

StudySync: A Licensure Exam for Teachers Review Application

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Abstract- This study aimed to develop an application entitled “StudySync: A Licensure Exam for Teachers Review Application”. The study utilized a descriptive-developmental method of research. Android Studio was used to create the application. The Agile Methodology - Scrum Framework guided the research and system development. The application included key features such as a timed simulation exam, an analytics page displaying bar graphs for each subject, and a profile section where users could view their quiz history and upload a profile photo. A total enumeration technique was employed to evaluate the application. The data was gathered using a standardized questionnaire developed by John Brooke in 1986, the System Usability Scale (SUS). The usability of StudySync was evaluated by 70 4th-year students from the College of Education of ISUFST-San Enrique Campus. The data were tabulated and analyzed using the mean. The results revealed that the developed StudySync system achieved a grand System Usability Score (SUS) of 92.02, graded as A+, falling within the 90 -95 percentile range, and is described as “Excellent”. The system was deemed highly acceptable, with a Net Promoter Score (NPS) categorized as “Promoter”. Based on these findings, the College of Education may encourage students to utilize StudySync as a supplementary tool for reviewing for the LET, and may upload the application to the Google Play Store to reach a wider audience, and develop a tutorial video to guide students in using the system effectively. This study was conducted at the Iloilo State University of Fisheries Science and Technology- San Enrique Campus (ISUFST-SEC) in San Enrique, Iloilo, from August to October 2025.

Index Terms – Android Application, LET Reviewer

I. INTRODUCTION

1.1 Background of the Study

In today's digital era, technology offers various solutions that could transform people's everyday lives. Mobile applications have revolutionized learning across multiple fields, offering personalized, on-the-go study tools tailored to individual needs. However, most existing applications focus only on delivering quizzes, without incorporating features that simulate actual testing conditions or support a deeper understanding of the questions.

Taking the Licensure Examination for Teachers before becoming a professional teacher causes challenges for students and fresh graduates from the College of Education. To prepare for the upcoming licensure exams, they spent most of their time attending review centers, paying for the lessons, and purchasing review materials. Despite the graduate's passion for teaching and dedication to their studies, they struggle to prepare for the vast topics covered in the exam.

To overcome these challenges, the researchers developed StudySync: A Licensure Exam for Teachers Review Application of ISUFST-SEC. This application offered a more effective and engaging method of preparation through timed exams that replicated real exam conditions. After completing each exam, users received immediate feedback, including scores, questions, and answers, which helped them understand their mistakes and reinforce key concepts. By creating a user-friendly interface, StudySync aimed to offer a practical and affordable alternative to traditional review methods. This app not only provided a more engaging way to study but also gave candidates the confidence and readiness to succeed on their licensure exams.

1.2 Objectives of the Study

This study aimed to develop StudySync: A Licensure Exam for Teachers Review Application, and to determine its acceptability. Specifically, this study aimed to:

1. developed StudySync: A Licensure Exam for Teachers Review Application; and
2. evaluate the developed application's acceptability in terms of its usability.

1.3 Conceptual Framework

The conceptual framework showed the relationships among variables using an Input-Process-Output (IPO) diagram, as presented in Figure 1. The input stage included the user, software, and hardware requirements. User Requirements included the QR Code Scanner, the Student's Institutional Account, and the Username. Software Requirements included a mobile app development framework, back-end development and APIs, and a Database. The researchers used an Android Smartphone and a Laptop or Computer with at least 4GB of RAM and an Intel Core i5 processor for hardware. The Scrum-based Agile methodology was used during the process stage to ensure the application's flexibility and continuous improvement throughout development. The output was the StudySync: A Licensure Exam for Teachers Review Application, which was evaluated for acceptability based on Usability and met the required standard.

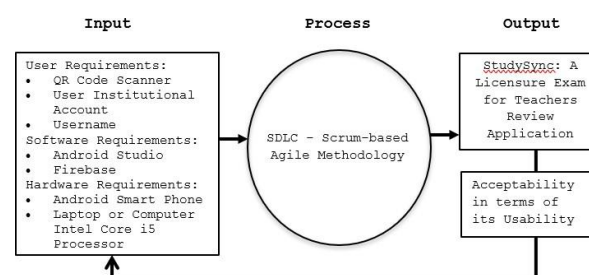


Figure 1. Input Process Output (IPO) of StudySync: A Licensure Exam for Teachers Review Application

1.4 Scope and Limitations of the Study

This study focused on developing an interactive mobile application called StudySync for the Iloilo State University of Fisheries Science and Technology – San Enrique Campus, conducted from August to October 2025. The application featured timed simulation exams and analytics to support the university's review system for students, enhance their knowledge in areas where they lacked, and boost the university's passing rate. The application was developed using advanced tools, including Android Studio and Firebase, to provide a user-friendly experience. The app is designed exclusively for Android devices, making it unavailable to users of iOS or other operating systems.

The evaluation involved 70 4th-year students enrolled in the College of Education of ISUFST – SEC, selected using Total Enumeration to ensure a representative sample. The researchers tested its usability using John Brooke's standardized questionnaire checklist. The data gathered were tabulated and analyzed using the System Usability Scale to determine its Usability.

1.5 Significance of the Study

The development of the StudySync Mobile Application brought benefits to the following groups:

Students and Fresh Graduates from the College of Education. The StudySync application offered students and recent graduates from the College of Education the opportunity to prepare for the upcoming Licensure Examination for Teachers.

Researchers. The StudySync application helped the researchers enhance their knowledge and skills in creating a mobile application.

Future Researchers. The study could use StudySync's findings and methods as a basis for similar projects, gaining practical insights into system development and manuscript writing.

1.6 Definition of Terms

The following terms in this study were defined to ensure clarity and eliminate confusion about the concepts used.

Agile. The agile methodology is a project management and software development approach that emphasizes flexibility, collaboration, and customer-centricity (GeeksforGeeks, 2023).

In this study, Agile refers to a methodology employed to accomplish this study due to its suitability for the system requirements and project development.

Android Studio. Android Studio is the official Integrated Development Environment (IDE) for Android App development (GeeksforGeeks, 2024).

In this study, Android Studio refers to the software platform used to develop Android applications.

Application. An application is a type of software program that performs a specific function for the user (Hanson, 2016).

In this study, application refers to StudySync, which is a mobile application used to review for the licensure exam for teachers.

Student. Student is an individual enrolled in a degree program focused on acquiring the necessary knowledge, skills, and character traits for the teaching profession (Merriam-Webster, 2025).

