JISTE (Journal of Information System, Technology and Engineering)
Volume 1, No. 1, pp. 1-5
E-ISSN: -
http://gemapublisher.com/index.php/jiste
Received: 16-05-2023
Accepted: 17-05-2023
Published: 17-05-2023

The Effectiveness Analysis of Distance Learning by Optimizing the Use of Information Technology

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Abstract

In this study, the IS Success Model is used to analyze data on the use of information technology for distance learning during a pandemic in schools in order to determine the factors that influence the application of e-learning in remote learning systems. This study employed a quantitative approach to identify the elements that influence the effectiveness of using technology in distance learning activities. Data collection and data analysis procedure is needed for this research because this research uses quantitative approach to the problem. With respect to the research approach, researchers use methods, analytical techniques, and tools appropriate to the approach quantitatively to get precise results. The research has been successful in examining how information technology is employed in distance learning activities using the Delone and McLean models. As a result, it is possible to make the following conclusions: Google Classroom is the second most widely used program for use in remote learning activities after Zoom. Users' happiness with the usage of apps is influenced by information quality, service quality, user characteristics, and system use in this study.

Keywords: distance learning, school, learning activities, application.

INTRODUCTION

People's lives are being disrupted by the Covid-19 pandemic. Daily activities carried out outside the home must be stopped due to Covid-19. Maintaining a safe distance or what is called physical distancing needs to be done by the community every time they do it activities including work. All necessary activities will be impacted by the government's advise to conduct activities at home, including those involving teaching and learning. Learning that is done at home is unquestionably different from learning that is done in a classroom; this learning requires high-quality supplementary materials to help pupils learn and comprehend the subject matter (Abidin, 2016). It is preferable to use inexpensive, straightforward, and effective media rather than more expensive or current technology that makes teaching and learning more challenging. Online learning can be done with applications such as WhatsApp groups, Google Classroom, and so on, so that there is more time between teachers and students carrying out activities. The WhatsApp application can be used in online learning, because the application can send text, sound, and various kinds of images and videos for learning (Agourram, 2009). Then Google Classroom, has the same function as WhatsApp, but this application is often used to send assignments so that the documents left are neatly

arranged. Meanwhile, Zoom and Meet are designed for conduct online meetings so that teachers can see students while providing learning (Efendi, 2020). Consideration must be given to online learning's connectivity or internet network as well as other facilities in order for implementation to be successful. Three crucial elements of online learning are technology, teacher traits, and student characteristics. Online learning must be applied in the same way that it is in traditional classrooms; this calls for careful preparation and assessment. One can understand the value and efficacy of IT management and investment by measuring the success of information technology. While the system is in operation, measurements are taken to determine whether the intended use is still appropriate (Asmara, 2015).

By examining the issues faced by teachers and students, Delone and McLean's methodology can be used to determine whether a distant learning system has been implemented successfully (Delone & McLean, 1992). The information quality variable can be used to evaluate issues with information sharing during learning, the system use variable can be used to evaluate students' system use issues, and the system quality variable can be used to evaluate network disruptions that impair learning (Chang, 2013). When evaluating the effectiveness of an information system, each success variable is interconnected, therefore success cannot be assessed using just one variable. so that in success analysis, each variable is viewed as a distinct element. The results of the analysis show that user satisfaction has a considerable and positive impact on net benefits, and that user happiness has a positive and significant impact on system quality, information quality, and service quality (Parinussa et al., 2023). Prior researchers have conducted studies on the Zoom application-based learning system, and this study indicated that system quality, information quality, and service quality are all factors that positively influence user satisfaction (Nugroho et al., 2023). User satisfaction, however, has a favorable influence on net benefits. In this study, the IS Success Model is used to analyze data on the use of information technology for distance learning during a pandemic in schools in order to determine the factors that influence the application of e-learning in remote learning systems.

