



RESEARCH ARTICLE

ON-THE-GO GUIDE: EVSU ORMOC MOBILE HANDBOOK FOR STUDENTS

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ABSTRACT

This study focuses on building and developing a student handbook that will be essential for the Eastern Visayas State University Ormoc (EVSU-OC) Community using a mobile application. This paper aims to enhance the overall student experience at the university using modern technology. This study uses the Iterative Agile Model as the software development life cycle as well as a descriptive research method. The software Figma is used to design and prototype the system. The system is based on a mobile application that enables students to access the handbook on their mobile devices. The app can provide a more interactive and visually appealing platform, addressing the lack of student engagement and awareness of school rules. With the efforts and hard work of the proponents, this capstone project was created and has achieved its objectives through researching, testing, and conducting school surveys using today's technology.

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INTRODUCTION

The Student Manual, also known as the Student Handbook, provides helpful details about the University. The student handbook is distributed to new students to keep them informed and up to date on the university's rules, policies, and regulations. Due to the ongoing advancements in technology, mobile applications can now be used on any device that has Wi-Fi or Internet access. The usual issue with the current method of handbook usage is students frequently fail to remember to bring it. Some people are not inclined to hold onto it because they find it dull and burdensome to carry. This manual is in the form of a booklet and is distributed to a limited group of students, the PDF version of the manual may not be engaging for students as it lacks interactivity and visuals. Engagement. Most students don't have the necessary information or awareness of the regulations at school. Unlike the Mobile Version Application of the Handbook which can offer interactive features, improved student experience, multimedia elements, and a dynamic user experience. The researchers conducted a study to create a digital student handbook that can be accessed on mobile devices for easy browsing and reading by instructors and students.

The aim of this project is to enhance the students' experience at EVSU community through the implementation of a mobile app that is easy to use. The App provides Handbook sections including details about the program offered, school website links, events, university mission and vision, core values, departmental aims and objectives, organizational structures, and a map displaying building, department, and office locations. All of these can be found in the user-friendly digital student handbook. The project will be advantageous for the institution as it will result in the creation of the student handbook without any expenses for the university. Rather, it will be available at no cost for every student at EVSU-OC and can be accessed online whenever needed. There are some theories and concepts that are related to our study. The study by Camilleri, M. A., & Camilleri, A. (2017) discussed the technology acceptance of mobile applications in education. This study explores the educators' attitudes and behavioral intentions toward mobile applications. The handbook offers a lot of digitalized content compared to traditional handbooks. The other one is Nakonechnaya, (2013) which mentioned the modernization of handbooks on higher education for the 21st century, this supports our project goal and objectives to modernize and update some of the educational resources.

The next one is Sarkar's study which states that Computer-based systems have a lot of possibilities for distributing educational content. Another one is from Prandi, C., Barricelli, B. R., Mirri, S., & Fogli, D. (2021) on wayfinding and navigation: a systematic mapping study, the study of Mirri S., and Fogli, D. which aims to help with wayfinding and easy navigation in indoor and outdoor environments. This will also be one of the main functions of the application the mini map which shows the simplified and easy-to-navigate map. By emphasizing their studies, we've applied a solution by developing a Mobile Application that meets the needs of the students and successfully digitalizes resources that help students to have easy access to essential campus information such as Handbook contents, and to enhance their overall educational experience at EVSU.

METHODOLOGY

The study used the Iterative Agile Model as the software development life cycle as well as a descriptive research method. The proponents communicated and brainstormed to discover the challenges, areas, and other variables that must be considered throughout project implementation. Formal interviews were done with the use of Google Forms distributed to random EVSU students and face-to-face interviews with the faculty and staff of EVSU-OC using an audio recorder. Furthermore, the data gathered from respondents were studied and evaluated to identify the exact flow of the project. With the data collected from the questionnaires, and interviews, the proponents found out that the common problem with the current method of having the handbook is that the students usually forget to bring it. Others do not have an interest in keeping it, they find it somewhat boring, and they think it is a hassle to carry. This handbook is a manual book and is distributed to only a limited number of students, also the PDF type or version of the handbook can also be uninteresting to the students because of a lack of interactivity and visual engagement, many students lack the required knowledge and awareness of school rules.

