University of Batangas

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College of Engineering

Industrial Engineering Department

Design and Development of a Digital Repository System for Student Research and Academic Project Outputs

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Chapter I

THE PROBLEM AND IT'S SETTING

This chapter presents the foundational elements of the study, including the introduction, statement of the problem, conceptual framework, scope and limitations, and definition of terms. It outlines the context and relevance of the research, providing a clear understanding of the study's direction. The content of this chapter establishes the basis for the system's development and highlights the academic and practical concerns it seeks to address. Each section contributes to forming a structured approach for the succeeding chapters. This chapter serves as a guide to the essential components that define the study's focus and boundaries

Introduction

As technology keeps changing how institutions run, moving from old-school manual methods to digital systems is now a must, especially in schools and universities. These places are expected to use solutions that make handling documents, submitting work, and managing information smoother and more efficient. With students creating so much research and projects, there's a real need for trustworthy systems to store and organize all this work safely. Digital systems don't just make things easier to access and lower the chances of losing data—they also encourage openness and help with looking back at academic work for future reference. Because of this, many institutions around the globe are starting to bring in digital platforms to keep up with the changing needs in education.

In the Philippines, many universities and colleges are now using centralized digital tools to handle academic submissions. These platforms are designed for senior

high school and college-level work, like theses, feasibility studies, and project reports. While some schools have fully adopted this change, others—especially at the department level—still stick to older, paper-based methods. These traditional ways often lead to disorganization, make it hard to access materials, and risk losing data permanently. On top of that, both students and teachers sometimes struggle to find past research that could help them with their own work or avoid doing the same thing over again.

Within departments that handle large volumes of academic submissions, the absence of a unified system often leads to inefficiencies in both archiving and evaluation. Faculty members may spend considerable time manually tracking submissions, while students have limited access to the work of their peers. These conditions hinder not only administrative productivity but also limit academic collaboration, research quality control, and institutional memory. The inability to easily verify or compare past projects may also affect the originality and relevance of current student work. Consequently, the demand for an organized and dependable submission platform continues to grow.

Academic digital systems need to address more than just storage space; they also have to be user-friendly, secure, and allow for access long down the line. These systems should be straightforward enough for students to figure out, yet powerful enough to handle behind-the-scenes tasks like approving things and organizing information. The aim isn't just to turn paper records into digital files, but to completely reshape how student work is managed into a system that's organized and can grow as needed. A really well-built system can act as a central knowledge hub, a tool for

assessing student work, and a source for ongoing learning. To make sure it actually works well, it has to be specifically designed to match the particular ways of working and requirements of the school or university it's serving.

To tackle these issues, this study suggests creating a Design and Development of a Digital Repository System for Student Research and Academic Project Outputs. The goal is to establish a single, easy-to-use platform where students can upload their final academic work, and faculty can effortlessly keep track of, access, and manage these submissions. By using practical software development techniques and meeting academic standards, the project aims to boost efficiency, safeguard the institution's knowledge base, and make student work more readily available. We see this system as a lasting solution that supports both the teaching and administrative aims of the department. In the end, it should help foster a more up-to-date, open, and well-organized academic setting.