In this study, the term refers to students enrolled in the College of Education at ISUFST – SEC who are distinguished by their advanced standing in the program and their imminent eligibility to take the professional licensure examination upon graduation.

Firebase. Google Firebase is a Google-backed application development platform that enables developers to build iOS, Android, and Web apps (Pankaj et al., 2021).

In this study, Firebase is a software that the researchers used for real-time quizzes in StudySync.

Graduates. Graduates are individuals who hold an academic degree or diploma (Merriam-Webster, 2025)

In this study, graduates refer to individuals who have successfully satisfied all academic and institutional requirements of their degree program at ISUFST-SEC and have been officially conferred their academic degree or diploma, signifying the successful completion of their prescribed curriculum.

Java. Java is a class-based, object-oriented programming language that is designed to have as few implementation dependencies as possible. It is intended to let developers Write Once and Run it Anywhere (WORA), meaning that compiled Java code can run on all platforms that support Java without recompilation (GeeksforGeeks, 2025).

In this study, Java will serve as a programming language used to develop the StudySync Application.

Licensure Examination for Teachers (LET). The Licensure Examination for Teachers (LET) is a standardized exam in the Philippines that measures the competencies and qualifications of individuals who want to become licensed professional teachers (Board Exams PH, 2024).

In this study, the Licensure Examination for Teachers will serve as the focus of creating the StudySync mobile application.

Review. Review is the act of looking again at something studied or written, usually to prepare for an exam (Oxford dictionary, 2025).

In this study, review refers to taking exams in the application in preparing for the licensure exam.

StudySync. In this study, StudySync is a review application for the licensure exam that offers exams and provides a seamless experience for students, and fresh graduates from the College of Education.

Usability. Usability refers to how effectively, efficiently, and satisfactorily a product or design enables users to achieve a specific goal within a context (Oxford Dictionary, 2024).

In this study, Usability pertains to the newly developed system's evaluation process to assess its effectiveness, efficiency, and user satisfaction.

II. LITERATURE REVIEW

Using Microsoft Quiz and Mobile Exam Applications to Improve Teacher Competence in Online Learning in the New Normal Era

The unexpected onset of the pandemic left teachers ill-prepared to use information technology to adjust to remote learning. The issue identified is that teachers continue to struggle with literacy when using the program to encourage the use of applications for learning assessments and distance learning. Teachers must receive instruction on how to use the Microsoft Quiz app and mobile test. The goal of this article is to explain how the Microsoft Quiz app and the mobile test are used as tools for analyzing and assessing distance learning. The research method used was a descriptive qualitative method with the ADDIE model of learning design.

The objectives of the implementation in the form of training activities are 1) increasing the teachers' abilities and skills in developing learning materials based on information and communication technology, 2) providing an understanding of the distance learning concept, and 3) using the Microsoft quiz application and mobile exam for evaluation and online assessment. This research's primary materials were the Microsoft quiz and the mobile exam application for online learning assessment and evaluation. Microsoft Forms/Quiz is a simple, lightweight application that lets teachers easily create surveys, quizzes, and polls. In educational institutions, it can be used to create quizzes, collect feedback from teachers and parents, or plan classroom and staff activities (Microsoft, 2020).

The trial implementation of the Microsoft quiz application and the mobile exam was conducted with 24 vocational school teachers. Before the trial, brief guidance was provided on installing the mobile exam and attempting an online exam on a smartphone. Respondents filled out questionnaires after online test trials. The application trial results showed that the Microsoft quiz and mobile exam applications got an average point above 4, so they were feasible to be implemented in schools for assessment and evaluation of student learning outcomes of the 24 respondents, 13 people (54%) stated that they used a personal data package while taking the online test trial, and 11 people (46%) used the School Wi-Fi (Sakroni & Siswanto, 2021).

Enhancing Academic Performance in English at Bilaran National High School through a Self-Developed Mobile Quiz Game Application

Students' academic performance is affected by various factors in today's generation. Steinmayr stressed that academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in Schools, Colleges, and universities. Technological inventions are one of the factors that significantly contribute to students' learning. They give both positive and negative results to their learning. Nowadays, learners are fond of playing mobile games, which have become part of their daily lives. Professor Andrew Martin Maps said in his article on Psycholopaedia that the rapid expansion of technology in children's lives has enabled many opportunities for their educational development. However, if not used effectively or appropriately, technology can also be a headwind for children's academic well-being. When reviewing evidence and practice in this area, the question is not whether

children should use technology for their learning. This study, entitled "Enhancing Academic Performance in English of Bilaran National High School through a Self-Developed Mobile Quiz Game Application," aimed to improve the academic performance in English of Bilaran National High School students. The experimental type of research was utilized by the researcher in order to evaluate the effectiveness of the aforementioned mobile quiz game app. After the experiment, the computed t-value of 9.72, which exceeds the critical value of 1.99 at the 0.05 level of significance, indicated a significant difference between the post-test results of the control and experimental groups. Thus, it is found that the Self-Developed Mobile Quiz Game Application is effective in teaching English, both in grammar and literary terms (Punongbayan, 2019).

Mobile Technology for Learning Assessment: Design Process for the NursE-Quiz Mobile Application

Today, technological progress is transforming all fields, including education. Therefore, it is possible to use information and communication technologies (ICT) to improve students' learning experiences. Several studies have shown that learners are more

motivated to participate in an ICT learning activity than in traditional classroom approaches. This interest is because ICT allows teachers to diversify teaching methods and materials, making learning student-centered. This paper traces the development of a mobile application designed to simplify and support learning in nursing education. This application is based on the principles of dynamic formative assessment, a method that encourages student involvement in the formative assessment process and supports student learning through formative feedback.

The objective of this study is to develop a mobile application that enhances formative assessment practices in nursing education. The study aims to design an innovative assessment tool that meets the needs of both students and educators by integrating engaging and motivational elements. Additionally, the application is designed to be practical, user-friendly, and effective in supporting student learning through self-assessment and feedback mechanisms. By implementing this tool, the study seeks to optimize assessment processes, reduce teachers' workload, and foster an interactive learning environment that encourages student participation and academic growth.

For this evaluation, the user's satisfaction was assessed using the System Usability Scale (SUS) for the interactive system. This questionnaire consisted of ten items, formulated as affirmative sentences, on a 5-point Likert scale (1 = Strongly disagree; 5 = Strongly agree). Data from the questionnaire were processed using SPSS software. In addition, to encourage students to use the application, the guidelines of Keller's motivational model for learning were followed, which focuses on learner motivation during instruction that integrates ICT. This model proposes four steps for promoting and maintaining motivation in the learning process: attention, relevance, confidence, and satisfaction (ARCS).