Based on the findings from the research phase, the proponents have created a digital student handbook that can be put on mobile devices so that instructors and students may quickly browse and read whenever possible and address their needs.

To develop the system, a programmer must set first his/her computer in a dev environment, to enable to do this, the programmer must download and install these software: XAMMP, VScode, Figma, Android Studio, CMD/terminal, GIT, and NodeJS. By following this tutorial, a developer will be able to create a dev environment for both web and mobile development. This tutorial can be found on this website: <https://reactnative.dev/docs/environment-setup?guide=native>.

Developing software also requires hardware; a laptop or desktop and a smartphone, during in development phase, we have created the app the web app, and its databases. During the development of the system, sets of hardware and software are used to develop the web system and the mobile system. For the hardware, a desktop or laptop will be used to test, develop, and access both systems. A smartphone is a device where the application will be installed and used for debugging. For the software, VScode is used to compile and develop both systems.

Xampp is used for testing local networks before uploading it to the hosting service. The MySQL database is used to store all data used by the system, The figure is the database schema which defines the attributes of the database, such as tables, columns, and properties. The system has a total of 14 tables that are used in the system.



A web browser is used to test and access the web system and administration of the Handbook. The software Figma is used to design and prototype the system. Photoshop and Illustrator are used for image editing and logo-making. Android Studio is where to test and develop the app. Summernote is a third-party software used by the admin handbook to edit chapters and long-texts. Lastly, GoogleMyMaps is an online software used to integrate and use its functions to integrate with our app to use Google Maps for an improved navigation experience. With all the tools used, below is the design of the system and its topology. The system will have two types of users: the client (students) and the administrator (handbook in charge). Each has its role and functionality. The client (students) will be limited only to accessing the handbook contents via the installed app (Android OS), which will get the data from the internet through the handbook database and freely access all the exclusive handbook contents for students. The administrator has the privilege to add, edit, delete, and update the contents of the mobile handbook application. Through the use of the admin panel (WEB Panel), the administrator should be able to make any changes to the handbook data.

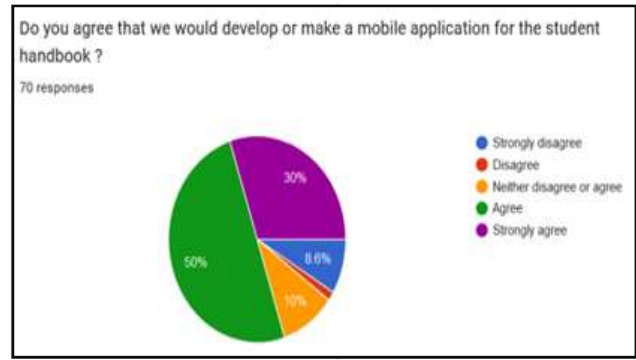
RESULTS AND DISCUSSION

The project focuses on developing a mobile application (Android OS) for EVSU Ormoc students to solve the issues with traditional student handbooks. The application will help improve and optimize student engagement and awareness of the school rules and policies by providing an overall improved interactive experience inside and outside the campus. In developing the system, the proponents did some testing to identify bugs and errors in the system. Unit testing is one of the types of testing in software methodology wherein those individual components of the system are led. Using this method, the developer can identify and analyze defects, fix bugs, and make changes. This would allow the developer to figure out each of these at this level of performance.

