



# Optimization of Learning Through E-Learning Applications in The Covid-19 Pandemic

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**Abstract.** Education is a conscious effort to develop personality, guide the abilities and education of students, both formal and non-formal. Currently, education in Indonesia is entering the 4.0 era, technological developments during the Covid-19 pandemic have become business opportunities, including in the field of education such as tutoring (BIMBEL). This study aims to analyze the optimization of learning programs through the Zenius e-learning- based application which is often used by students, especially during the Covid-19 pandemic , where this is one of the implementations of using technology as an educational tool developed through e-learning . This study uses a literature study method obtained from journals, and other supporting data from various studies and research results that are relevant to optimizing the Zenius application. The results of this study are that it can be seen how optimal the procurement of e-learning sites is as a means to maximize distance learning for students, especially during the current Covid-19 pandemic . This can be known through the process of studying literature through digital media which will be carried out by the public in order to get the desired results regarding the platform of the e-learning . The benefits of this research include being able to review how optimal the e-learning platform is to facilitate students in maximizing distance learning during pandemic conditions like today, so that it can be seen to what extent it is running quite optimally. Thus, the conclusion of this study is that by utilizing technology to maximize distance at this time is effective, because with the existence of sites or renewable features regarding e-learning, it can make the teaching and learning process can be carried out without being constrained by space and time.

**Keywords:** E-Learning, Applications, Covid-19 Pandemic

## 1. Introduction

The World Health Organization (WHO) has declared Coronavirus Disease 2019 (COVID-19) a global pandemic [1]. The pandemic caused by Severe Acute Respiratory Syndrome Coronavirus 2 or SARS-CoV-2 (Li et al. countries around the world. The death rate from this disease significantly reaches hundreds of thousands of people [2]. As a result, the COVID-19



pandemic has affected several fields such as economics, social, and psychology [3-5]. Countries around the world have experienced economic stress and population problems in terms of disruption as a result of layoffs, production and distribution of goods, collapse of the tourism sector to declining livelihoods. On the one hand, the country must implement a frugal lifestyle, but on the other hand it requires large funds to deal with COVID-19 [4]. The developmental trends of COVID-19 have taken the public institutions seriously [5], as well as the impact of the world's education system [6]. Many countries have temporarily closed their educational institutions to prevent the transmission of COVID-19. As of April 2020, more than 421 million students have been granted days off and studying at home. More than 180 countries have implemented national shutdowns, affecting approximately 97% of students worldwide. In addition, several countries have also implemented local closures that impacted millions of students [7]. Educational institutions close their physical schools or campuses and online course delivery [8].

The virus outbreak that has hit various countries around the world is an outbreak that originated in the Chinese city of Wuhan. The spread of the corona virus or what we usually call the covid-19 virus entered Indonesia from the beginning of 2020 until now. The spread of COVID-19 creates new threats to various sectors of life, be it the social, economic, and educational sectors. Efforts to control and prevent the spread of the covid-19 virus are carried out by limiting interactions that invite crowds and maintaining physical distance from each other, without us doing all activities from home including learning. In a pandemic situation, the government requires learning to be implemented using a distance learning system (PJJ), teachers teach from home, changes to face-to-face learning in schools are stopped, students are given holidays and teachers work from home [9]. The digital learning system or E-learning is one of the ways used to reach all students or students in learning [10]. According to Sari [8] education is to develop personality, develop children's abilities and education, both in formal education and non-formal education. Currently, education in Indonesia is entering the 4.0 era [9]. Technological developments during the COVID-19 pandemic have become business opportunities, including in the field of education such as online tutoring (BIMBEL), one of which is "Zenius" which is less attractive to students but is now the opposite. The "Zenius" application is one of the online services in the field of technology education, in this Zenius application it contains more than 80,000 learning videos ranging from Elementary School, to High School or Vocational Schools that have been adapted to the curriculum. The video tutorials on Zenius are sourced from specially recruited teachers or presenters.

There are several studies that discuss learning through e-learning [9-11]. This study aims to examine how a digital learning system, or e-learning, is used by examining the statistical data of users of widely used pilot education applications. Therefore, based on the studies above, it can be said that during the Covid-19 pandemic, the use of learning media through e-learning applications was widely practiced.