Conceptual Framework

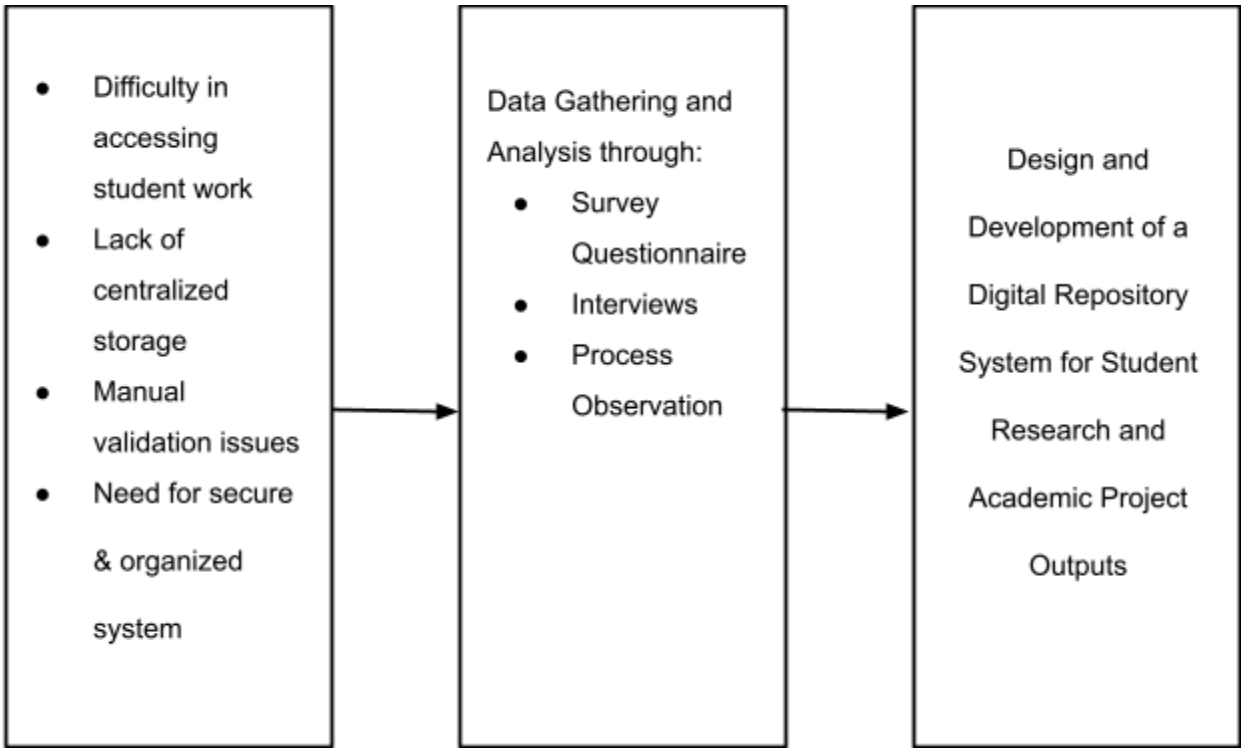


Figure 1. Research Paradigm

The research paradigm depicts the progression of the study, starting from data collection to the development of the system. In the Input phase, relevant data have been obtained through survey questionnaires, interviews, and observations of processes. These tools aimed to determine the existing approach for submitting, storing, and accessing the student research and academic project outputs. The Process phase consisted of analyzing the data gathered to determine the problems that the students and faculty usually encounter. Common problems found include difficulty in accessing the student work, no centralized storage, and manual validation of student work. These findings became the basis for defining the system requirements and for the plan in terms of the features of the proposed system. The researchers identify that the problems must be well understood before proceeding to the development of the proposed system. Finally, the Output phase resulted in the developed web-based Digital Repository System specifically for student research and project outputs. The system serves as a solution to the identified problems, featuring suitable, organized, and accessible storage of academic documents. The paradigm proves that solving institutional problems may be accomplished through user-oriented system development.

Statement of the Problem

The growing number of student academic works is hard to manage using manual systems. Many departments still rely on outdated methods, resulting in lost files, poor accessibility, and inefficient retrieval. This highlights the need for a more organized and reliable solution. A digital system can improve secure storage, ease of access, and

better tracking of submissions. This study aims to develop a platform that modernizes how student research is stored and accessed.

To guide the development of this system, the study seeks to answer the following research questions:

1) What are student research and academic project outputs currently submitted, stored, and managed within the department?
2) What common challenges do students and faculty encounter in the current submission and archiving process?
3) What system design can effectively address the issues in the current submission and archiving process?
4) What features should the system include to ensure organization, accessibility, and security of files?
5) What system will improve efficiency, usability, and accessibility after implementation?

Scope, Limitation and Delimitation

This study centers on the creation of a digital repository system designed specifically for managing student research outputs and academic projects. The main objective is to provide a centralized, web-based platform where both students and faculty can easily upload, organize, and access officially approved academic documents. The system incorporates essential features, including secure user authentication, role-based access (distinguishing between student, faculty, and administrator), comprehensive search functionality, document status tracking, and basic administrative review tools. At this stage, the system is intended primarily for

undergraduate and senior high school use within a single institution, with an emphasis on effective academic resource management and accessibility.

Importantly, the system is limited to handling finalized and approved academic submissions only. Drafts, incomplete projects, and non-academic materials are intentionally excluded from its scope. Advanced functionalities—such as plagiarism detection, automated grading tools, integration with external academic databases, or real-time communication between users—are not included in the initial design. Security is addressed through password-protected accounts and clearly defined access levels; however, more advanced, enterprise-grade protections fall outside the present scope. The initial phase of testing and evaluation will be confined to a select group of students and faculty members, with the goal of confirming core functionality and gathering early feedback, rather than pursuing a full institutional rollout at this time.