In addition, feedback is provided through formative texts to consolidate learning and reinforce the application's benefits in students' minds. Finally, NursE-Quiz promotes collaboration, as any teacher can contribute to the database. Therefore, NursE-Quiz meets stakeholders' needs in formative evaluation by supporting students' learning through quizzes

and formative feedback, reducing teachers' workloads, and optimizing teachers' time. To evaluate NursE-Quiz, the authors conducted a usability test using the SUS questionnaire. It scored 80.5 out of 100 according to the scale interpretation mode. Therefore, the online system achieved an excellent acceptability score (Lajane et al., 2023).

BEsMART: Board Examinations Mobile Application Reviewer for Preservice Science Teachers using Space Repetition and Hypercorrection

In the Philippines, passing the Licensure Examination for Teachers is one of several requirements for obtaining and keeping a teaching license (Libman, 2009). The LET, or Licensure Examination for Teachers, is a standardized test of prospective teachers' knowledge and ability to provide a trustworthy structure against which their practice may be tested and confirmed, and to allow access to further professional development. This study developed and validated BEsMART, a mobile review application for preservice science teachers preparing for the Licensure Examination for Teachers (LET) that addresses challenges such as high review costs, inconsistent study habits, and difficulties with concept retention. BEsMART integrates spaced repetition for memory retention and hypercorrection techniques to correct misconceptions. Other features include question-based drills, multimedia resources, instant feedback, and progress tracking. A mixed-method research design was employed, combining ISO/IEC 25010 standards, the U.S.E. Questionnaire, and qualitative feedback from 9 experts and 48 preservice teachers. Using the Scrum methodology, the application underwent iterative development to enhance Usability. Results showed high functional suitability, Usability, and reliability, with overall ratings of 4.72 (experts) and 4.75 (users). Findings confirm BEsMART's effectiveness as a self-directed, accessible, and cost-efficient LET review tool, reinforcing mobile learning's transformative potential in professional examination contexts and paving the way for future improvements and broader adoption (Lasala et al., 2025).

III. METHODOLOGY

3.1 Research Design

This study employed the descriptive-developmental method of research. Descriptive research provides a comprehensive description of the situation by illuminating current difficulties or problems through data collection. It aims to describe various aspects of the phenomenon. It was often utilized to outline the characteristics and behavior of the sample population. This method effectively gathers information to develop hypotheses and propose associations (Dudovskiy, J., 2007).

Developmental research, as opposed to simple instructional development, has been defined as the systematic study of designing, developing, and evaluating instructional programs, processes, and products that must meet criteria of internal consistency and effectiveness. Developmental research is fundamental in the field of instructional technology. The most common types of developmental research involve analyzing and describing the product development process and evaluating the final product. A second type of developmental research focuses more on the impact of the product on the learner or the organization. A third type of study is oriented toward a general analysis of design development or evaluation

processes as a whole or as components. A fundamental distinction should be made between reports of actual developmental research (practice) and descriptions of design and development procedural models (theory). Although it has frequently been misunderstood, developmental research has contributed significantly to the field's growth, often serving as a basis for model construction and theorizing (Richey, R., 1994).

3.2 System Development Life Cycle

In the development of the StudySync mobile application, the researchers utilized the Scrum Framework. Scrum, a subset of Agile, emphasizes iterative progress, collaboration, user feedback, and adaptability. This framework will be structured into three main phases: the Pre-Sprint (Planning) Phase, the Sprint (Development) Phase, and the Project Closure Phase. Each phase was comprised of specific steps with corresponding deliverables to guide the development process and ensure the successful completion of the project.



Figure 2. System Development Life Cycle - Scrum-based Agile Methodology

3.2.1 Pre-Sprint (Planning) Phase

The Pre-Sprint (Planning) Phase sets the foundation for successful development. During this phase, the first step is to define the project vision by establishing the overall scope and objectives, and by understanding user needs. This step results in the creation of a Project Vision Document, as shown in Figure 3.

Project Vision: StudySync

for	Aspiring teachers and education students at Iloilo State University of Fisheries Science and Technology – San Enrique Campus
who	Who face challenges in preparing for licensure examinations due to limited access to structured, affordable, and interactive review materials.
the	The StudySync
is a	is a mobile-based learning application designed to provide an interactive, accessible, and user-friendly platform for LET (Licensure Examination for Teachers) preparation.
that	that offers centralized review materials, and performance tracking to enhance learning outcomes and improve review efficiency.
unlike	unlike conventional manual reviewers and costly review centers that restrict access to quality preparation.
our project	our project delivers a 24/7 accessible, cloud-integrated platform using Java, Firebase, and the Scrum-based Agile methodology, ensuring continuous improvement and adaptability to users' needs.

Figure 3. The Project Vision

The researchers then secured approval letters from the Dean of the College of Computer Studies, Capstone Adviser, and Campus Administrator to conduct the study, as shown in Appendix B. Afterwards, the researchers identified and assigned roles to the product owner, scrum master, and development team members, which composed the Scrum Team Roster, as shown in Figure 4.



Figure 4. Scrum Team Roster

Then the researchers documented all required features and functionalities of StudySync. The Product Backlog Document structured as user stories and technical tasks, each prioritized based on importance, as shown in Appendix D. Moreover, the Product Owner collaborates with the development team to evaluate and assign effort estimates to each backlog item, which helps in crafting a Sprint Plan that breaks down system features across development cycles, as shown in Appendix E.

3.2.2 Sprint Development Phase

The development phase consists of several short development cycles, typically ranging from two to four weeks. Each cycle follows a consistent pattern. It begins with Sprint Planning, where the team selects the highest-priority items from the product backlog, defines specific goals, and creates a Sprint Backlog detailing the tasks for that sprint, as shown in Appendix F. Throughout the sprint, Daily Standups—short, focused meetings—are conducted to track progress, discuss any issues, and coordinate daily activities. The outcomes of these meetings are recorded in Meeting Notes, as shown in Appendix G. During Sprint Execution, the development team collaborates to complete the tasks listed in the sprint backlog, applying agile practices such as task boards, version control, and continuous integration. At the end of each sprint, a Sprint Review is held where the team demonstrates the working and tested features of StudySync to stakeholders and gathers feedback for future improvement. This process is documented in a Sprint Review Report, as shown in Appendix H. After the review, a Sprint Retrospective is conducted. The team reflects on the sprint's process, discussing what went well, what could be improved, and how to enhance performance moving forward, leading to the creation of a Sprint Retrospective Report.