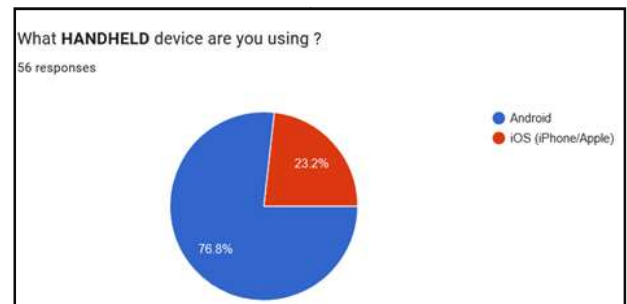
Admin Module Testing: The results from face-to-face interviews and through the use of Google Forms the proponents have found that the majority of the students would be interested in using the mobile application (EVSU Handbook app). The statistics below show the user feedback.

| No. | Test Case | Expected Result | Actual Result |
|-----|--|--|---------------|
| 1 | Testing chapter addition. | A message will appear saying "chapter created successfully" | Accomplished |
| 2 | Test the removal of chapter. | A message will appear saying "chapter deleted successfully" | Accomplished |
| 3 | Test the creation and editing of various content types (announcements, news, events, resources). | A message will appear saying "adding of (content)successfully" | Accomplished |
| 4 | Verify that data is accurate and up to date. | All the information on the handbook app must be relevant | Accomplished |
| 5 | Event addition | A message will appear saying "event added successfully" | Accomplished |
| 6 | Event deletion | A message will appear saying "event deleted successfully" | Accomplished |
| 7 | Links addition | A message will appear saying "link added successfully" | Accomplished |
| 8 | Links deletion | A message will appear saying "link deleted successfully" | Accomplished |
| 9 | Accessing admin dashboard | Displays number of handbook chapters, campus, evsu links, campus, events. | Accomplished |
| 10 | Clicks Handbook MENU | Displays chapters and articles | Accomplished |
| 11 | Clicks Program Offered MENU | Displays campuses and its program offered | Accomplished |
| 12 | Clicks EVSU map MENU | Displays map link | Accomplished |
| 13 | Clicks Mission/Vision MENU | Displays departmental Mission/ Vision | Accomplished |
| 14 | Clicks EVSU links MENU | Displays links | Accomplished |
| 15 | Clicks Events MENU | Displays events | Accomplished |
| 16 | Clicks Reports MENU | Displays user reports | Accomplished |
| 17 | Clicks About MENU | Displays about the school | Accomplished |
| 18 | Clicks Settings MENU | Displays info about the link | Accomplished |

| No. | Test Case | Expected Result | Actual Result |
|-----|--|--|---------------|
| 1 | Test that the dashboard displays handbook-related information, including its chapters, events, program offered, evsu map, and evsu links accurately. | Displays data from the admin server. | Accomplished |
| 2 | Test that all chapter and its contents are displayed on client(mobile) | Displays on real-time. | Accomplished |
| 3 | Test the responsiveness and load times of content pages. | Loads fast. Or less than 5 seconds. | Accomplished |
| 4 | Displays program offered on the mobile. | Displays added programs and courses from the admin panel data. | Accomplished |
| 5 | Test that event details are accurate and up to date. | Displays and sorts all latest events. | Accomplished |
| 6 | Test that the maps are accurate and easy to use. | Displays the simple mini map. | Accomplished |
| 7 | Test that students can provide feedback and report issues through the app. | Sends that info to the admin panel | Accomplished |
| 8 | Test the accessibility features such as text-to-speech and screen reader compatibility. | A working text to speech feature | Accomplished |
| 9 | Test the ability to access essential content for offline viewing. | Still some accessible features via offline. | Accomplished |

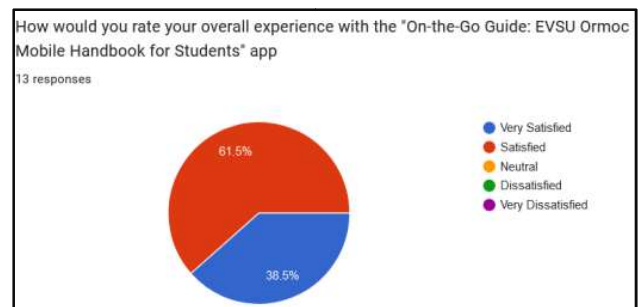


The above Figure shows the statistics before making the app. 50% of the respondents said they agree, 30% strongly agree, 10% neither disagree nor agree, 8.6% strongly disagree, and the rest for the option, disagree. Before developing the app, questionnaires were distributed to identify what devices were used by each student. Survey questionnaires were distributed randomly. Below is the figure showing the percentage of ANDROID and IOS users.