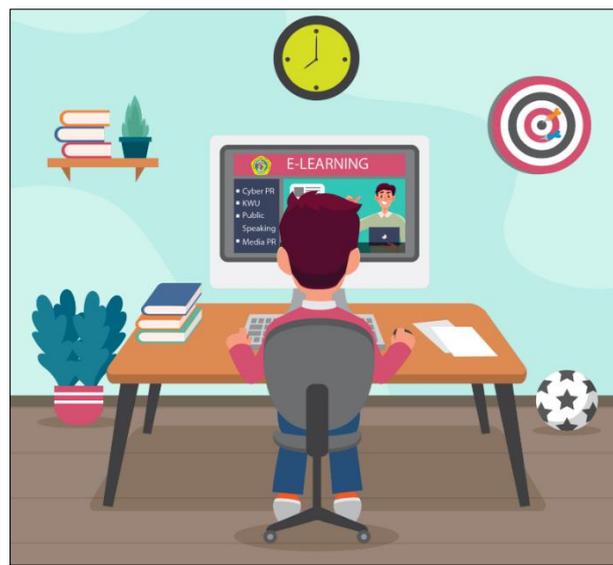
The purpose of this study is to analyze the optimization of learning programs through the Zenius e-learning-based application, which is often used by students, especially during the covid-19 pandemic. This study uses a literature study method obtained from journals, and other supporting data from various studies and research results that are relevant to optimizing the Zenius application.

## 2. Method

The research method uses a descriptive method. Descriptive research is research that seeks to describe current problem solving based on data, by presenting, analyzing, and interpreting it. The technique of collecting data and information is through literature study. Data collection is carried out by reviewing the results of similar research, which have existed before and reviewing the Zenius application. Data analysis was done descriptively and presented it descriptively.

## 3. Results and Discussion

Figure 1 explains about e-learning, E-learning has been established as a new phenomenon and even before this pandemic, e-learning had a significant presence in the education industry. Technology has changed the way education used to be traditionally obtained through digital platforms and intelligence. E-learning is covered in the larger term of technology-based learning through websites, learning portals, video conferencing. Currently; E-learning enhances students' knowledge, skills of industry professionals and executives through the internet).



**Figure 1.** E-Learning

E-learning is an educational system or concept that utilizes technology and information in the learning process. The E-learning is as follows according to various sources:

1. Learning that aims to use an electronic or computer system so that it can support the learning process.
2. Distance learning process by combining principles in the learning process with technology.
3. The learning system used as a means for the teaching and learning process is carried out without having to meet face-to-face between teachers and students.

The purpose of E-Learning is to increase students' absorption of the material being taught, increase students' active participation, improve independent study skills, and improve the quality of learning materials. It is hoped that the growth of new student innovations in

accordance with their respective fields. E-learning is a relatively new learning alternative to support the success of the teaching and learning process by using various information technology facilities, such as technology both hardware and software, computer technology such as local area networks and wide area networks, and telecommunications technology, such as radio, telephone, and satellite.

One part of e-learning activities that utilize internet facilities is distance learning, a learning process, where lecturers and students are not in the same classroom directly at a certain time; This means that the teaching and learning process is carried out remotely or not in one class. This supports continuous learning, meaning that students can study at any time, both day and at night, with no time limit for meetings. The various opportunities mentioned above are still facing challenges, both from the readiness of information technology infrastructure, the community, and regulations that support the sustainability of e-learning. Briefly discuss the opportunities and challenges of e-learning media, such as voice mail, audiotape, audio conferencing, e-mail, online chat, web-based education, videotape, satellite video conferencing, and cable or broadcast television (See figure 2).



**Figure 2.** Zenus

Figure 2 above is the logo of the Zenius Education application. Zenius Education is an online learning application that has been established since 2007, now has the Zenius App. Zenius application is a complete, practical and affordable learning application. In this application, there are more than 80,000 learning videos and hundreds of thousands of practice questions that can be downloaded along with their discussions. In addition, the Zenius application is more quota-efficient when compared to Youtube or other platforms whose content is in the form of videos. Users of this application can access the application anywhere so that it is practical to carry and study again at any time if students want to remember learning again. In addition to students, the Zenius application also provides various trainings for teachers to be able to use the Zenius application well. Teachers are given tips and exercises to make teaching easier. Not only learning materials, students and teachers are also given motivational videos so that every learning activity is interesting and gives enthusiasm to study boldly anywhere, and anytime, especially at home because of the Covid-19 pandemic (Figure 3).

