

## Development of Distance Learning During the Pandemic Period Using the Android Application (e-Sabaky) in Physics Subjects at SMA Negeri 1 Pati

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### Abstract

This study aims to develop a learning media for the development of open and distance learning. The learning media developed in the form of an Android-based application during the pandemic. This research method is the development method (RnD), which is developing a model of distance learning facilities and then applying it to the distance learning process during the pandemic. The location of this research is at SMA Negeri Pati then applied in several high schools outside Pati district such as Kudus and Rembang districts. The implementation period is from 2018 to 2020. Media E-SABAKY (Electronic Communicative Active Learning Application System Yuli) is effective and efficient for teaching concrete and fun materials for quantities and units for students which can be installed via student mobile phones. It can also be done cooperatively through SOM application collaboration group activities. Benefits of implementing E-SABAKY in learning Among them are for students to improve learning outcomes in terms of quantities and units. For teachers as a means to improve learning innovation and reference material to conduct similar research. For schools, as a consideration for the addition of supporting media for learning the material of quantity and unit, the results of daily tests will increase. E-SABAKY media is ecofriendly or environmentally friendly because it does not use paper. All learning materials to exams are all in the application. This learning system adapts to the needs of millennials which are identical to Android.

**Keywords:** E-SABAKY, Learning Media, Distance learning, SMA Negeri 1 Pati, Covid-19 Pandemic

### Introduction

The COVID-19 pandemic is an obstacle for all people in the world and this is also a health crisis for humans. In the world of education, the COVID-19 pandemic has also had a tremendous impact. Many schools in the world are closed to stop the spread of covid-19, according to a report by ABC news on March 7, 2020, dozens of countries closed schools to prevent the spread of the virus. Due to the high spread of COVID-19 in Indonesia, other universities and colleges were closed, including elementary schools. With the closure of schools, the government takes steps so that the learning process is not left behind and students still receive the right to gain knowledge. Therefore, the government's next decision is that the learning process continues but not face-to-face but online. According to Kusumawati et al. (2021) Many organizations use delivery methods for employee training with online learning (Simmons 2002).

With this regulation, teachers must be able to carry out the learning process effectively online at home. Teachers are required to be able to do online teaching, the ability of teachers in information technology is needed. According to Yuanga et al. (2020). Teachers are required to revamp learning plans with online methods, learning methods must also be effective so that the teaching process runs effectively and knowledge can be conveyed. Regarding teacher problems, Covid-19 also has an impact on students, lessons are usually carried out in the classroom with a lot of atmosphere. friends must be inversely proportional to studying at home. Moreover, by looking at the different abilities of each student and the absorption capacity of each student, it must be different. This will automatically have an impact on student achievement and motivation in learning. Furthermore, having an impact on parents, parents again get additional tasks and at the same time become teachers for their children during the online learning process.

According to Kusumawati et al. (2021); Murdowo et al. (2021) Parents are required to guide their children during the online learning process. In this era of the covid-19 pandemic, the responsibility and role of parents in children's learning is very influential because some of the tasks of teachers have been carried out by parents. If you look at the presentation of the COVID-19 pandemic on the learning process for teachers and students, there are many problems and conditions that force teachers, students and parents to do online learning. However, from all these problems, there is a positive side that benefits and provides positive effects for all parties. Therefore, the author is interested in conducting research on the COVID-19 pandemic on the learning process for teachers and students. According to Purwanto et al. (2020) The impact of COVID-19 on the online learning process in schools has an impact on students, parents and teachers themselves. Some of the impacts felt by students are that students do not have a culture of distance learning because so far the learning system has been implemented face-to-face, students are accustomed to being at school to interact with their friends, play and joke with their friends and meet face-to-face with their teachers. With the distance learning method, students need time to adapt and they face new changes that will indirectly affect their learning absorption. The COVID-19 pandemic has greatly impacted the learning process for teachers and students as well as parents. The ability to use technology is a major obstacle for all parties to participate in online learning. Without initial training, teachers will feel alien to the conditions that require learning from home. The impact of covid-19 for teachers, students and parents is very large where in situations like this it is necessary and must spend extra time for students and children so that learning objectives can be achieved. The most basic obstacle is inadequate facilities because usually teachers and students carry out the learning process with adequate facilities but are faced with facilities that only depend on the internet. Teacher competence in using technology in the learning process must be adequate. Teachers must be proficient in the use of technology because it affects the quality of learning. teachers must be able to design appropriate and appropriate methods in the online learning process.