3.2.2.1 Creating New Project. After installing Android Studio, a new project was initiated by choosing the 'Create New Project' option. Next, the 'Empty Views Activity' template was selected, and the 'Next' Button was clicked within the 'Select a Project Template' window.

3.2.2.2 Building the Project. Within the "Configure your Project" window, the application was named 'StudySync'. The primary programming language selected for development was Java. The environment was configured to target a minimum SDK version of API 24 (Android 7.0, Nougat), with all other setup parameters retained at their default values.

3.2.2.3 Connecting Android Studio to Firebase Console. This step involved connecting the StudySync application in Android Studio to Firebase to establish the backend for our database and authentication services. The name 'StudySync' is the official identifier used by the Android operating system

and is the key element that links the app to its corresponding Firebase project for all backend operations and data storage.

3.2.2.4 Creating Splash Screen Activity. This component involved configuring a branding screen that appears as soon as the application is launched. The primary purpose of this screen is to provide a brief, visual introduction to the StudySync Application before the main content loads.

3.2.2.5 Creating Home Screen Activity. This Activity functions as the application's primary user interface.

3.2.2.6 Creating the Register Activity. This Activity is the interface for user registration in the application.

3.2.2.7 Connecting Firebase Authentication to Android Studio. This step involved modifying the build.gradle (Module: app) file to specifically define the project's external dependencies for user management. The Firebase Authentication SDK was integrated to ensure the StudySync application has the required technical foundation to handle user registration, login, and account security. This guarantees that when the application is built, it successfully pulls the necessary tools to connect to the Firebase backend, enabling secure and reliable user sign-up and sign-in workflows.

3.2.2.8 Initiating Firebase Authentication for User Registration. This interface is the backend dedicated to user and account management in the StudySync application. It serves as the control panel for users created through the Application's Register Activity.

3.2.2.9 Implementing Firebase Logic in the Register Activity. These methods handle client-side validation, Firebase Authentication, Firestore data storage, and local data saving. The coder verified that the Firebase Authentication dependency was correctly declared and synchronized with the project.

3.2.2.10 Creating the Email Verification Activity. This Activity serves as the interface for confirming the user's email address.

3.2.2.11 Creating the Log in Activity. This Activity is the interface for the user to Log In to the application.

3.2.2.12 Creating Landing Activity. The screen's purpose is to visually introduce the StudySync Application and its core mission statement.

3.2.2.13 Creating the Program Activity. The screen's purpose is to present the main subject areas and to integrate the necessary content so the user can select their specific focus for the practice exams.

3.2.2.14 Connecting the Firebase Firestore to Android Studio. To ensure the StudySync application has the required technical foundation to handle complex data management. This non-relational database enables the app to store, retrieve, and query user-specific data, such as exam history, scores, and analytics.

3.2.2.15 Initiating Firebase Firestore Database for Programs.

This involved visualizing the program content hierarchy directly within the Firebase Firestore Database console. This includes the three core structural elements that were implemented. The Programs Collection, which serves as the primary container, contains the individual documents created within that represent the major programs available for review, and the fields within each document that define the complete name of the selected program.

3.2.2.16 Creating the Professional Education Activity.

This involved configuring a screen that appears after the user selects the Professional Education program, serving as the gateway to subject selection for this category.

3.2.2.17 Creating the General Education Activity. This involved configuring a screen that appears after the user selects the General Education program, serving as the gateway to subject selection for this category.

3.2.2.18 Initiating the Firebase Firestore Database for Subjects. This step involved implementing the application's backend and visualizing the exam subject hierarchy directly in the Firebase Firestore Database console. This includes the three core structural elements we implemented to organize the subject materials: the Collection, the Documents, and the Fields. The subjects Collection acts as the container for all topics in the program. In this Collection, individual documents were created to represent the different subjects, and fields were defined to contain each subject's complete name and metadata.

3.2.2.19 Creating the Question Number Activity. This involved configuring a screen that appears after the user selects a subject from either General Education or Professional Education, serving as the gateway to selecting the number of questions before starting the quiz.

3.2.2.20 Creating the Exam Activity. This involved configuring the ExamActivity interface, which displays the subject name and serves as the primary module for the examination process.

3.2.2.21 Initializing the Firebase Firestore Database for Exam Activity. This step implemented the application's backend, which involved exam question data structure in the Firebase Firestore Database console. This structure confirms the use of three key elements: the question Collection, which holds all quiz items under a specific Subject Document; an individual document representing a single question; and the defined fields within that document. These fields include the question text, multiple-choice options, the correct answer key, and identifiers such as subjectId and programId.

3.2.2.22 Implementing the Exam Question Retrieval Logic. The next crucial step was defining the loadQuestionsFromFirestore() method, which dynamically fetches exam content based on the user's prior selection. This function orchestrates communication with the backend to retrieve a randomized, tailored set of questions.

3.2.2.23 Creating the Results Activity. This step involved configuring the ResultsActivity interface, which displays the subject-specific exam results, including the score, time taken,

and a container for the detailed question breakdown, serving as the final output module of the examination process.

3.2.2.24 Creating the Results Activity Scores and Breakdown Displays. The result text views and containers were defined to facilitate user review, allowing candidates to view the subject-specific score, the time taken, and a container for the question-by-question breakdown.

3.2.2.25 The Creating the Exam Analytics Activity Interface step in Android Studio involved creating the screen that presents the user's performance statistics. This involved configuring the ExamAnalyticsActivity interface, which displays overall average scores, program-specific analytics for Professional Education and General Education, and Bar Charts that visually represent subject-wise performance.

3.2.2.26 Creating the Profile Activity. The Creating the Profile Activity Interface step in Android Studio involved establishing the screen dedicated to managing and displaying user-specific information. This involved configuring the ProfileActivity interface, which displays a welcome message, a user profile icon, and includes a scrollable container for the user's quiz history, serving as the personal account management module.

3.2.2.27 Generating the Signed Android Application Package (APK). The next step in preparing the StudySync mobile application for deployment and installation involved generating the Signed APK file. This process formally bundles the compiled Java code and all resources into a single package. The image confirms that the application was successfully built and signed, indicating the final, deployable output.

