

Developing E-learning Software with Multiplatform Components using Open-Source Technologies: A Usability Study

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Abstract

In the current digital era, e-learning has become a popular means of acquiring knowledge and skills. E-learning software has made it possible to access educational materials and resources anytime and anywhere. This paper presents the development of e-learning software with multiplatform components.

The research method used in this study involves the development of a prototype e-learning software using open-source technologies and conducting usability testing. The results of the study indicate that the e-learning software developed is user-friendly, easy to navigate, and accessible across different platforms. The paper concludes that the development of e-learning software with multiplatform components is a significant step towards ensuring that education is accessible to everyone, regardless of their location and device.

Keywords: *e-learning, software, multiplatform components, usability testing, open-source technologies*

INTRODUCTION

The world is rapidly changing, and so is the way we learn. With the advent of technology, e-learning has become increasingly popular as a means of

acquiring knowledge and skills. E-learning software has made it possible to access educational materials and resources anytime and anywhere, providing learners with the flexibility and convenience they

need to succeed. However, the development of e-learning software that can run seamlessly across different platforms remains a challenge. This is where the development of e-learning software with multiplatform components using open-source technologies comes in.

By developing an e-learning software that is accessible to all, regardless of their location and device, we can take a significant step towards ensuring that education is inclusive and equitable. This paper presents the development of such an e-learning software, along with the research method used to develop it, the results of usability testing, and the conclusion drawn from the study.

Research Method: The research method used in this study involves several steps. Firstly, prototype e-learning software was developed using open-source technologies such as HTML, CSS, JavaScript, and PHP programming languages. The software was designed to be compatible with different platforms, including desktop computers, laptops, tablets, and smartphones.

The software development process followed an agile methodology, with regular feedback from stakeholders and

end-users incorporated into the development process.

Once the e-learning software was developed, usability testing was conducted to evaluate its user-friendliness. A total of 30 participants were recruited for the usability testing, which was conducted in a controlled laboratory setting. The participants were required to complete various tasks using the software, such as accessing educational resources, completing quizzes, and submitting assignments. Their feedback was collected through a questionnaire, which asked them to rate the software's ease of use, accessibility, and overall user experience.

The data collected from the usability testing was analyzed using both qualitative and quantitative methods.

The qualitative analysis involved reviewing the comments and feedback provided by the participants, while the quantitative analysis involved summarizing the ratings provided by the participants on the questionnaire. The results of the analysis were then used to identify areas of improvement and to refine the e-learning software.

Overall, the research method used in this study is a rigorous and systematic approach to developing and evaluating e-learning software. By using open-source technologies and conducting usability testing, this study ensures that the e-learning software developed is accessible, user-friendly, and responsive to the needs of its end-users. Result and Analysis: The results of the usability testing indicate that the e-learning software developed is user-friendly and easy to navigate.

The majority of the participants found the software to be accessible across different platforms, with no significant differences in performance observed across the platforms. The software was also found to have a clear and intuitive interface that made it easy for users to locate and access educational resources. However, a few participants reported that some of the features of the software were not immediately apparent and required additional guidance.

CONCLUSION

The development of e-learning software with multiplatform components using open-source technologies is a significant step towards ensuring that education is accessible to everyone, regardless of their location and device. The results of this

study indicate that the e-learning software developed is user-friendly, easy to navigate, and accessible across different platforms. However, additional improvements can be made to enhance the user experience, such as improving the visibility of certain features and providing additional guidance.

Further research can be conducted to evaluate the effectiveness of e-learning software in enhancing learning outcomes and to identify areas for further improvement.

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