As for delimitation, the repository is developed solely for internal academic use, with no support for sharing content beyond institutional boundaries. The design purposely avoids broader learning management system features and third-party integrations, maintaining a clear focus on the repository's core functions in its prototype state. While additional features may be considered in response to user feedback, the initial version prioritizes essential capabilities related to submission, storage, and retrieval of academic work. User testing will be limited to specific individuals and departments, which means the results may not fully represent the institution's entire population or technical landscape.

Significance of the Study

This study is important because it addresses the ongoing problems in storing, accessing, and managing academic work in schools and universities. Many valuable research papers and student projects are often lost or underutilized due to the lack of a proper storage system. A digital repository system offers a solution that ensures these works are kept safe, organized, and easy to retrieve. It supports both students and faculty by making academic outputs accessible anytime. This improves research quality, avoids redundancy, and encourages scholarly engagement. The system also helps preserve institutional memory by archiving important academic contributions. Faculty members can monitor submissions more efficiently, while students can gain recognition for their work. It promotes transparency and consistency in handling research outputs. The project aligns with the goals of digital transformation in education. Overall, the study contributes to enhancing academic quality through better management of research data.

For Students. This system will offer a single, easy-to-use online hub where students can upload and check out their academic work. It makes it simple to find relevant research for reference, steer clear of repeating already-covered topics, and get ideas from previous studies. It also helps students feel proud of their work, knowing it's kept safe and can be accessed again later. Plus, it encourages better ways of organizing documents and understanding academic rules. Students will definitely benefit from having easier access and a more organized way to submit their assignments.

For Faculty members and Advisers. This system makes it much easier to keep tabs on submitted assignments and track how students are progressing. Teachers can

quickly see which projects have been turned in, which are still waiting, and which have been approved, saving them a lot of time and effort. It also simplifies the process of evaluating, comparing, and reviewing past work. Faculty can ensure the originality and quality of current submissions by looking through archives of previous ones. Overall, this system helps make the academic advising process more organized and efficient.

For Academic Administrators. This system is a really handy way to keep track of all the work students finish, organized by department or course. It gives you the data you need for reports, accreditation, and planning out future courses. Having everything digital means you save space, cut down on mistakes made by hand, and can pull up records instantly whenever you need them. Looking ahead, it also helps you make decisions based on solid data and compare your educational outcomes against others. It’s a perfect fit for modern schools aiming to go digital and manage their resources more efficiently.

For Future Researchers. This collection is set to become a really useful central point for looking over previous research and spotting areas where more study is needed. It'll be a great tool for choosing research topics, comparing how different studies were done, and sparking new ideas. Being able to see what others have already done can also inspire fresh thinking and help academics work together more easily. As more research is added over time, the institution's collective knowledge will keep expanding. This lasting effect really shows how vital it is to build a digital archive for ongoing learning and discovery.

Definition of Terms

To make things clear and easy to understand, we're defining some key terms as they relate to this study. These definitions should help readers get a better grasp of the technical and conceptual language involved in creating our digital repository system. We picked these terms because they're crucial for describing the system's features, users, and academic purpose. We explain each one based on how it applies to the project. This section makes sure everyone interprets these terms the same way throughout all the project documents.

Academic Output. This refers to the final research papers, feasibility studies, and project documents that students submit. Think of these as the official work products created by students, showing what they've learned and how they tackle problems. For this particular study, the system is built to store and manage these specific outputs digitally. It's important to note that this system won't handle personal files, drafts, or any unrelated material. These academic outputs are crucial for looking back at work later, for assessments, and for keeping official records for the institution. (Jaramillo, I., Brito, G., Pachay, A., & Carvajal, D. (2023))

Access Control. Access control involves the limitations imposed on who can view, upload, or manipulate files in the system. It guarantees that only authorized individuals such as faculty or administrative personnel are able to execute sensitive operations, including modifying or reviewing submissions. This is to avert unwanted access or data manipulation. The system enforces access levels based on the user type. It is vital for safeguarding data confidentiality and system security. (Farhadighalati, N., Estrada-Jimenez, L. A., Nikghadam-Hojjati, S., & Barata, J. (2025))

Common Field. The comment section provides a space for individuals to provide feedback or remarks on works that have been submitted to the repository. It acts as a medium for communication between the submitters and the reviewers. This functionality promotes an engagement between peers or between a student and an advisor, all without having to use other means of communication. The users can leave messages about advice or about the person whose work was submitted. It promotes exchange and dialogue between the academic community and academia through the system. (Phiri, L. (2021))