3.2.2.28 Distributing the Application Package via Google Drive. This step after successfully building the Signed APK involved preparing the application for external distribution to the respondents. As confirmed by the image showing the location of the output file, the coder retrieved the finalized StudySync.apk file from its designated build folder. This definitive, ready-to-install file was then uploaded to a secure Google Drive link. This distribution method was chosen to provide easy and reliable access to the StudySync application for the external evaluators to install and test on their personal Android devices for the Usability Evaluation phase.

3.2.2.29 Generating and Sharing the Application Package via QR Code. The final step after successfully building and retrieving the Signed APK involved preparing the application for external distribution to the respondents. The developer first uploaded the finalized StudySync.apk file to a secure Google Drive link. To streamline the installation process and eliminate manual link entry, the coder then generated a QR code that was encoded directly with the URL of the uploaded Google Drive file. This method ensures that when the evaluators scan the QR code, they are immediately directed to the download link for the StudySync application, simplifying the installation and preparation for the Usability Evaluation phase.

3.3 Project Closure Phase

The Project Closure Phase wraps up the development process. The first step is Product Acceptance, in which the

Product Owner formally approves the final version of StudySync after ensuring it meets all predefined requirements. Next is Release Planning, during which preparations are made for the official system launch. This includes the system documentation and a User Manual, along with any necessary

training materials were developed, as shown in Appendix A. The system then undergoes Final Testing and Usability Evaluation, during this step, the researchers introduce the system to the end users, such as students and instructors, are trained to use it. Following this, the researchers utilized the System Usability Scale (SUS) to evaluate the application. The data collected were organized, analyzed, and interpreted according to the SUS framework. The system's usability was assessed using a standardized questionnaire developed by John Brooke.

3.4 Locale of the Study

This study was conducted at the Iloilo State University of Fisheries Science and Technology in Cabugao Viejo, San Enrique, Iloilo. The campus is known for its commitment in providing quality education and fostering innovation in fisheries and technology. Situated in a vibrant community, the university serves a diverse student population. It plays a significant role in the local development of knowledge and skills relevant to the industry. By conducting this study within this academic environment, the researchers aimed to gather valuable insights and feedback from students, faculty, and staff, ultimately enhancing the institution's educational resources and services.

3.5 Respondents of the Study

The respondents of this study consisted of seventy (70) fourth-year students for the School Year 2025-2026, including seven (7) students from BSED Mathematics, 21 students from BSED English, 21 students from Filipino BSED, and 21 students from the Bachelor of Science in Elementary Education.

3.6 Sampling Technique

To ensure comprehensive input from the target group, the researchers utilized Total Enumeration, which provided a systematic approach. The total population of the 4th-year students from the College of Education were 70 fourth-year students from the College of Education for the School Year 2025–2026 as respondents. To ensure fair representation across all academic programs within the college, the researchers consider the taking all of students in the College of Education. The total number of participants included 7 students from the Bachelor of Secondary Education Major in Mathematics, 21 from the Bachelor of Secondary Education Major in English, 21 from the Bachelor of Secondary Education Major in Filipino, and 21 from the Bachelor of Elementary Education. This approach ensures that the data gathered accurately reflects the entire population of fourth- year students within the College of Education.

3.7 Research Instrument

The application assessment was conducted using John Brooke's 1986 standardized questionnaire checklist, which consisted of 10 statements designed to gauge various usability aspects. The researchers used the System Usability Scale (SUS) to effectively evaluate the application's usability. This widely

experience. Respondents will rate each statement on a scale from "strongly agree" to "strongly disagree," providing a nuanced understanding of user perceptions.

Table 1. System Evaluation Usability Scale

recognized tool provided a reliable measure of user

Scale	Numerical Rating
Strongly Agree	5 points
Agree	4 points
Neutral	3 points
Disagree	2 points
Strongly Disagree	1 point

3.8 Data Gathering Procedure

The researchers first seek permission by writing a formal letter to the Iloilo State University of Fisheries Science and Technology – San Enrique Campus, requesting approval to conduct the study before developing the StudySync application. Once authorization was granted, the researchers conducted interviews with key stakeholders, including students and faculty members from the College of Education, to gather relevant information and data to inform the application's features and functionalities. During the interviews, a set of guiding questions will be used to help identify the specific needs and preferences of the intended users.

After collecting the necessary information, the researchers proceeded with defining the remaining system requirements, including tasks such as data encoding, user interface design, content layout, and editing of review materials. Once the application development is complete and ready for initial development. The researchers then request approval to the Dean of the College of Education and the Chair of the University Learning Assessment Center of the University to present the initial development and gather feedbacks about the application. When the application was ready testing, the researchers will facilitate a usability evaluation. A questionnaire checklist based on the System Usability Scale (SUS) by John Brooke (1986) will be distributed to the participants to assess the application's effectiveness, efficiency, and overall user satisfaction.

Prior to administering the instrument, the researchers presented a demonstration and provided a brief explanation of how to use the StudySync application. The demonstration included instructions on accessing the app, navigating its features, and managing review content. Participants then be given time to explore the application independently to ensure a hands-on experience before completing the usability checklist. All data collected during the evaluation process were tabulated and analyzed using the Application Usability Score to determine the StudySync application's overall usability.

Data Gathering Analysis

Appropriate descriptive statistical tools were employed to analyze the collected data, ensuring a thorough examination of the results.

The Application Usability Score was utilized to tabulate and evaluated the gathered responses regarding the usability of the application. The formula for computing the System Usability Scale (SUS) is: $SUS = (X+Y) \times 2.5$

Where:

X = the points for odd-numbered questions minus 5

Y = 25 minus the points for even-numbered questions

The evaluation process provides data that can be used to determine the usability of the system, with the average score being calculated to aid interpretation. Table 3 provides the scale used to interpret the system's usability.

Table 2. System Usability Scale

X	SUS	Percentile Range	Adjective	Acceptability	NPS
A+	84.1-100	96 – 100	Best Imaginable	Acceptable	Promoter
A	80.8-84.0	90 – 95	Excellent	Acceptable	Promoter
A-	78.9-80.9	85 – 89		Acceptable	Promoter
B+	77.2-77.8	80 – 84		Acceptable	Promoter
B	74.1-77.1	70 – 79		Acceptable	Passive
B-	72.6-74.0	65 -49		Acceptable	Passive
C+	71.1-72.5	60 – 64	Good	Acceptable	Passive
C	65.0-71.0	41 – 59		Marginal	Passive
C-	62.7-64.9	35 – 40		Marginal	Passive
D	51.7-62.6	15 – 34	OK	Marginal	Detractor
E	25.1-51.6	2 – 14	Poor	Not Acceptable	Detractor
F	0-25	0 – 13		Not Acceptable	Detractor

IV. RESULTS AND DISCUSSIONS

4.1 The Developed StudySync: A Licensure Exam for Teachers Review Application

The Developed StudySync: A Licensure Exam for Teachers Review Application was developed to help students and graduates from the College of Education by offering a more effective and engaging method of preparation through timed exams that replicated real exam conditions. After completing each exam, users received immediate feedback, including scores, questions, and answers, which helped them understand their mistakes and reinforce key concepts. By creating a user-friendly interface, StudySync aimed to offer a practical and affordable alternative to traditional review methods. This app not only provided a more engaging way to study but also gave candidates the confidence and readiness to succeed on their licensure exams.