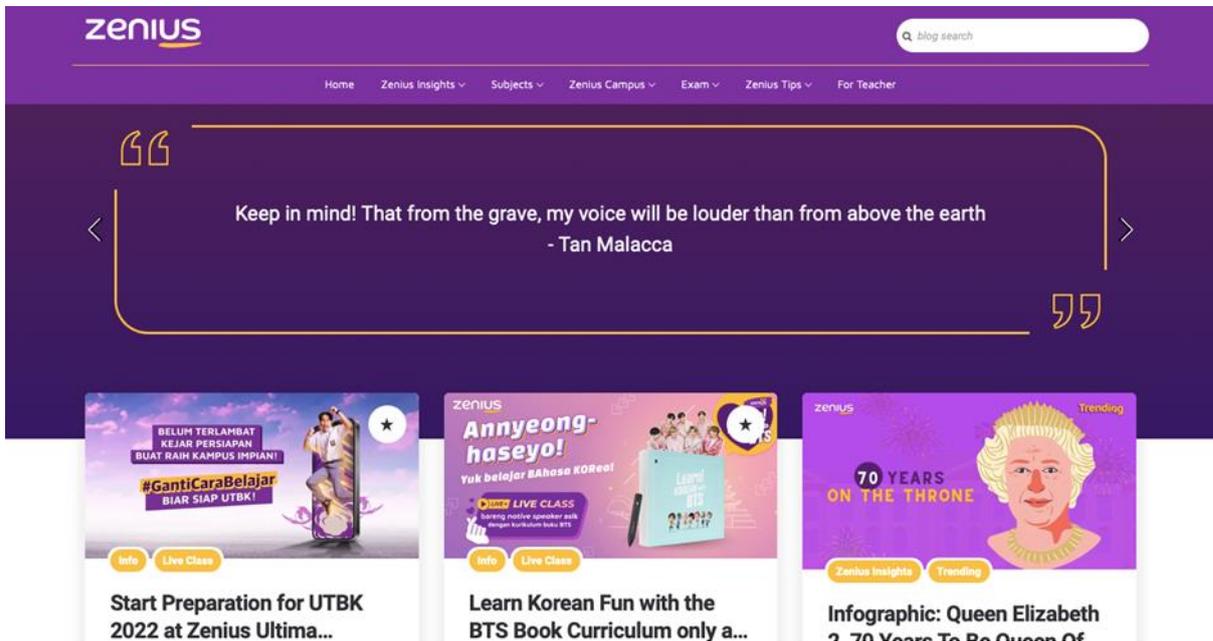


Figure 3. Zenius Home and Options Page Display

In Figure 3 above is the display when opening the Zenius page. The first time the user opens the Zenius application, the user will be asked to select his education status. In this view, the user is asked to select the school level, major, curriculum and class being studied. The school levels consist of SD, SMP, SMA and SMK. While the majors depend on the level chosen, for high school itself consists of majors in science, social studies and language. In the curriculum there is a revised KTSP, K 13, and K 13 curriculum. Then after selecting the education status, the user will enter the home page. Where on the page there is a choice of subjects that you want to study and consists of many exam preparations for users who want to enter college. in the picture above is class XI at the high school level, included in the 13 revised curriculum (See figure 4).