Digital System. A digital system is basically a software platform that uses technology to automate and make specific processes or workflows better. In this study, we're talking about an online application designed to handle how students' academic work is stored and found. This system uses web tech and can be accessed on any device with an internet connection. It lets users upload files, search for things, filter results, and manage content all securely. It's a much more efficient way to handle things compared to doing it all manually or with paper. (Richardson, J. C., Castellanos Reyes, D., Janakiraman, S., & Shams Ud Duha, M. (2023))

Document Uploading. This feature allows users to deposit academic materials such as theses or other scholarly works in the e-repository. It accepts file formats like PDF making the upload procedure fast and easy from machines or devices like laptops and mobiles. Upload is often undertaken by students while the process of reviewing is done by faculty or an admin person. The function is tracked for its completion and also time stamped in order to notify each user of the transaction. It offers a seamless

workflow of file handling and submission. (Tsipi, L., Vouyioukas, D., Loumos, G., Kargas, A., & Varoutas, D. (2023))

Download Field. Authorized users can download files from the collection to refer to or to cite them. The formats available for download are standardized (usually PDF) for consistency and legibility. This function fosters knowledge sharing in academia and makes it easier to study previous publications. Access is likely to be dependent on role or approval of the file. It facilitates academic referencing and promotes self-directed learning. (González-Pérez, L. I., Ramírez-Montoya, M. S., & García-Peñalvo, F. J. (2021))

Filter Function. The filter function enables users to refine their search results by using certain categories like author, year, program, or keywords. It facilitates the retrieval of relevant documents without the need to sift through massive amounts of data. Filters enable users to concentrate on only those results that matter to them. This feature is time-saving and enhances the usability of the system. It is vital for extensive databases with many items. (Verma, S. K., & Dwivedi, U. (2023))

Interface (User Interface - IU). The user interface is the visual design and navigation system of the repository system. It includes menus, buttons, forms, and the overall appearance users interact with. A UI that is easy to navigate helps users to understand and use the system. When interfaces are clear, users are less likely to make mistakes and will use the system more often. The user interface affects the overall experience of the user. (González-Pérez, L. I., Ramírez-Montoya, M. S., & García-Peñalvo, F. J. (2020))

Keyword. Keyword search enables users to input keywords to discover associated documents in the system. It functions by working in conjunction with filters to enhance the accuracy of the results. This capability is crucial for research purposes, allowing for the speedy identification of documents based on titles, abstracts, or content. Keyword functionality is of great benefit in terms of time-saving and promoting user engagement in the system. It is extremely useful, especially for applications in large and increasing repositories. (Oyighan, D., Ukubeyinje, E. S., David-West, B. T., & Oladokun, B. D. (2024))

Metadata. Metadata is the descriptive data contributed to each file that is uploaded, including title, author, course, year, adviser, etc. It allows work to be categorized, located, and identified within the repository system. It enhances searchability and organization of the files. It also allows faculty to view and cite the students' work. Proper use of metadata is essential to the overall system's structure as well as consistency in the data. (Osman, R., Yanti Idaya A.M.K., & Abrizah, A. (2023))

Mobile Responsiveness. Mobile responsiveness guarantees that the repository system adapts its design and behavior according to the user's device type, like mobile phones or tablets. This characteristic helps improve usability by allowing students and faculty to reach the system at any time and from any device. It increases flexibility, especially for individuals who do not always use desktop computers. The system needs to be operable on smaller screens. Mobile-friendly design supports inclusiveness and contemporary usage practices. (Miah, M. O., & Kong, J. (2024))

Plagiarism. Plagiarism is the inappropriate utilization or replication of another person's scholarly work without appropriate attribution. While the system might not incorporate automatic plagiarism detection, this issue is mitigated through authorship details and file authentication. Users are motivated to maintain academic integrity. Avoiding plagiarism protects the excellence and renown of the institution. Furthermore, it fosters contributions to original research. (Mulenga, R., & Shilongo, H. (2024))

Prototype. A prototype is a preliminary version of the system developed for demonstration, feedback, and testing purposes. It showcases the basic features and functions intended for the final system. Feedback from users helps refine the design and fix issues. Prototyping is essential before full implementation. It ensures the system meets user needs and functions correctly. (Luo, Y. (2024))

Repository. A repository is like a digital filing cabinet where you can store documents, files, and all sorts of data, making it easy to find and pull up whenever you need it. For this study, it specifically means the online system where students upload and keep their research and academic projects. This setup helps keep everything neat, searchable, and safe for the long term. It’s basically replacing old-fashioned filing cabinets with a web-based system that’s much more convenient. Plus, the repository is the main hub of the system that was developed. ((Somefun, T. E., Awosope, C. O. A., & Sika, C. (2020)))