4.1.1 The User Interface

The StudySync's user interface refers to the point of interaction between the user and the mobile application. It encompassed visual elements, such as screen pages, buttons, and icons, as well as interactive components, like sliders and menus. The UI facilitated user interaction and enhanced user experience.

4.1.2 The Application Icon. The application icon is added to the user's mobile screen after successful installation. The icon is represented by a logo designed by the developers, as shown in Figure 5. Clicking the icon automatically welcomes the user to the splash screen.



Figure 5. The Application Icon

4.1.3 The Splash Screen. The *Splash Screen* appears when the application is launched. It stays on the screen for up to five seconds, welcoming the user. It displays on the screen the application's name, StudySync, along with the logo designed by the researchers. This is shown in Figure 6.



Figure 6. The Splash Screen

4.1.4 The Home Screen. The *Home Screen* appears after opening the application. It shows the StudySync name and logo at the center. Below are two buttons, Register and Log In, that let users create a new account or sign in to their existing one. At the bottom, there is a short message that reminds users that the app is made for learning and information purposes only. This is shown in Figure 7.



Figure 8. The Home Screen

4.1.5 The Registration Interface. The *Registration Interface* appears when the user chooses to create a new account. It asks the user to fill in their username, institutional email, password, and confirm password. The screen also shows the StudySync name and logo at the top, followed by a Register Account button that takes the user to the email verification interface. This is shown in Figure 9.



Figure 9. The Registration Interface

4.1.6 The Email Verification Interface appears after the user has created an account. It informs the user that a verification link has been sent to their institutional email. The user is instructed to check their email, click the verification link, and then tap the Check Status button. If the email is not received, there is also an option to resend the verification link. This is shown in Figure 10.

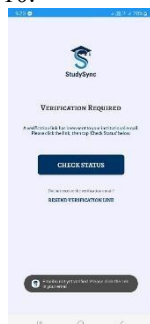


Figure 10. The Email Verification Interface

4.1.7 The Log In Interface. The *Log In Interface* appears when the user wants to access their account. It asks the user to enter their email address, username, and password in the provided fields. The StudySync name and logo are displayed at the top of the screen, followed by the Log In Account button, which allows the user to enter the application after providing the correct information. This is shown in Figure 11.

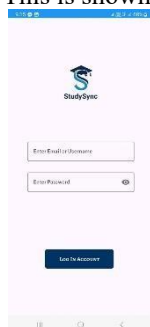


Figure 11. The Log In Interface

4.1.8 The Forgot Password Page. The *Forgot Password* Button page appears after the user clicks the Forgot Password button on the login screen. This page allows users to reset their password in case they forget it. The user is asked to enter their registered email address to receive a reset link. By clicking the Send Reset Link button, the system will send an email that helps the user create a new password. This is shown in Figure 12.

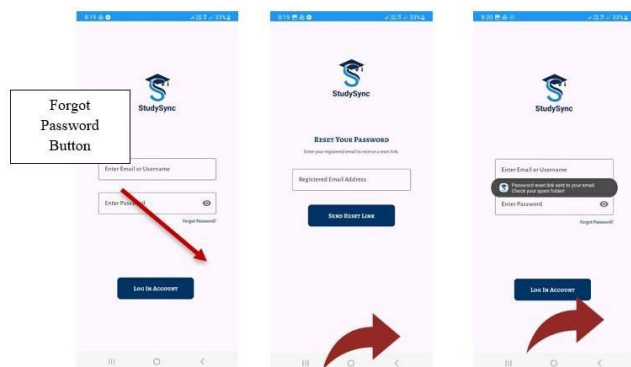


Figure 12. The Forgot Password Page

4.1.9 The Landing Page. The *Landing Page* appears after the user logs in to their account. It welcomes the user and

provides a short introduction about StudySync, explaining its purpose in helping users prepare for the Licensure Examination for Teachers. The page displays the StudySync logo, a welcome message, and a Proceed button that allows the user to move to the next section of the application. This is shown in Figure 13.



Figure 13. The Landing Page

4.1.10 The Select Program Page. The *Select Program Page* appears after the user proceeds from the landing page. It allows the user to choose between two programs, "Professional Education" and "General Education". Each program includes a short description to help the user understand what the section is about. After choosing a program, the user will be directed to the Subject Selection Page to choose a subject under the selected program. This is shown in Figure 14.



Figure 14. The Select Program Page

4.1.11 The Subject Selection Page. The *Subject Selection Page* appears after the user selects a program from the previous page. It shows a list of subjects under the chosen program, in this case, "Professional Education". The user can choose a subject such as "Teaching Profession", "Social Dimensions of Teaching", "Principles of Teaching", "Educational Technology", "Curriculum Development", "Facilitating Learning", "Child and Adolescent Development", "Assessment of Student Learning", "Developmental Reading", or "Field Study" to start the exam. This feature helps the user focus on specific topics they want to review or practice. This is shown in Figure 15.



Figure 15. The Subject Selection Page

4.1.12 The Choose Number of Questions Page. This page appears after the user selects a subject. It allows the user to choose how many questions they want to answer in the exam. The user can pick from 10, 20, 30, 50, or 100 items. This feature gives the user control over the length of their practice exam, depending on how much time they want to spend reviewing. This is shown in Figure 16.



Figure 16. The Choose Number of Questions Page

4.1.13 The Exam Interface. This page appears after the user selects the number of questions. It displays the question at the top of the screen with four answer choices below. The user can select their answer by tapping the circle next to their chosen option. At the bottom, there are buttons to navigate to the "Next" or "Previous" question. The remaining time is also displayed at the top, helping the user manage their time during the exam. This is shown in Figure 17.