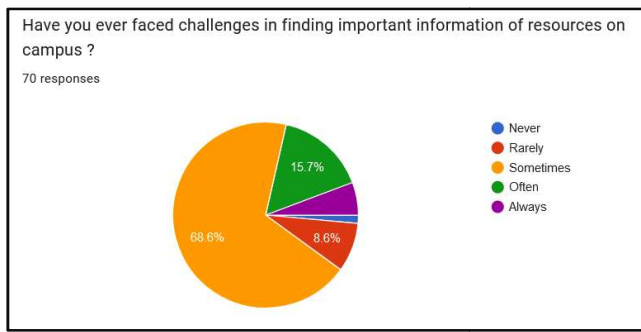


76.8% show they are ANDROID users, while the other 23.2% show they are using Apple Devices.

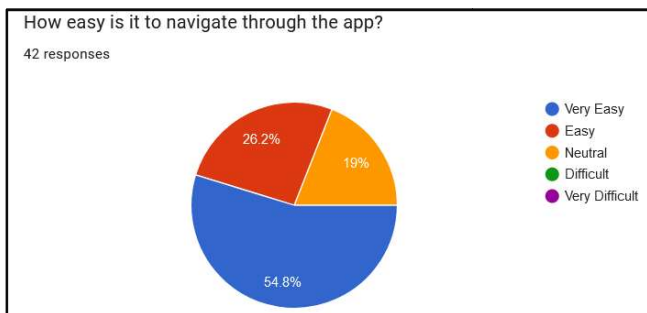
With the data gathered from the interviews and questionnaires, the proponents also gathered results for the implementation of the app. As we can see below the analysis 61% of the respondents answered they were satisfied with the overall experience of the app.



And 38% say they are very satisfied. The development and implementation of the EVSU Ormoc Mobile Handbook represent a significant step towards fostering a more connected and informed educational environment at EVSU Ormoc Campus. By leveraging advanced technology and user-centered design principles, the mobile application serves as a cost-effective and accessible tool for improving student engagement and awareness of campus resources and policies. As we can see in the figure below, in the question: Have you ever faced challenges in finding important information or resources on campus?.



Based on the data gathered on the questionnaire, 1.4% answered never, 8.6% answered rarely, 68% answered sometimes, 15% answered often, and lastly 5.7% answered always. By analyzing the data, it can be seen that most students have faced struggles finding important information and resources on campus. By implementing the app, questions were included in the questionnaire on the ease of navigating through the app. The survey shows 54.8% of respondents answered very easy to navigate, 26% showed it was easy for them to navigate, and lastly, 19% responded neutral. This proves that they are satisfied with the UI of the app.



CONCLUSION AND RECOMMENDATION

With the efforts and hard work of the proponents, this capstone project was created and has achieved its objectives through testing, researching, and conducting school surveys through the use of today's technology. Using this system, students will be able to adapt to the digital space of their academic journey. This project (MOBILE HANDBOOK) contains all important information based on the physical copy of the handbook, which would be useful and helpful to students, faculty, and campus staff. Additionally, it has unique features like Campus Map, EVSU Latest Events and Information, Organizational Chart, Useful Links, etc. All these are aimed at improving the overall educational experience at EVSU Ormoc.

Finally, based on the insights gained from this project, the proponents offer the following recommendations

- Regular updates and maintenance- this is to ensure the handbook's content and information stay relevant and legit and to stay optimal and run smoothly.
- User feedback- this allows the system to improve the UI and allows users to give suggestions and improvements to the app and report any bugs. Expanding the features of the handbook will allow future developers to improve the app.

- Develop an iOS version for future developers and researchers so that students with Apple handheld devices will also have accessibility.
- Enhance security—this will use a much more secure database.

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