discusses how big data on the Zoom and GCR platforms can be used to improve the quality of online learning. By analyzing user data, personalizing learning, and increasing learning effectiveness, educators can obtain information that is very useful in developing effective learning strategies. However, ethics and user data privacy policies must still be considered in the use of big data on these platforms. In order to improve online learning, the use of big data on the Zoom and GCR platforms can be an effective solution.

Keyword : Big Data, Online Learning, User Data Analysis

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1. INTRODUCTION

Online learning is increasingly popular in this digital era, especially during the COVID-19 pandemic which forced schools and tertiary institutions to switch to a distance learning model. Platforms such as Zoom and Google Classroom (GCR) have helped many educators to provide effective and interactive online learning. However, the platform also generates enormous and valuable data that can be leveraged to improve the quality of online learning. This data is often referred to as big data.

In this article, we would discuss the relationship between big data on the Zoom and GCR platforms and online learning. In the digital era, data is one of the key factors that can help make the right decisions. Therefore, the collection, analysis, and use of big data on the Zoom and GCR platforms can help teachers increase the effectiveness of online learning.

Several ways that can be done through the use of big data on the platform are by analyzing user data, personalizing learning, and increasing learning effectiveness. However, it is important to remember that the use of big data must be done with good ethics and privacy policies to protect user data from misuse.

In the context of education, big data can be a very useful resource in improving the quality of online learning. Therefore, it is important to understand the potential use of big data on the Zoom and GCR platforms in the context of online learning and develop appropriate strategies to utilize them effectively.

2. RESEARCH METHOD

In this study, the authors used the library research method). Literature search is research conducted by analyzing relevant journals, articles, papers, notes or other references that are suitable for the problem highlighted by the researcher. The library research approach is used to create concepts related to Big Data Links on the Zoom Platform and Google Classroom as Learning Support Media). Stages of research is the selection of subjects based on the problem. Then, investigate knowledge to decide on a subject of study.

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After determining the research subject, the researcher obtained data sources from journals, papers, and books related or related to the topic of the article.

3. RESULTS AND DISCUSSION

A. Big Data

Data is a collection of facts or statistics collected as a reference or analysis. Technically, data is defined as a collection of quantitative or qualitative values about people, objects or others. The development of computers and information technology has resulted in data storage being done digitally. With the widespread use of computers and information technology, the amount of digital data stored has become even greater. This huge amount of digital data, which is known as the Data Raya (Big Data), presents several new challenges for scientists. For example, what is the efficient way to process the highway data; whether we can extract new information from the highway data; can we use highway data to make forecasts; and so forth.

Big Data according to experts, namely Burk and Miner (2021), is a very large volume of data making it difficult to process data with traditional technology. In some companies, the volume of this data is very large or moves very fast or exceeds the current processing capacity. the meaning of Big Data in the Gartner IT Glossary, namely: large-scale, high-speed, and/or highly diverse information assets that require a cost-effective and innovative form of information processing that enables greater transparency, decision-making, and process automation. Strengthened by the opinion of Hurwitz, et al., (2013) who argued that big data is a collection of data that is very complex or very large, and this data cannot be handled or processed using conventional technology systems.

Based on some of the opinions above, the writer can synthesize that Big Data is a collection of data or information that is very complex or large so that data is difficult and cannot be processed or handled anymore with traditional technology systems, but demands innovative and cost -effective forms of information processing.

B. Learning Concept

The essence of learning is a process, namely the process of organizing and managing the environment around students so that they can grow and encourage students to carry out the learning process. The teacher's role as counselor varies for many struggling students. Of course there are many differences in teaching, so that there are students who understand the topic quickly and there are students who understand the topic slowly. These two differences mean that teachers can design learning strategies that suit the circumstances of each student, especially during the current COVID-19 pandemic.

