

Strategic Analysis Of Tools/Media Combination For Distance Learning In English Mathematic

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ABSTRAK

The distance learning process combines the principles of the learning process with technology. (Chandrawati, 2010), as well as a learning system that is used as a means for the teaching and learning process which is carried out without having to meet face to face between teachers and students (Ardiansyah, 2013). In e-learning, content is the most important thing that underlies the success of the learning process on internet media, apart from interaction content between users, it is also really needed as a substitute for the face-to-face process, content or teaching materials which on the internet can be in the form of text and presentations, but text content it is felt that it is still inadequate in meeting learning needs, another problem is that the content that is mostly used in the form of text or presentation slides has very minimal interaction so that some lessons, especially practical ones, will be more difficult to convey.

The implementation of multimedia in distance learning will further improve the quality of e-learning because the problem with e-learning is that the content cannot explain the learning material because in general the content in e-learning only contains slides and material in PDF format which is less attractive.

Kata Kunci: Tools Combination, English Mathematic, University Students, Online Learning.

PENDAHULUAN

One of the compulsory subjects that students taking mathematics education must take is English Mathematics. The aim of this course is to help you learn accurately and precisely the equivalents of English words and terms used in mathematics. This is because general English is different from scientific English, which includes mathematics.

Additionally, the English Mathematics Lectures have several goals. First, you will be able to understand foreign reference books. Some of the mathematics textbooks used as reference for mathematics lectures are written in English, especially if you wish to continue your studies at graduate level. The textbooks recommended by the instructor are basically English textbooks. This is because many mathematicians and scientists come from the West, and the number of translated books is still limited. Therefore, if students do not understand the English equivalent of mathematics, they will have difficulty understanding the material and solving the mathematics problems in the book. Furthermore, if student teachers wish to continue their postgraduate studies abroad, they will need a thorough and accurate knowledge of English mathematics.

The impact of today's technology is very rapid and has the potential to positively impact any field. The use of technology in education also has a positive impact on classroom learning. The educational technologies used in learning facilitate student interaction in both face-to-face and non-face-to-face classes. Oemar Hamalik believes that the use of media in the teaching and learning process creates progress and new interests, creates motivation and stimulation for learning activities, and even has a psychological impact on students (Arsyad, 2003), thereby said to improve their learning ability. Solve mathematical problems (Yunita & Wijayanti, 2017; Widodo & Ikhwanudin, 2018).

As a rule, personal conversations must take place in the teaching and learning process. Because without personal encounters, the teaching and learning process will

definitely be difficult. Rapid developments in technology are slowly but surely starting to change this paradigm. Thereby, the teaching and learning process no longer needs to be limited to the classroom, learning can take place without face-to-face meetings and anywhere known e-learning.

Learning media as mediators of information transfer in the learning process. Learning media refers to anything that can be used to convey a message (learning material) in a way that can stimulate students' attention, interest, thinking, and emotions in learning activities in order to achieve specific learning goals (Ibrahim, et al, 2000; Widodo, 2018).

In various definitions, distance learning is an educational system or concept that uses information technology in the teaching and learning process. Learning is organized around the use of electronic or computer-based systems in such a way that they can support the learning process (Michael, 2013). In another sense, the distance learning process is a combination of learning process principles and technology (Chandrawati, 2010) as well as a learning system used as a vehicle for teaching and learning processes carried out without face-to-face interaction between teachers and students (Ardiansyah, 2013).

The research objective of this article is to analyze effective and cost-effective strategies for using a combination of distance learning tools/media in mathematics courses. The purpose of this study is to provide recommendations for the implementation of distance learning in mathematics classes, particularly in mathematics instruction courses. The purpose of this study is to address the challenges and limitations of online learning during the COVID-19 pandemic and provide practical solutions to improve the quality of mathematics education in a cost-effective manner.

METODE PENELITIAN

Descriptive research method using quantitative analysis. Approach This study consists of her three phases: adaptation of the research instrument, data collection

process, and analysis of the findings. The outcome of these stages is recommendations for relatively low-cost implementation strategy tools for implementing distance learning in English mathematics courses. The study itself was conducted for second-year students (5th semester) in the 2021/2022 academic year. These students were selected as study subjects because distance learning has been facilitated since their studies in the Mathematics degree program at Nadlatul Ulama Pasuruan University. The instrument used in this study was a closed-ended questionnaire distributed via a Google Forms link. This questionnaire was adapted from one of his questionnaires by Utomo, M. N.Y.et al. (2020). Adopting the developed equipment. There were a total of 10 questions from his two groups about (1) networks and internet access, and (2) distance learning equipment. Adjustments were made by adding some science learning questions. Customized equipment is verified by experienced validators. Input from validation experts is used as the basis for modifying and perfecting the instrument used as a data collection tool. Data were collected using samples determined by simple random sampling. The minimum number of samples is determined using the Slovin equation. A link to the Google Form leading to the survey questions will be shared with each class via a WhatsApp group. The data were then analyzed qualitatively and quantitatively. Qualitative analysis is used to map the types of tools or combinations of tools used to deliver distance learning. Quantitative analysis was performed using descriptive statistics in the form of percentages. The results of the data analysis are visualized in the form of bar graphs using MS. Excel.