Search Filter. Search filters allow users to narrow down their searches using certain criteria, such as course, year, keywords, or kind of work. It facilitates the effective search for relevant academic papers. It works alongside keyword search to provide more precise outputs. Users can check one or more filters at the same time. It

can help with the systematic conduct of the research and the search within the system. (Alqahtani, M. H., Almutairi, S. Z., Shaheen, A. M., & Ginidi, A. R. (2024))

Security. Security of the repository involves protecting it against unauthorized access, data theft, or manipulation. It encompasses functionalities like password protection, access based on roles, and encrypted storage of files. Adequate security bolsters user confidence in the preservation of academic works. It also ensures adherence to institutional data protection policies. (Ugwu, F. N. (2023))

Student Research. Scholarly work performed by students encompasses investigative, design-oriented, or project-related academic efforts that form part of the course of study. These efforts manifest as the completion of feasibility studies, theses, experimental assignments, etc. Records of these efforts are stored in the institutional repository as holdings of institutional memory. The preservation of student scholarly work underpins the growth of academic activity. Students also have useful reference material for undertaking subsequent endeavors. (Chukwueke, C., Nnadozie, C. D., & Okafor, V. N. (2020))

Submission Tracking. Keeping track of submissions means watching the progress of the documents students send in. This system shows things like whether a file has been uploaded, if it's been looked over, if it's been given the thumbs up, or if it needs some tweaks. This tracking feature lets both students and teachers see how things are going with their assignments. In this particular study, submission tracking is a really important part of the system to make sure everything is clear and that everyone is responsible. It also cuts down on any confusion and helps students and teachers communicate better. ((Cox, J. (2021)))

System Administrator. The repository's technical and content-related aspects are managed by the system administrator. They approve uploads, manage user access, and perform updates. Admins ensure the repository runs smoothly and securely. They also monitor content quality and address user concerns. Their role is key in maintaining system integrity and reliability. (Duggineni, S. (2023))

Upload Function. The upload feature enables users to submit electronic files to the database, typically in formats such as PDF. It provides forms for entering information such as the title, author, and abstract. Once uploaded successfully, these files are stored in a structured database. There may be a review workflow before files are publicly displayed. This feature ensures that the academic archive can be contributed to on an ongoing basis. (Dai, H., Wang, Y., Kent, K. B., Zeng, L., & Xu, C. (2022))

Usability. Usability refers to the ease and effectiveness with which users can navigate and utilize the repository system. A repository system that has high usability is one that is easy to use, responsive, intuitive, and requires little if any training for the user. Enhanced usability results in higher participation and fewer instances of user errors. Usability has a direct impact on user satisfaction and long-term utilization of the system. This factor is important in user-centered design. (Barua, T., & Rahman, M. (2023))

User Experience (UX). User experience is described as the general perception of users when they interact with the system. It encompasses interface design, usability, accessibility, and user satisfaction. A good user experience leads to regular use of the system and confidence in the system. UX indicates if the system fulfills the users'

practical needs. When designing systems, considering the user experience leads to the system lasting for a long time. (Ahsan, W. B. (2024))

User Role. User roles basically describe what each person can do and what parts of the system they can access. Think of roles like students, faculty, or administrators. Every role comes with its own set of permissions. For instance, students might be able to upload their work and see their own results, whereas faculty could review and approve those submissions. Administrators often have the highest level of control, maybe even handling system settings and user accounts. Clearly defining these roles helps keep things organized, secure, and ensures the data stays accurate. In this study, they're using a role-based system to make sure tasks and responsibilities are properly separated. (Kenfield, A. S. & Tracy, D. G. (2022))

Validation. Validation involves evaluating and finalizing submitted documents prior to their inclusion in the official repository. The purpose of validation is to guarantee that only documents that are credible and complete will be archived. Validation is normally carried out by faculty or admin personnel, either regularly or when submitting documents at a special request. Validating documents ensures that the content of the documents is of good quality. Validation will also confirm that the correct metadata and file formats are being used. Validation is necessary to ensure that a reliable academic archive can be preserved. (Woolcott, L., & Shiri, A. (2023))

Web - Based Platform. A web-based platform implies that the repository can be accessed via any internet browser without requiring the installation of special software. This enhances accessibility and cost-effectiveness of the system. Users can log in and interact with the repository anytime and anywhere. Web-based solutions facilitate

remote learning and flexible access. It is consistent with current trends in digital education. (Putra, S. D., Borman, R. I., & Arifin, G. H. (2022))

Chapter II

REVIEW OF RELATED AND LITERATURE AND STUDIES

This chapter explores relevant literature and studies that back up the creation of a digital repository system for academic work. Looking into existing research helps us pinpoint key ideas, approaches, and what's missing, all of which guide the direction of this study. It gives us insight into how things are currently done regarding storing, managing, and accessing student research. The review also shows how technology can make academic record-keeping and finding information much better. Ultimately, this chapter lays the groundwork for understanding why the proposed system is important and necessary.