Experts define learning as follows:

1) Munif Chatib (2014), learning is a two-way process of transferring information between teachers (providers of information) and students (recipients of information).
2) Gagne and Briggs (1979), the concept of learning is a system designed to assist students in learning, which consists of a set of activities designed and organized to influence and support students' internal learning processes.
3) Warsita, learning is an effort to involve students in learning activities or activities that are taught to students.
4) Achjar Chalil, learning is a method of interaction activities between teachers, students, and learning materials in a learning environment.
5) Suganda, et al. (2004), learning is a translation of the word "teaching" which means internal education and external (outside) education. External learning, for example, comes from the teacher and is referred to as teaching. With external learning, the learning principle itself will become the learning principle
6) According to Law no. 20 of 2003, the definition of learning according to Law no. 20 of 2003 concerning the National Education System states that learning is a process of interaction between students and educators and learning resources in a learning environment.

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Based on some of the opinions of these experts, the writer can conclude that learning is a process of giving directions to students regarding information and knowledge, as well as the formation of attitudes and beliefs.

C. Instructional Media

Hamidjojo argues that the media is an intermediary or communication channel that is used to facilitate the delivery of messages from communicators to communicants. This opinion is in line with the views of Blacks and Horalsen which state that the media is a tool or means used to convey messages.

Media learning is a material or tool used as a link in the learning process. The concepts of communication, systems, and learning underlie the limitations of these learning media. Instructional media can be in the form of tools, materials, or circumstances that are used to clarify, enrich, or expand the message conveyed to students.

Various types of learning media can be grouped into several sections, such as print media, exhibition media, audio, visual, multimedia, and computers and networks.

1. Print media
   Print media is a medium that is simple and easy to obtain anywhere and anytime. The advantage of using print media is that it is easy to obtain, flexible, easy to carry everywhere, and economical. However, print media has difficulties, especially for students who are late or lazy to read, and do not have adequate initial knowledge.
2. Exhibition media
   Exhibition media have various types such as real objects and imitation objects, also have advantages and disadvantages of each in the learning process.
3. media audio
   Types of media that only involve students' senses of hearing, are relatively inexpensive, easy to obtain and use, flexible, and easy to carry everywhere.
4. Visual media
   Visual media is divided into 2 types, both non-projected and projected. Can translate abstract ideas into a realistic format and can be obtained easily. However, its use requires creativity in designing, developing and manipulating it according to the needs of students.
5. Multimedia
   Namely the incorporation of the use of text, images, animation, photos, video, and sound to present information. Multimedia is able to provide a rich learning experience with a variety of creativity and can be adapted to the abilities of students.
6. Computers and networks
   This media has formed a worldwide network. The use of computers and networks allows us to communicate with computer networks around the world and seek and obtain the various information and knowledge needed.

D. Zoom and Google Classroom as Learning Media

With current technological advancements it allows students to do online learning but students can still continue to discuss with their classmates while lectures are in progress. One of the distance learning that students can do is to use the zoom application. According to Fadhilah (2021), the zoom application is an application that can be used to communicate with many people without having to meet face to face and is not limited by time. Zoom learning can replace learning that is usually done in front of the class with learning that is done virtually through applications that can be accessed via the Internet. Zoom can be categorized as a long-distance communication medium in online learning which can be interpreted as a learning that allows lecture material to be conveyed to students via video conferencing, thereby helping students and lecturers to continue face-to-face interactions even though they are not in the same place (Feni, 2021). Additionally, according to Irawan (2021) the zoom application has several features that can help the learning process, namely the Video Conference, Audio Conference, Manage Participant, Share Screen, Record or recording and chat features. In using zoom, according to Jamilah (2021) there are several advantages and disadvantages. The advantages of using zoom are large room capacity, various features,

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being able to plan learning through features (schedules), can record and save videos during the learning process and more flexible learning time. Meanwhile, the drawback of using zoom is that when the first session only lasts 45 minutes (in the free method),