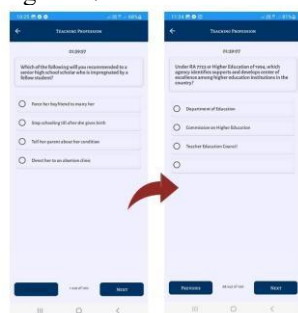


Figure 17. The Exam Interface

4.1.14 The Exit Confirmation Page. When the user taps the arrow at the top of the quiz screen, a message box appears asking, "Are you sure you want to exit the exam? Your progress will be lost." This message helps prevent the user from accidentally leaving the exam. At the bottom part of the message box, there are two buttons labeled "No" and "Yes," allowing the user to either continue the exam or confirm their exit. This is shown in Figure 18.

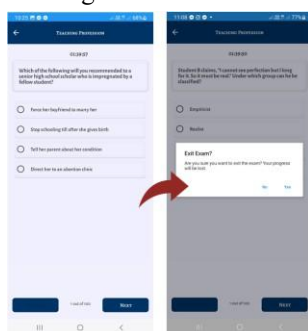


Figure 18. The Exit Confirmation Page

4.1.15 The Unanswered Questions Confirmation Page.

When the user tries to submit the exam without answering all the questions, a message box appears that says, "You have 100 unanswered questions. Do you want to submit anyway? Unanswered questions will be scored as incorrect." This message reminds the user that skipping questions will affect their score. Below the message, there are two buttons labeled "Go Back" and "Submit Anyway," allowing the user to either return to the exam or proceed with the submission. This is shown in Figure 19.

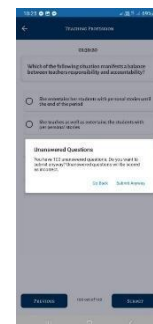


Figure 19. The Unanswered Questions Confirmation Page

4.1.16 The Feedback Message Page. The *Feedback Message Page* appears after the user submits the exam; the system will display a message based on the user's score. If the user passes the exam, a "Congratulations" message with celebratory confetti will appear. However, if the user does not reach the passing score, a "Better Luck Next Time" message with a sad emoji will appear on the screen, as shown in Figure 20. This feature provides simple, clear feedback to users about their exam results. This is shown in Figure 10.



Figure 20. The Feedback Message Page

4.1.17 The Feedback Message Page After the Time Runs Out. The *Feedback Message Page* appears after the user submits the exam. The system shows a message based on the user's score. If the user passes, a "Congratulations" message appears. If the user does not reach the passing score, a "Better Luck Next Time" message with a sad emoji is shown. In this case, the exam was automatically submitted because the time had already ended, even if the user had not finished answering. This is shown in Figure 21.



Figure 21. The Feedback Message Page After the Time Runs Out

4.1.18 The Exam Results Page. The *Exam Result Page* will appear, showing the user's total score, the time they spent answering the exam, and a detailed breakdown of each question. It displays whether the user's answer is correct or incorrect, along with the correct answers for reference. This helps the user easily review their mistakes and understand the correct responses, allowing them to improve in future exams. This is shown in Figure 22.

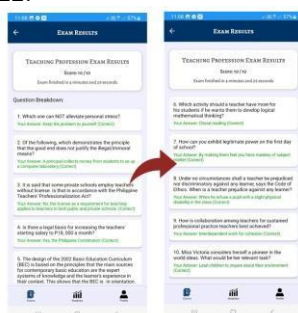


Figure 22. The Exam Results Page

4.1.19 The Exam Analytics Screen. The *Exam Analytics Screen* shows the user's results and performance across different subjects. It displays two sections, namely Professional Education and General Education, each with a bar graph showing the average scores for each subject area. The screen also presents the overall average score for both sections, helping the user understand their strengths and weaknesses. This is shown in Figure 23.



Figure 23. The Exam Analytics Screen

4.1.20 The Profile Screen. The *Profile Screen* shows the user's personal record and quiz results. It welcomes the user by name and displays their average scores for Professional Education and General Education. Below the greeting, it presents the quiz history, listing the subjects taken and the scores received for each quiz. This helps the user keep track of their progress and performance. This is shown in Figure 24.



Figure 24. The Profile Screen

4.1.21 The Set Profile Picture Screen. The *Set Profile Picture Screen* appears when the user chooses to upload a profile picture. It asks the user if they want to set the selected image as their profile picture, showing two options: "Cancel" and "Yes." When the user selects "Yes," the chosen image will be set as the new profile picture, and a message saying "Profile picture updated successfully!" will appear on the screen. This is shown in Figure 25.

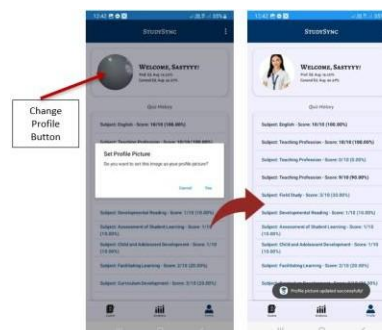


Figure 25. The Set Profile Picture Screen

4.1.22 the Logout Button. The *Logout Button* shows when the menu bar at the top of the screen is clicked, a logout button appears. When the logout button is clicked, the account is logged out, and the user is redirected to the home screen. This is shown in Figure 26.



Figure 26. Logout

Evaluation of the Usability of the developed StudySync: A Licensure Exam for Teachers Review Application

The developed StudySync: A Licensure Exam for Teachers Review Application was evaluated by seventy (70) fourth-year students from the College of Education, selected using Total Enumeration to ensure an appropriate sample size. The students were chosen accordingly to ensure the reliability of the result. The breakdowns of the results of the Respondents are found in (APPENDIX K).

The system received a grand System Usability Mean Score of 92.02, indicating an "A" grade and falling within the 90-95 percent range. This score was described as "Excellent" and "Acceptable" in terms of acceptability.