METHOD

This research was conducted using a quantitative approach to analyze the success rate of using technology in distance learning activities, and knowing What factors influence this success? Data collection and data analysis procedure is needed for this research because this research uses quantitative approach to the problem. With respect to the research approach, researchers use methods, analytical techniques, and tools appropriate to the approach quantitatively to get precise results. Every topic chosen from the general population is done so specifically in accordance with a set of goals and requirements. The Insan Pratama Balaraja Islamic Boarding School's middle and high school pupils were the only ones surveyed for this study. It was chosen because, in terms of character, children in junior and senior high schools can learn more successfully about what needs to be done when using technology than can students in primary schools, who still require full parental supervision. This study examines the Net Benefit of using technology in distance learning activities using the DeLone and McLean model, which comprises six factors for system quality, information quality, service quality, system use, and user satisfaction. Researchers incorporated user characteristics-related variables in this study. These characteristics were used to help determine the best course of action for increasing system adoption.

The relationship between system quality and system utilization can be illustrated by the efficacy, efficiency, and performance quality of decisions. The development of a system that can successfully satisfy user pleasure is important and necessary, and this relationship between system quality and user satisfaction can be described as such. Because the quality of

organizational information is so important, it is critical to ensure the quality of information shared with the public. This also happens in distance learning systems. Information quality is greatly influenced by the individuals in the system, as well as information sources, ease of access, and simplicity of understanding. The efficiency of adopting e-learning for learning is greatly influenced by the quality of the material available, which also influences user happiness and system usage. Quality of service in a learning system can enable interaction between students and instructors in terms of ease of use, speed, accuracy of material, and most importantly accuracy. When the quality of service is achieved, the system can continue to be used. Users have a key role in the success of e-learning apps. In order to use the system effectively, users' quality can affect how they use it. Convenience and user confidence will be added values that affect how well the system is used and how satisfied users are with it. After a system is installed, its usage serves as a gauge of its effectiveness. The use of the system has an impact on what is given or obtained by the user when utilizing the system. The use of information technology also has an impact on user satisfaction.

RESULT AND DISCUSSION

The researcher uses this step to conduct a pilot study, which is also known as a pilot study. This step is used to test whether the survey participants can understand the study indicators, so that when the survey is released, the findings are not disappointing. This pilot study uses 50 original respondent data that meet the research sample requirements. The pilot study is designed to assess reliability which reflects the degree of indicators used to represent the ideas being tested. There are several literatures that describe statistical testing based on surveys using pretests in verifying research models. If the composite reliability value is greater than 0.6 and the average variance extract (AVE) value is greater than 0.5, the pilot study is considered to have a high level of reliability. The results of the pilot study conducted can provide a reference for the author to improve or change the questionnaire indicator questions that have low cross loading values and low discriminant validity values. The demographic analysis stage is used to provide demographic information about the respondents' attributes from the pretest.

The data shows that the ratio of the number of women and men who were respondents in the pilot study was the same, namely 25 each person. Then the age of the respondents was dominated by the age of 15-20 years by 60%. Respondents selected in this pilot study were entirely students, with the most frequent use of distance learning applications being the Google Classroom application as much as 54%. The pilot study is to assess the level of reliability and validity of the questionnaire used, as well as the results of the hypotheses tested in this study. The pilot study that was conducted on 50 people consisting of 25 men and 25 women had quite good outer loadings results. The results of the Composite Reliability (CR) score are categorized as good because it has a value above 0.7 and the Average Variance Extracted (AVE) value is also categorized as good with a value above 0.5. The results of this pilot study became input for the authors when distributing questionnaires by clarifying questions that were not understood by the respondents. The responses of respondents to the statements provided, as well as the traits of respondents and users of distant learning programs, were tested during this analytic stage. The objective is to offer demographic information on the characteristics of the respondents as well as the number of application successes.