In addition to the zoom application, using Google Classroom is an option in helping the learning process in the current era of globalization (Harjanto & Sumarni, 2019). According to Mahardini (2020) Google Classroom is an online learning application that can be used in all fields of education and assists lecturers and students in creating, sharing and collecting assignments in the teaching and learning process. Google Classroom is connected to Google Drive, Google Docs, Google Sheets, Google Slides, Google Calendar so that it can be used for scheduling in submitting assignments (Isnainah et al., 2021). Thus Google Classroom can make it easier for lecturers and students to deepen the learning process because both lecturers or students can give assignments, collect assignments, and distribute tasks without any time and distance limitations. This makes learning more efficient and interesting so that time can be used productively (Safitri, 2021). Google Classroom provides several features, namely assignments, assessments, two-way communication between lecturers and students supported by Google Drive, program filing features, and Google Classroom application features which can be accessed using Android and Ios gadgets (Firariona, 2021). According to Munasiah et al., (2021) the advantages of using Google Classroom are that it has a fast setup process, saves time and distributes material fast. Meanwhile, the drawback of Google Classroom is that you have to be connected to an internet network, two-way communication between lecturers and students supported by Google Drive, program filing features, and Google Classroom application features which can be accessed using Android and Ios gadgets (Firariona, 2021). According to Munasiah et al., (2021) the advantages of using Google Classroom are that it has a fast setup process, saves time and distributes material fast. Meanwhile, the drawback of Google Classroom is that you have to be connected to an internet network, two-way communication between lecturers and students supported by Google Drive, program filing features, and Google Classroom application features which can be accessed using Android and Ios gadgets (Firariona, 2021). According to Munasiah et al., (2021) the advantages of using Google Classroom are that it has a fast setup process, saves time and distributes material quickly. Meanwhile, the drawback of Google Classroom is that you have to be connected to an internet network.

E. Big Data Connection (Data Raya) with the Zoom Platform and Google Classroom

Zoom and Google Classroom are two digital platforms that are often used to enhance learning, especially during the COVID-19 pandemic which caused many institutions and higher education institutions to migrate to distance learning. Online learning is learning that tries to reach a wide and diverse community through the use of the internet (Yanti et al., 2020). Here are some reasons why the Zoom and Google Classroom platforms are so important in driving learning:

1) Improving Learning Accessibility
   The Zoom and Google Classroom platforms have made learning easier and more flexible for students and teachers. Students can access classes from anywhere, anytime, on any device as long as they have an internet connection. This helps students who live far away or who do not have physical access to schools or institutions to continue their education. This Zoom Conference application allows video communication with anyone. The program integrates video conferencing, web conferencing, discussion and mobile collaboration to deliver teleconferencing services. This application is commonly used for long distance communication (Haqien & Rahman, 2020; Ismawati & Prasetyo, 2020).
2) Cost Savings
   Study expenses can also be reduced by using Zoom and Google Classroom. Students who use online platforms save money on transportation and living expenses that are often associated with education. In addition, because most resources can be accessed via the internet, using this platform can save on the cost of buying books and learning materials. According to research entitled "Using the Google Classroom Application as an Alternative in Online Learning" Google Classroom is a free application, so it is suitable for use in schools or universities with limited resources to develop the use of information and communication technology in the learning process .
3) Enhanced Social Interaction

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While remote learning can feel a bit isolating, the Zoom and Google Classroom platforms allow students and teachers to stay socially engaged. Zoom allows students to interact face-to-face in a virtual space, while Google Classroom allows teachers and students to share material and communicate in discussion forums. Using Zoom conferences as a learning medium really helps the learning process in terms of online learning. Many studies have shown that magnifying the learning process can result in video conferencing, which is used as a communication tool in online learning (Brahma, 2020).

4) More Interactive Learning
The Zoom and Google Classroom platforms allow for more interactive learning, mainly due to their flexible use. In Zoom, teachers can introduce different learning techniques such as breakout rooms for collaboration in small groups. While in Google Classroom, teachers can add videos, photos and links to their course materials to make learning more interesting and interactive. The Zoom Meeting application can make the teaching and learning process synchronized, because educators and students can communicate directly with each other, which facilitates the process of presenting subjects, besides that the Zoom Meeting application contains one menu, namely breakout rooms, which can be used in the learning process in groups (HA Alfadda and HS Mahdi, 2021).
5) Overcoming Time and Geographical Limitations
The use of the Zoom and Google Classroom platforms can also overcome time and geographical limitations in learning. With an online platform, students and teachers need not be tied to a specific time or location. This allows students and teachers from all over the world to interact and learn together. Google Classroom and Zoom Meeting are learning spaces that can facilitate teacher participation and the categorization of each assignment only without paper, making it easier for teachers and students to organize teaching materials, assign assignments, and discuss learning materials that can be done anytime and anywhere (Mayasari et al., 2019).