Additionally, the system received a Net Promoter Score of "Promoter", indicating that the respondents are most likely to endorse the evaluated system. The results of the system usability evaluation

Result of Respondent Evaluation

Respon- dents #	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	X	Y	SUS Scor e
1	4	2	4	2	4	2	4	2	4	2	11	15	65
2	5	1	5	1	5	1	5	1	5	1	20	20	100
3	5	2	5	2	5	2	5	1	5	1	20	17	92.5
4	5	2	5	2	5	2	5	2	5	2	20	15	87.5
5	5	1	5	1	5	1	5	1	5	2	20	19	97.5
6	4	2	4	2	4	2	4	2	4	2	15	15	75
7	5	2	5	1	5	1	5	2	5	2	20	17	92.5
8	5	2	5	2	5	2	5	2	5	2	20	15	87.5
9	5	1	5	1	5	1	5	1	5	1	20	20	100
10	5	2	5	2	4	2	5	2	5	2	19	15	85
11	5	2	5	1	5	1	5	1	5	1	20	19	97.5
12	4	2	5	2	5	1	5	1	4	1	18	18	90
13	5	2	4	2	5	1	5	1	5	2	19	17	90
14	4	1	5	2	5	2	4	3	3	4	16	13	72.5
15	5	2	5	2	5	2	4	2	4	3	18	14	80
16	5	2	5	2	5	2	4	3	4	1	18	15	82.5
17	5	1	5	1	5	1	5	1	5	1	20	20	100
18	5	1	5	1	5	1	5	1	5	1	20	20	100
19	5	1	5	1	5	1	5	1	5	1	20	20	100
20	5	1	5	1	5	1	5	1	5	1	20	20	100
21	3	3	4	2	4	2	4	3	4	2	14	13	67.5
22	5	1	5	1	5	1	5	1	5	1	20	20	100
23	5	2	5	2	5	2	5	2	4	2	19	15	85
24	4	2	4	3	4	2	3	2	4	3	14	13	67.5
25	3	3	3	3	3	3	3	3	3	3	10	10	50
26	3	2	5	2	4	2	5	2	4	2	16	15	77.5
27	4	1	5	2	4	1	4	1	4	1	16	19	87.5
28	5	3	4	3	4	2	4	3	5	4	17	10	67.5
29	5	2	5	1	4	2	4	2	4	2	17	16	82.5
30	5	1	5	1	5	2	5	1	5	1	20	19	97.5

System Usability Score 92.02

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATION

Summary

The StudySync: A Licensure Exam for Teachers Review Application is a descriptive–developmental research aimed at developing a Review Application for the students and graduates of ISUFST–SEC and determining its usability. Android Studio was used to develop the mobile application, and the SDLC Scrum-based Agile Method was implemented to guide the development process.

The researchers employed a descriptive developmental research design and used Total Enumeration to select the seventy (70) fourth-year students in the College of Education of ISUFFST–SEC. After the application was developed, it was tested and evaluated for usability using a standard questionnaire checklist by John Brooke (1986).

This data was analyzed using the System Usability Scale. The study was conducted on the ISUFST–SEC from August to October 2025.

Findings

The findings of the study revealed that:

1. The StudySync: A Licensure Exam for Teachers Review Application was developed using the SDLC Scrum-based Agile process.
2. The application can successfully generate questions and can be used as on-the-go tool in reviewing.
3. The application received a SUS score of 92.02, which means it was graded A+, within the 90-95 percentile range, described as "Excellent," and deemed "Acceptable" in terms of acceptability. The system also achieved the "Promoter" status based on the Net Promoter Score, indicating that respondents are likely to promote the system.

Conclusion

In conclusion, the study on Studysync: A Licensure Exam for Teachers Review Application has illuminated key insights into the system's development and user reception. Using the Scrum-based Agile System Development Life Cycle, the system demonstrated a robust, dynamic development approach.

The remarkable System Usability Scale (SUS) score of 92.02, which falls within the A+ grade in the 90-95 Percentile Range, underscores the system's exceptional usability. The Descriptor of "Excellent" reinforces its acceptability, affirming that the system not only meets but surpasses user expectations.

Furthermore, the Net Promoter Score (NPS) designation as a "Promoter" indicates that respondents who evaluated the system are strongly inclined to advocate and endorse its use. This collective endorsement, coupled with the high SUS score, establishes that Education Students and Graduates is not highly functional but is also widely embraced by its intended users. In essence, the findings affirm the system's success and desirability, positioning it as a commendable solution in the realm of Android-based licensure exam review applications.

Recommendations

Based on the study's findings, the following recommendations are proposed to enhance the application's usability:

1. *Utilization of StudySync: A Licensure Exam for Teachers Review Application*
The College of Education may encourage the students to utilize StudySync as a supplementary tool in reviewing for the LET.
2. *Uploading the Application to Play Store*
The application could be uploaded and published on the Google Play Store to make it accessible to a wider audience.
3. *Creation of a Tutorial Video*
Once after making the application available on the Play Store, a user-friendly tutorial video could be developed to guide students in using the system effectively and uploaded to YouTube for reference.
4. *Enhancement of the Analytics Feature*
The analytics page could be improved by providing more detailed performance insights, such as progress trends and subject-specified strengths and weaknesses, to better support user learning.
5. *Expansion of the Question Bank*
The question bank used in the time-simulation may be expanded and regularly updated to cover more LET competencies. Including explanations for correct answers could help reinforce learning.
6. *Improvement of the Profile and History Section*
The profile feature may be enhanced to allow users to export exam results, view progress indicators, and access a more organized quiz history for better performance monitoring.
7. *Development of an iOS Version*
An iOS-compatible version of the StudySync application may be developed to expand accessibility and allow both Android and Apple users to benefit from the system.

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PAULINE B. ESTOQUE is a dedicated student currently pursuing a Bachelor of Science in Information Technology at the Iloilo State University of Fisheries Science and Technology (ISUFST) – San Enrique Campus, with an expected graduation in 2026. She completed her Secondary Education (Junior and Senior High) at San Enrique National Comprehensive High School in 2022. Known for her commitment to her studies and her roots in San Enrique, Iloilo, she is currently developing her foundational skills in Information Technology to prepare for a career in the evolving digital landscape.



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RAFAEL A. BESANA is a dedicated Information Technology student currently in his third year of the Bachelor of Science in Information Technology program at the Iloilo State University of Fisheries Science and Technology (ISUFST) – San Enrique Campus. A native of Passi City, he is a graduate of Passi National High School. With an expected graduation in 2026, Rafael is committed to mastering technical systems and information management, aiming to leverage his education to become a skilled professional in the IT industry.



Dr. Wenda Panes is the Dean of the College of Computer Studies at Iloilo State University of Fisheries Science and Technology. A distinguished academic leader, she holds a Doctor of Education in Educational Management and is currently completing a Doctor in Information Technology at the Cebu Institute of Technology – University.

With over 20 years of experience, Dr. Panes has served in pivotal roles including Research and Development Chair, Management Information System (MIS) Officer, and BSIT Program Head. She is a recognized CHED K-12 Scholar and has been honored with both Teaching and Academic Excellence Awards. Her expertise bridges the gap between technical engineering and strategic institutional management, focusing on Quality Assurance, Data Privacy, and the advancement of Information Technology education.