According to Ramdani et al. (2020); Rohmah et al.. (2020) The 21st century is a cyber century marked by borderless communication. The characteristics of the 21st century are the availability of information anywhere and anytime, the implementation of a computing system, able to reach all routine work (automation), and can be done from anywhere and anywhere (communication). intellectual property, and the creation of good democratization. Likewise in the world of education. This century requires the transformation of education as a whole, so that the quality of teachers is built who are able to advance

knowledge and improve student achievement. According to Setyorini et al. (2020) 21st century education is education that should not be tied to theory, teachers should not argue that the knowledge they have is the most correct. The context of 21st century learning is curriculum development which is expected to provide opportunities for students to get to know the universe. It is necessary to develop a learning process that uses Android via distance, because the Covid-19 pandemic has forced the government to enforce rules for studying at home for students. With a learning application called the electronically communicative active learning application system (e-Sabaky) that was created, it did not make students confused because the learning had been carried out since 2018. Students can open the application anytime and anywhere.

According to Setyorini et al. (2020); Yuangga et al. (2020). Schools in the field of curriculum have a big task in this 21st century learning era. Schools must improve policies and develop new skills for teachers, schools must implement new learning strategies, and are relevant to establishing partnerships at regional, national and international levels. Today's teachers are 21st century learning teachers. Through 21st century learning, there are at least two core skills that a teacher must develop, namely the ability to use knowledge, to deal with all problems regarding the real world, and critical thinking skills, namely the ability to solve problems, communicate, independence, and so on. From the description above, teachers are required to present learning that attracts students' interest in learning. This can be achieved well if the teacher is creative and innovative in developing learning media. Because with the media, the learning material will be more easily absorbed by students. Because learning media is actually a bridge to transfer knowledge and skills. Therefore, there is a need for creative and innovative actions that researchers must take to produce a learning process that successfully improves student learning outcomes.

The main reason for using E-SABAKY media (Electronic Communicative Active Learning Application System) is because it is effective and efficient to teach concrete and fun materials for quantities and units for students which can be installed via student mobile phones. It can also be done cooperatively through collaborative group activities on the SOM application. The formulation of this research problem is how to improve physics learning outcomes for the material and units of class XMIPA-7 SMA Negeri 1 Pati in the odd semester of the 2018/2019 academic year. The results of this study are expected to provide benefits. Among them for students can improve learning outcomes of materials and units of magnitude. For teachers as a means to improve learning innovation and reference material to conduct similar research. For schools, as a consideration for the addition of supporting media for learning the material of quantities and units, the meaning of daily test results is increasing.

## Method

This research method is the development method (RnD), which is developing a model of distance learning facilities and then applying it to the distance learning process during the pandemic. The location of this research is at SMA Negeri Pati then applied in several high schools outside Pati district such as Kudus and Rembang districts. The implementation period is from 2018 to 2020. All learning materials to exams are all in the application. This learning system adapts to the needs of millennials which are

identical to Android. The application is downloaded on android and every student has an e-Sabaky account.

## Results and Discussion

E-Sabaky learning on android applications in 2018 and has been implemented at SMAN 1 Pati until now. The application of learning began because students today prefer to hold the android when the teacher explains in front of the class. Students will feel bored when they have to focus on paying attention to the teacher explaining in front of the class and take the opportunity, by applying learning via smartphones. In this study, the book remains the center and as a support for learning. While android as an application that helps facilitate the learning process of students. After being applied, it was proven that students really enjoyed and easily understood physics. Abstract science becomes concrete.