In conclusion, the Zoom and Google Classroom platforms are very important in supporting learning because they increase learning accessibility, cost savings, enhanced social interaction, more interactive learning, and overcome time and geographical constraints. This platform is also very important in helping to overcome the problems faced during the COVID-19 pandemic and assisting schools and universities in maintaining high educational standards.

The use of the Zoom and Google Classroom platforms as learning supports has an important connection with the data highway. In the context of distance learning, data is very important because it forms the basis for decision making and learning evaluation. The use of the Zoom and Google Classroom platforms as learning supports has an important connection with highway data because they can assist in collecting learning data, analyzing learning data, evaluating learning, developing learning models, and developing learning systems. This data is very important in assisting decision making and learning evaluation, as well as in developing better and more effective learning models and systems

F. Effectiveness of Zoom and Google Classroom Implementation as Online Learning Media

Sary Sukawati's research (2021) entitled Utilization of Zoom Meetings and Google Classroom in Lesson Study-Based Learning Innovation Courses concludes that the effectiveness of using the GCR application and zoom meeting does not reach 100%. There are still those who choose answers that are hesitant about the usefulness of the GCR and Zoom Meet applications. If averaged for the value of usefulness, the number that 'strongly agree' is 13.5%, the number that 'agree' is 57.5%, feels 'doubtful' is 25%, and 'disagree' is 4%. As for the constraints, 44% answered 'agree'. Students agree that signals, quotas, and several features are obstacles during lectures.

Based on the results of the questionnaire conducted, it is concluded that the use of the GCR and Zoom Meeting applications has not yet reached an optimal level of usefulness. Although the majority of respondents agreed that the application was useful, there were still some respondents who doubted its usefulness.

In terms of percentage, around 71% of respondents agreed that the application was useful, with details of 13.5% strongly agreeing and 57.5% agreeing. However, about 25% of respondents feel doubtful

about the usefulness of the application. Therefore, it is necessary to carry out further evaluation to determine the factors that cause uncertainty in the use of the application.

In addition, it was found that around 44% of respondents agreed that problems in using the application were something that was often encountered. These obstacles include signals, quotas, and several features that don't function properly during the Innovation Course course. Therefore, it is necessary to do proper handling in overcoming these obstacles so that the learning process can run smoothly.

In this case, efforts are needed from the tertiary institution to improve and improve the quality of the internet network and technological infrastructure that supports the distance learning process. In addition, it is also necessary to conduct socialization and training for students regarding the use of the GCR and Zoom Meeting applications so that students can maximize their use in learning.

In conclusion, the use of the GCR and Zoom Meeting applications in distance learning is currently still faced with several obstacles. However, with proper evaluation and handling, it is hoped that it can increase the effectiveness of using these applications in the distance learning process in the future.

4. CONCLUSION

Data is a collection of facts or statistics that can be analyzed for reference. Big Data is a complex and large amount of data that requires innovative and cost-effective processing. Learning is the process of giving directions to students about information and knowledge, and media is the tool used as a link in the learning process. Learning media can be categorized into print media, exhibition media, audio, visual, multimedia, computers, and networks. Zoom and Google Classroom are options for virtual learning in the era of globalization. Using multimedia, computers, and networks can enhance the learning experience by providing alternative methods of instruction. In summary, technology has become an integral part of the learning process, and educators must adapt to these changes to ensure the effectiveness of teaching and learning.

Here are some reasons why the Zoom and Google Classroom platforms are so important in supporting learning: Increasing Learning Accessibility, Cost Savings, Enhanced Social Interaction, More Interactive Learning, Overcoming Time and Geographical Barriers. The use of the Zoom and Google Classroom platforms as learning supports has an important connection with highway data because they can assist in collecting learning data, analyzing learning data, evaluating learning, developing learning models, and developing learning systems.

However, based on the analysis of the questionnaire data, it can be concluded that the use of GCR and Zoom Meeting applications for distance learning has not yet reached an optimal level of usefulness, although the majority of respondents agree with their benefits. Constraints such as signals, quotas, and some features that do not function properly still remain as problems. Efforts from higher education institutions are needed to improve the quality of technological infrastructure and provide socialization and training to students in using these applications. It is expected that with proper evaluation and handling, the effectiveness of using applications in the process of distance learning can be improved in the future.

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