250 questionnaires were given out by the researchers, but only 236 of them were returned, making the total number of respondents in the data they collected 236. Gender, age, the frequency with which you use technology, and the length of time you have been online are the types of demographic data that are generated. The results of the structural model

analysis conducted indicate that there is a substantial association between System Quality (SQ) -> System Use (SU), with a path coefficient value of 0.232, indicating that SQ has an impact on SU. Based on the findings of the structural model analysis, it can be concluded that there is no relationship between System Quality (SQ) -> User Satisfaction (US), as indicated by the path coefficient value of 0.063. According to the findings of the structural model study, there is a correlation between Information Quality (IQ) -> System Use (SU), and the link has a path coefficient value of 0.185, indicating that IQ has an impact on SU. Based on the fact that happened, the teachers still have difficulties in processing the learning material that will be delivered to the students. So that the quality of information that should be conveyed easily using the application is hampered. The students also found it difficult to share information. Since the application must still be used for learning activities even when the information received is not as excellent as during face-to-face learning, it may be argued that the perceived quality of the information does not affect the use of the system.

According to the findings of the structural model study, there is a strong association between Information Quality (IQ) -> User Satisfaction (US), with a path coefficient value of 0.147, indicating that IQ has an impact on US. Then the t-statistic value of the relationship is 1.995 at a significance level of 5%. So that it can be ascertained that the IQ -> US hypothesis can be accepted. According to the findings of the structural model study, the relationship between System Service (SEQ) -> System Use (SU) has a path coefficient value of 0.193, indicating that SEQ significantly affects SU. Then the t-statistic value of the relationship is 2,714 at a significance level of 5%. So, it can be ascertained that the SEQ -> SU hypothesis can be accepted. These findings are in line with other research that found a connection between service quality and system utilization. Users' interest in utilizing the system will rise if the system provides good service. According to the findings of the structural model study, there is a substantial association between System Service (SEQ) -> User Satisfaction (US), with a path coefficient value of 0.160, indicating that SEQ has an impact on US. Then the t-statistic value of the relationship is 2,832 at a significance level of 5%. So, it can be ascertained that the SEQ -> US hypothesis can be accepted. These findings are in line with earlier studies that found that user happiness is positively impacted by service quality. Users will feel content utilizing the system if they receive good service. According to the findings of the structural model study, there is a significant correlation between user characteristics (UC) -> system use (SU), with a path coefficient value of 0.326, indicating that UC has an impact on SU.

Then the t-statistic value of the relationship is 4.217 at a significance level of 5%. So, it can be ascertained that the UC -> SU hypothesis can be accepted. These findings are in line with earlier studies that found user characteristics had an effect on information system success factors, such as system utilization. According to the findings of the structural model study, there is a substantial correlation between user characteristics (UC) -> user satisfaction (US), with a path coefficient value of 0.308 indicating that UC has an impact on US. Then the t-statistic value of the relationship is 3.643 at a significance level of 5%. So, it can be ascertained that the UC -> US hypothesis can be accepted. These results are in accordance with previous studies which state that the variable user characteristics influences user satisfaction. According to the findings of the structural model study, there is a substantial correlation between System Use (SU) -> User Satisfaction (US), with a path coefficient value of 0.280, indicating that SU has an impact on US. Then the t-statistic value of the relationship is 3.305 at a significance level of 5%. So, it can be ascertained that the SU -> US hypothesis can be accepted. According to earlier study, system utilization has an impact on user happiness, which is supported by these findings. Customer satisfaction also rises as system usage does. The System Use (SU) -> Net Benefit (NB) link has a path coefficient value of 0.526, which indicates that SU significantly influences NB, according to the findings of the structural model

analysis that was conducted. As a result, the relationship's t-statistic value is 5.709 at a 5% level of significance. We can therefore conclude that the SU -> NB theory is plausible. The use of the system has a beneficial impact on the perceived net benefits, according to these findings, which are consistent with earlier study.

CONCLUSION

Google Classroom is the second most widely used program for use in remote learning activities after Zoom. Users' happiness with the usage of apps is influenced by information quality, service quality, user characteristics, and system use in this study. User satisfaction with application use in this study is influenced by information quality, service quality, user characteristics, and system use. In this study, the factors that influence users' use of the application include system quality, service quality, and user characteristics. The effectiveness of information technology in remote learning is not influenced by the relationship between system quality and user satisfaction, nor by the relationship between information quality and system utilization. It is possible to keep track of the variables that influence how effectively information technology is used for upcoming studies. One might analyze the metrics they have for the information quality variable's impact on system utilization and the system quality variable's impact on user satisfaction.

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