



Development and Implementation of a Mobile SIWES Management System

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Introduction

The Student Industrial Work Experience Scheme (SIWES) is a critical component of engineering education in Nigeria, aimed at bridging the gap between theoretical knowledge and practical industry experience. Traditional SIWES management systems are plagued by inefficiencies, including reliance on paper-based documentation, delayed feedback, and fragmented communication among students, supervisors, and industry partners. These challenges hinder the program's effectiveness and limit students' ability to gain meaningful practical experience. To address these issues, this study developed a mobile application to modernize SIWES management, leveraging digital technology to enhance communication, streamline administrative processes, and improve real-time tracking of student activities.

Materials and Methods

The entire project system design began with user-focused methods that involved continuous development cycles supplemented by stakeholder assessment. The mobile application uses Flutter and Firebase as its development framework to deliver its Android version with a digital logbook and real-time messaging and reporting generation functionality and secure login protection features. The project followed Agile principles to guide development which involved testing prototypes as part of refinements and performed reliability checks through load and stress tests.

Results and Discussion

Through this application the SIWES management became better because it digitized logbooks while making work processes automatic and enabled real-time communication. Through this application students could obtain fast feedback while tracking their development to create better engagement. Despite the fact that the user appreciated the interface and how friendly and simple it is for use, the off-line use of the app is demanded alongside the real-time notification scenario. The system's performance results indicated robust support for multiple users who received their responses rapidly.

Conclusions

The SIWES mobile application solves management system problems by providing an efficient scalable user-friendly solution. Further development efforts should concentrate on making the system operate offline and enhance analytics features while targeting wider institutional agreements. The innovative nature of mobile technology opens new opportunities for transformative education because it can be applied across different practical training programs after SIWES.

Keywords

Experiential learning, Feedback, Mobile application, SIWES, Real-time, Digital logbook.