Related Literature

Manuscript e-library and Repository System

The Manuscript E-Library and Repository System solves the long-standing problem of academic institutions in managing student research outputs using manual or traditional methods. In many schools, the process still starts with searching through printed files or physical archives which can be time consuming, inconsistent and prone to document loss. This is why we need a digital solution that preserves the value of manual processes while introducing a more reliable and accessible platform for storing academic materials. To solve this, a web-based repository system was developed to centralize the collection, organization and access of students' academic outputs. The system allows students and faculty to upload, search and retrieve research files in a structured digital environment. By moving to a centralized online database, the risk of losing documents is minimized and retrieval time is significantly improved.

Administrative users also have tools to verify uploads, monitor submissions and ensure the flow of documents across departments.

Features like title search, metadata tagging and secure login credentials ensures both convenience and academic integrity. According to Olabisi, P. O., Ogunkanmi, O. A., & Abdullahi, H. I. (2024), fast retrieval and quick-search tools contribute to better referencing and reduce redundancy. The system also restricts access to authorized users only, preventing unauthorized changes and maintaining the integrity of stored files. Beyond functionality, the platform ensures digital preservation by not letting valuable student research go unnoticed or forgotten. While many undergraduate outputs end up in storage shelves, the repository ensures their long term accessibility and visibility. In turn this promotes academic continuity, encourages future citation and supports collaboration across courses and disciplines. Through this digital solution, the institution promotes a more organized, transparent and future-ready academic culture.

Digital Repository Systems in Academic Libraries

Digital repository system in academic libraries initiatives are important for preserving and protecting student research as part of an institution's intellectual heritage. Many student outputs are full of insight and originality but get forgotten or underutilised when stored in outdated or manual filing systems. Digital repositories solve this problem by providing a structured space to catalogue and access past research. These systems make it easier to search, reuse and cite previous student projects so individual research and institutional scholarly development can continue. So

many universities have used digital repositories to build their research culture and cross disciplinary collaboration.

Digital repositories in academic libraries are most useful when they reflect the real demands of their users and their expectations. According to Verdugo P., Astudillo-Rodriguez C., Verdugo J., Lima J-F., and Cedillo S. (2020) state that system functionalities like metadata labeling, search filters, and intuitive interface increase user experience and satisfaction because they reduce repetitive submissions and facilitate the search for relevant materials. Built-in approval and verification mechanisms serve as a means to guarantee academic integrity by tracking file history and reviewer participation. Embedded these components allow repositories to not only store material but also to help standardize workflows and ensure quality in institutional knowledge management.

Libraries also are important to the maintenance of digital repository systems as they offer a context for the long-term management of scholarly outputs. Lin, D., Liu, Q., Cope, L., Castellanos, E., & Spiers, B. (2020). Digital repositories foster research trends tracking, knowledge gap identification, and interdisciplinary cooperation. Open access to the stored outputs promotes inclusivity and contributes to the overall development of the research environment in the institution. Having a united repository provides students and faculty members an easy way to discover both past and present scholarly works, thus encouraging sharing of knowledge and ideas. Digital repositories support the essence of research preservation and development.

Impact of Digital Repositories on Student Research

The impact of digital repositories on student research has been prominent with the ongoing implementation of centralized digital platforms in colleges and universities. These systems provide a systematic and organized setting where student outputs could be deposited, accessed, and reviewed easily and effectively. By allowing access to stored academic works, students are motivated to examine existing works, which enriches topic selection and averts repetition of research topics. Exposure to a broad range of past research encourages further academic inquiry and leads to more informative and quality research writing. In general, digital repositories help to support and compliment the academic environment by easing access to institutional knowledge.

Student motivation and quality of research are directly related to how usable and accessed these digital platforms are. According to Shukla, U.C., Lata, M., & Ratunaulu, A.F. (2023) affirm that platforms with user-friendly and intuitive interfaces become changing systems that could be adopted easily and used consistently by students and staff. Streamlined uploading facilities, well-organized platforms, and minimal technical challenges allow users to direct their focus on academic content rather than on barriers relating to the system. This ease of use lays the foundation for an active research culture and encourages engagement and productivity, which results in improved ways of making use of the repository, as well as improvement in research outcomes. When systems operate well and are accessible, satisfaction increases, leading to a notable improvement in academic productivity.