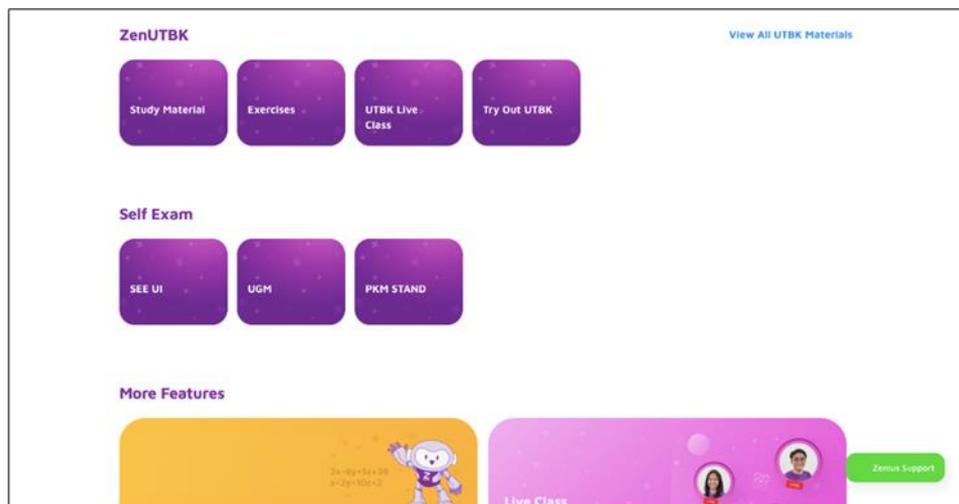


Figure 4. Display of Materials in the Zenius Application

This display will appear after pressing the choice of sociological subjects on the home menu. In this view, the material in the subject to be selected is displayed and the user can choose which material to study. In some of the existing materials, there are several videos that can be accessed and studied by users. Zenius is also equipped with preparations for the National Examination (USBN + UNBK), SBMPTN, and the Independent Examination for Higher Education. Broadly speaking, Zenius products are divided into 3, namely:

- The Zenius website, which contains learning videos, practice package questions that can be downloaded for free, covers all elementary, junior high, high school subject matter, discussion of National Examination questions, SBMPTN, and various Independent Screening Examinations to enter PTN.
- Zenius App, an online learning application based on Android. Contains learning videos, practice questions packages that can be downloaded for free, as well as interactive practice questions to test your abilities and understanding.
- Zenius Prestasi, is a product specially designed for teachers and schools that can be installed on the local school network. Zenius Prestasi contains applications that make it easy for teachers to design the exam process in a practical way. From the manufacturing process, the implementation of the CBT exam, the correction process, and the evaluation process, everything can be automated digitally. In addition, Zenius Prestasi also provides videos of school subject matter that have been adapted to 3 variants of the Indonesian curriculum.

With this free application, it is easier for students to take part in math lessons without any payment from the application. Students can see features in the form of videos related to the learning material to be studied. With this application, researchers hope that students can understand mathematical material easily and increase their enthusiasm in learning mathematics. The Zenius application has a mobile application to make it easier for students to do assignments so that the Zenius application provides material on the subjects that will be selected out and users can choose which material which will be studied. In some of the existing materials, there are several videos that can be accessed and studied by users. With this mobile application, Zenius provides very easy access for students to be able to access via smartphones. In this case, why can Zenius improve the quality of learning in Indonesia? This will be explained through the following explanation:



Figure 5. Display of Internet Users in Indonesia

In early 2021, social media management platform HootSuite and marketing agency We Are Social again released the latest report regarding world internet users, including Indonesia. Based on his latest report, it revealed that the number of internet users in Indonesia reached 202.6 million or 73.7 percent of the largest total population of 274.9 million in January 2021.

Of the total data, there are 195.3 million people or 96.4 percent of them access the internet through mobile devices such as smartphones and feature phones. They use cellular and Wifi connections to access the internet. Based on the report, the average internet mobile user is 16-64 years old and takes 5 hours 4 minutes every day to access the internet.

Therefore, based on the results of the analysis that has been carried out, the Zenius application is considered capable of helping students in carrying out learning during the Covid-19 pandemic. Online learning activities from schools, both SD-SMA/SMK, are still considered to be less supportive of this learning system because adjustments are still needed from the school. For this reason, an institution or party that is more understanding and professional in terms of learning is needed, so Zenius is considered as one of the online tutors that has a reputation and quality with professional teachers. out of a total of 100 students who use this application, 90% of students get an increase in grades for math subjects, 95% in Indonesian, and others.

#### 4. Conclusion

The use of technology to maximize distance learning during the current pandemic is quite effective, with the existence of a site or renewable e-learning feature that can make the teaching and learning process run without being constrained by space and time. Optimization of one of the e-learning platforms that has been reviewed has also shown good results in its usefulness, because many of the students feel helped by the existence of the platform to support their learning to make it easier to reach and maximize, in other words we can conclude that e-learning can run optimally to help maximize distance learning during the current pandemic.

#### Acknowledgement

Thank you to the Universitas Komputer Indonesia for assisting in the process of writing this paper.

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