HASIL DAN PEMBAHASAN

Based on interviews, surveys, and observations regarding learning tools/media used in distance learning English Mathematics courses. Based on the survey results, students' responses to the different online tools used and the cost of distance education were shown. Therefore, we recommend using a combination of all three online learning tools. The combination of these tools is UNU E-Learning, WA, and Google Meet. The features of this tool in learning are tasks, tests and exams, namely

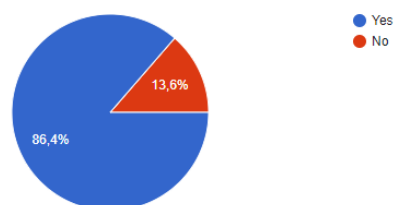
UTS and UAS. WA acts as an online discussion forum and provides lecture information through a chat menu. Google Meet is currently being used to facilitate online personal learning through vicon.

The mix of media we recommend differs from that recommended by Utomo, M.N.Y.et al.(2020), Google Classroom was replaced by e-learning as research showed that LMS-based media had higher quality (Figure 1).

On the other hand, LMS-based online media also has its advantages. These include automating and centralizing the management of online learning activities such as registration, delivery of learning materials, and tracking and reporting of student learning progress (Ferdianto et al., 2018). Some of these benefits make students have a positive attitude toward online learning (Yildiz, Tezer, and Uzunboylu, 2018). Process aspect learning can increase learning autonomy and active participation using distance learning implementation (Brian Chen, Kathy Huang, Gribbins, & Swan, 2018). In terms of mathematics learning outcomes, it has been empirically proven that the use of Moodle-based LMS is suitable for promoting students' creativity. This is because LMS allows teachers to quickly and flexibly manage learning and exchange information with students (Gunawan, Sahidu, Susilawati, Harjono, & Herayanti, 2019). Furthermore, using her LMS as an online learning medium also has a positive impact on students' learning engagement, information literacy, and academic performance (Avcı & Ergurine, 2022).

Apakah kampus Anda sudah menyediakan sistem e-learning yang baik?

22 jawaban



Another difference is that Zoom has been replaced by Google Meet. This is related to the survey result in which 100% of students said that the tool commonly used by Vicon instructors is Google Meet (Figure 2a). On the other hand, using Google

Meet as an online learning medium has positive effects. (1) Best Vicon applications. Students are satisfied with class management, and the process is recordable, easy to use, flexible in time, and accessible anywhere as long as it exists, which increases their interest in learning. Internet access (Minhas, Hussain, Ghani, Sajid, & Pakistan, 2021; Septantiningtyas et al, 2021) and (2) are effective and facilitate learning during distance learning and make it easier for instructors and students during learning. (Guntur Gunawan, Kristiawan), Risdhianto and Monica, 2021; Nasution, Nandyant and Department, 2021). We chose WA because it is the most used compared to other social media (Figure 2b).



Barriers to online learning such as uneven network stability/internet connections, insufficient internet quota, lack of ICT literacy among some lecturers and students, and boredom in online learning. (Indrawati, 2020). In the results of this survey, some students have a fairly fast internet connection. (figure 3).



This difference in internet speed is caused by uneven infrastructure in each region. Mathematics Education students come from different areas, especially from Pasuruan but are spread throughout different districts/cities. Another factor is because of the differences in providers used by students. (Figure 4a), but most students use quota (cellular data) more compared to dedicated internet such as wifi (Figure 4b).

Apakah ada kebijakan(Paket gratis/Kuota/WiFi gratis) untuk mendukung pembelajaran jarak jauh
22 jawaban

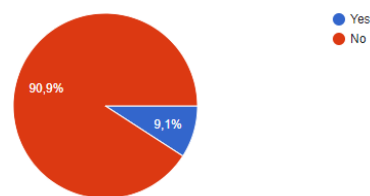


Figure 4a.

Apa tipe provider internet yang Anda gunakan?
22 jawaban

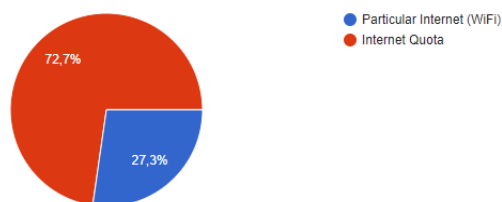


Figure 4b.

Strategies that recommend using a combination of tools/media take into account not only the effectiveness aspect, but also the cost reduction aspect. During implementation, we recommend minimizing the use of Google Meet as a Vicon medium for teaching theory. This recommendation is based on the findings that 90.2% of UNU Pasuruan Mathematics Education students reported that the cost of implementing distance education is relatively high. For this reason, many students may be dissatisfied with distance learning. Vicon is the biggest consumer of Internet quota, so you should reduce its usage, except for things that are really important and he can't run without Vicon.

The results and discussion in this journal are as follows:

1. Research recommends using a combination of online tools/media such as e-learning platforms, WhatsApp and Google Meet for effective and cost-effective distance learning in mathematics courses.
2. This study highlights the challenges of limited internet access and high costs associated with distance learning, which can lead to student disengagement from distance learning.
3. Unequal distribution of internet infrastructure and the use of different internet service providers can lead to differences in students' internet speeds, which must be taken into account when planning and implementing distance learning strategies.

KESIMPULAN

The conclusion of this work is that a combination of online tools/media such as e-learning platforms, WhatsApp and Google Meet is recommended for effective and cost-effective distance learning in mathematics courses. This recommendation takes into account the challenges of limited internet access and the high cost of distance learning and encourages active learning and the development of mathematical process skills. The research highlights the need for strategies that address the limitations and challenges students face in terms of Internet access and costs to improve the quality of distance learning in mathematics education.

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