Apart from supporting individual students, digital repositories also play an important part in institutional research memory and academic advancement. Ogunleye,

A.O.O. (2023) emphasizes that the recognition and preservation of students' endeavors in an official system significantly increases students' confidence levels as well as motivation toward future academic pursuits, including publishing and contributing effectively to the institution's academic legacy. The permanence and ongoing access offered by digital preservation create a sense of ownership and pride in academic endeavors. Institutions benefit from these systems by keeping track of academic trends and benchmarking institutional performance, which appraises institutional research quality. Hence, digital repositories have dual roles when it comes to elevating individual academic endeavors and to fostering institutional excellence through consistent knowledge preservation and sharing.

User-Centered Design in Digital Repository Development

User-centered design in digital repository development is critical for ensuring digital repository systems are technically sound yet practical and usable, focusing on the specific needs of their users. Developers must expand their role beyond coding and architecture to include a deep understanding of student, faculty, and administrative interactions with the system—especially regarding the uploading, reviewing, and retrieval of academic outputs. An interface that is overly complex or not intuitive will likely lead users to avoid the system altogether, regardless of the technical brilliance underlying it. Systems designed from the ground up with users in mind often promote productivity by creating smoother workflows, and within an academic environment, systems that emphasize usability, transparency, and intuitiveness will be the ones most broadly adopted and sustained over time.

Systems designed through active user engagement during the design process lead to the most effective and user-friendly products possible. According to Banat, H. R., Palese, E., Gill, H. M., Staples, S., & Dilger, B. (2023) highlight that early-system user engagement will identify real-world usability and workflow challenges that development teams may overlook. Allowing students and faculty to interact with early prototypes of a system ensures that the final product is understood with the reality of daily academics. When users observe their own feedback apparently leading to system design choices, an overall increase in satisfaction and system acceptance occurs among these populations. Meeting users where they are, no matter their level of expertise with technology, is an essential step in creating an inclusive environment that meets the needs of both tech-savvy and less tech-minded users.

The cycle of iteration and refining enhances user-centered systems. According to Linsinbigler, V., Lowder, C., Mattson, J., Murphy-Lang, A., & LoPresto, S. (2021) discuss, the early release of prototypes followed by the incorporation of user feedback enables development teams to correct errors and interactability concerns ahead of full deployment. This early problem-solving approach can address issues before they compound into unavoidable roadblocks and can also serve as a means of fostering user trust in the system. Increased levels of engagement and advocacy become evident when academic users feel their voices are being heard and their concerns and suggestions are being expressed and addressed in the evolution of a system. User-centered design also reinforces the relationship development between designers and advocates from within the academic community, ensuring that at the end of the

design and refinement process is a product that reflects the actual needs and values of the institution.

Assessing the Effectiveness of Digital Repositories

Assessing the Effectiveness of digital repositories in higher learning is important to know their overall worth and significance. Such systems are designed to improve access, facilitate organization, and guarantee the permanent preservation of academic-wisdom outputs. One of the crucial indicators of effectiveness is the rate at which students and instructors utilize the entry platform to deposit, access, or retrieve articles. An increase in repository utilization is generally associated with higher research visibility and optimal organization of academic workflows. Such advances reinforce wider institutional objectives such as academic honesty, collaboration, and institutional memory.

User satisfaction is usually the most immediate measure of a repository system's effectiveness. A system that is easy to use, responsive to feedback, and open to a variety of interactions fosters constant interaction and regular use among students and academic staff. According to Per Krouska, A., Troussas, C., Mylonas, P., & Sgouropoulou, C. (2024), systems characterized by ease of use and practicality are usually associated with higher usage and acceptance rates. In contrast, platforms characterized by poor interface, limited features, or inaccessible procedures usually attract low usage. Such low usage may lead to underutilization of essential academic knowledge. As a result, whether a repository system's application is technical-based or user-centered should be carefully considered to achieve the optimal setting regarding the user objective.

Another aspect to consider regarding repository effectiveness is its role in extending the academic reach and impacts. Digital repositories mirror the accessibility of academic staff and student articles, usually beyond institutional spaces and into the wider world. Such actions are in promotion of scholarly visibility and academic dialogue. Digital repositories act as digital spaces for storage; they are also knowledge-sharing stations and institution memory. Centralized systems characterizing metadata tagging, keyword search, and content peeking facilitate the identification of quality work and reduce redundant research practices. Ultimately, an effective digital repository is a strategic asset in the pursuit of research excellence and contributes to a more involved and collaborative academic community.