According to him, this learning is to make it easier for students because in the teaching and learning process the students use Android. So it is ecofriendly or environmentally friendly because it does not use paper. All learning materials to exams are all in the application. This learning system adapts to the needs of millennials which are identical to Android. The application is downloaded on android and every student has an e-Sabaky account. I have implemented Android-based learning in class X SMAN I Pati starting from 2018/2019 learning ago. So students have to log in to that account every time they learn. All materials and questions that will be presented are already in the application. After being given an explanation, students directly work on the questions in the application and save the answers to the questions right away in their respective accounts. So that it is immediately corrected and the results are known. Now, e-Sabaky has been socialized to several MGMP SMA Pati. This system has also been socialized e-Sabaky outside Pati such as Kudus and Rembang. There are already several schools that implement it. Physics teachers who apply this learning intensely communicate

The 21st century learning environment is a digital student learning environment. To bridge that, smartphone-based learning is an option that suits the conditions of today's digital students. In this smartphone-based 21st century learning, I use a playstore application called E-SABAKY. This application can be downloaded and installed by students on their smartphones. With this application, students can directly work on their respective smartphones, continue to send files or their work, and teachers can directly access the results of their work. With technology as the main medium of learning, the face of 21st century education has also completely changed. Students are no longer just barrels that must be filled by the teacher, but the teacher is only a motivator in the activities of the teaching and learning process.

Based on the theoretical hypothesis, namely through the application of E-SABAKY in 21st century learning assisted by SOM applications, it can improve student learning outcomes. Meanwhile, based on the empirical results of the action, namely through the application of E-SABAKY in 21st century learning assisted by the Screencast O Matic (SOM) application, it can improve student learning outcomes for class XMIPA-7 SMAN 1 Pati semester I 2018/2019. From the initial condition with an average score of 6.2 (6%) to the final condition (cycle II) with an average value of 8.3 (91%). For that, both theoretically and empirically the application of E-SABAKY in learning The 21st century assisted by the SOM application

can improve student learning outcomes for class XMIPA-7 SMAN 1 Pati in the first semester of 2018/2019.

The learning modules that have been developed can be accessed digitally and online through various types of devices, both computers and gadgets. For media development using devices, the module is supported by an Android-based application that can be accessed by students online through this application. Because it is based online, this application cannot be used offline unless first screenshots of each page of the digital module. From the results of the questionnaire measurements obtained, the learning media using E-SABAKY and based on Android is indicated by the results of the usability or programming aspects according to the needs of the user or user here are students. The content contained in the digital module is also very helpful for students in the learning process and display or The interface of this application is quite attractive so that it does not make students feel bored to learn to use this digital module. This application will be used as a medium in distance learning in future research.

## Conclusion

The COVID-19 pandemic has greatly impacted the learning process for teachers and students as well as parents. The ability to use technology is a major obstacle for all parties to participate in online learning. Without initial training, teachers will feel alien to the conditions that require learning from home. The impact of covid-19 for teachers, students and parents is very large where in situations like this it is necessary and must spend extra time for students and children so that learning objectives can be achieved. E-SABAKY Media (Electronic Communicative Active Learning Application System Yuli) is effective and efficient for teaching concrete and fun materials for quantities and units for students which can be installed via student mobile phones. It can also be done cooperatively through SOM application collaboration group activities. Benefits of implementing E-SABAKY in learning Among them are for students to improve learning outcomes in terms of quantities and units. For teachers as a means to improve learning innovation and reference material to conduct similar research. For schools, as a consideration for the addition of supporting media for learning the material of quantity and unit, the results of daily tests will increase. E-SABAKY media is ecofriendly or environmentally friendly because it does not use paper. All learning materials to exams are all in the application. This learning system adapts to the needs of millennials which are identical to Android. This application will be used as a medium in distance learning in future research.

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