

## **Effectiveness of Using Mobile Applications in Science Learning at MAN 2 Probolinggo Post-pandemic**

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### **ABSTRACT**

This study aims to evaluate the effectiveness of using mobile applications in Natural Science (IPA) learning at MAN 2 Probolinggo after the COVID-19 pandemic. This study uses a quantitative descriptive method involving MAN 2 Probolinggo students as respondents. Data were collected through questionnaires filled out by students and interviews with teachers to gain qualitative insights. The results showed that the use of mobile applications significantly improved students' learning achievement in science subjects compared to conventional methods. The average score of the experimental group's learning achievement test was higher than the control group. In addition, the results of the questionnaire showed that students felt more motivated and interested in the learning process using mobile applications. Interviews with teachers also revealed that mobile applications facilitated the delivery of materials and increased interaction between students and teachers. However, challenges such as limited devices and internet connectivity are still obstacles that need to be overcome. This study concludes that using mobile applications in science learning at MAN 2 Probolinggo post-pandemic has a high effectiveness and positive impact on student learning

achievement and motivation. Recommendations are given for integrating mobile applications in the learning curriculum as one of the modern learning strategies adaptive to technological developments. Further research is recommended to explore the use of mobile applications in various subjects and educational contexts.

*Keywords:* Effectiveness, learning achievement, mobile application, motivation, science learning

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## **INTRODUCTION**

Technological progress has not only penetrated various countries but also various sectors, one of which is the education sector. For the education sector, technology is a vital component in supporting teaching and learning activities. Learning media is a tool teachers use to convey knowledge to students, which increases students' interest in the subject matter. This is in line with what several experts have stated regarding learning media. Heinich, (1996) stated that media is a tool that can carry information for learning purposes. Learning media acts as a means of communication between educators and students, which allows the information conveyed by educators to be well-received by students (Nurfadhillah et al., 2021; Saputra & Isnain, 2021).

Since the COVID-19 pandemic hit Indonesia in early 2020, the government implemented Large-Scale Social Restrictions (PSBB), which required the community, including teachers and students, to carry out activities from home. Teachers are required to master digital media and be able to create effective and innovative digital-based learning media. Mobile learning allows students to access learning materials through applications anywhere and anytime (Bambang, 2008).

Online learning media can improve teaching and learning (Azhiimah et al., 2021). In addition, online media makes students more active in participating, supports students in accessing knowledge (Karyanto et al., 2020), improves student learning outcomes during the pandemic (Tampubolon et al., 2021), plays a role in supporting students' learning interests (Awalia et al., 2021). Van et al. (2021) highlighted the effectiveness of technology in enhancing English language learning. However, using this technology also faces challenges, as stated by Sumilat (2022), especially regarding limited internet access and digital skills of students and teachers, which are still obstacles to its implementation. With the increasing need for distance learning, applications such as Smart App Creator become essential. This application allows the creation of various multimedia applications and the learning process to be unbound by place and time, providing the flexibility needed during the pandemic. Therefore, this study focuses on the Effectiveness of Using Mobile Applications in Science Learning at MAN 2 Probolinggo Post-Pandemic.

## **PROBLEM STATEMENT**

This study aims to assess the effectiveness of mobile applications in facilitating science learning in a post-pandemic context, focusing on student engagement and understanding of materials.

## **RESULT**

Based on the survey results, every aspect is described as follows. Firstly, the majority of respondents felt that the mobile application was moderately effective in helping them

understand science material, with a very small number of respondents feeling the application was ineffective. Secondly, most respondents experienced increased learning achievement through mobile applications, with a small number of students reporting no change or a decrease in achievement. It shows that mobile applications have great potential to support increased student academic achievement. Thirdly, the majority of respondents felt quite satisfied or very satisfied with the interactions that occurred via mobile applications during science learning. However, a few people feel that this interaction can still be improved. Fourthly, most students felt that the material delivered via the mobile application was sufficient to be very easy to understand, with only a small percentage finding it difficult to understand the material. Lastly, the majority of students experienced an increase in learning motivation, either moderately or greatly increased, with only a few students not feeling any change or experiencing a decrease in motivation. Mobile applications appear to be effective in increasing the learning motivation of most students.

## CONCLUSION

This study revealed that using mobile applications in science learning at MAN 2 Probolinggo after the COVID-19 pandemic is very effective in improving students' understanding of the subject matter. These applications are considered very effective or quite effective in helping students understand science material. However, this study also found several technical obstacles students often face, especially slow internet connections and unsupported devices.

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