Trends in Digital Repository Development

The trends in digital repository development and the fast-changing pace of technology in the academic environment. The first major trend is the increasing implementation of cloud-based services, responsive design, and Learning Management System (LMS) compatibility. These enhancements address the heightened demand for anytime, anywhere access and strive to provide users with consistent, seamless experiences across devices. With increased digital expectations, institutions ought to essentially upgrade their repository systems for sustainability, relevance, and user satisfaction. The focus has changed from mere file storage to the creation of scalable and flexible environments catering to contemporary educational and research needs.

The second trend consists of incorporating automation and artificial intelligence in the function of repositories. According to Singh, N. (2023), AI-driven tools, such as intelligent tagging, automatic categorization, and dynamic metadata generation, have

alleviated the administrative burden and enhanced content discoverability. These intelligent features enable effortless organization, management, and retrieval of documents, which improves system usability. Moreover, cross-platform accessibility has been emphasized to suit diverse user devices and preferences, reflecting a clear tendency toward user-centric design and streamlined system functionality.

At the institutional level, trends are shifting to interoperability and networking for collaborative academia. Universities are now beginning to link their repositories with national and international research platforms, opening avenues for wider dissemination and academic collaborations. Collective digital archives and federated search tools ensure research accessibility across institutional fences. These trends are transforming repositories from impenetrable data storages to active stakeholders in global scholarly community building. By promoting access, collaboration, and innovation, modern repositories are turning into crucial elements of academic infrastructure and long-term preservation of knowledge.

Related Studies

A research study looked at the creation of a digital repository system to enhance the management of academic research outputs in a postsecondary environment. The primary objective of the initiative was to make research products more discoverable, shareable, and organized for students and academic staff. Developers built a systematic database with user roles and search capabilities that allowed for swift access to scholarly works. The system comprised metadata labeling and upload authentication to ensure quality and uniformity. The findings revealed that students and

researchers were more inclined to submit and view prior work when a centralized digital store was in place.

Another study stated that applying the system greatly raised the rate of accessibility and aided in the reduction of redundancy in the submitted topics. Also, it provided the faculty with the easiest means of monitoring submissions and checking the output of the students over various terms. Digital utilization has enhanced not just the beauty of convenience, but it has also helped foster the quality of the students' research work. It has shown the positive impact of using repository systems on academic productivity and the long-term preservation of data. The finding of the study has close resemblance to the influence of the present research, which is to design and develop a similar system of its nature that would be beneficial to the department. (Rafique, H., Almagrabi, A. O., Shamim, A., Anwar, F., & Bashir, A. K. (2020))

A study explored the role of digital repositories in academic libraries, particularly for student research support and scholarly output management. The system in the study was a part of library services and offered organized access to undergraduate and graduate student research papers. The aim was to address issues related to organizing, storing, and retrieving academic work. The site included user-categorized submissions, search filters, and access restrictions for students and faculty. The results indicated that the availability of a digital repository enhanced research involvement and decreased the time spent on locating reference resources.

A study of digital repositories maintained by the library also improve the institution's capacity to keep academic contributions indefinitely. The system enabled librarians to manage submissions, verify content, and keep records more efficiently than

traditional approaches. It also fostered more transparency in academic output and created opportunities for teamwork by making past research more readily available. The study underscores the need to incorporate digital archiving solutions into academic services to enhance learning and research development. These observations reaffirm the benefit of introducing a digital repository system in academic departments that continue to depend on traditional practices. (Swaminathan, K. S. M. (2024))

A case study investigated the impact of user-centered design principles on the creation of digital repositories for academic environments. The research highlighted the importance of engaging students and faculty throughout the design process to create a system that reflects the actual behavior and expectations of its users. It employed a cycle of iterative development, systematically gathering user feedback to enhance interface usability and functionality. The repository featured personalized user dashboards, simple submission workflows, and designs that were responsive to different devices. As a result, user satisfaction and adoption of the system significantly improved during and post-deployment.

Another study found that by including users at each stage of the development process, common usability problems were identified and the repository was tailored to real academic work. The results indicated that when end-users believe their feedback is respected, they are more inclined to use and trust the system. It also revealed that academic users prioritized the repository's accessibility and ease of navigation, as well as the effectiveness of its searches. The research highlights the need to design with, not just for, students and faculty when creating digital systems. Its methodology is consistent with the goal of the proposed project, which is to develop a usable and useful

repository system for an academic department. (Banat, H. R., Palese, E., Gill, H. M., Staples, S., & Dilger, B. (2023))

The overall impact of the digital repository on student achievements indicates a positive trend in enhancing research engagement and quality among academia members. The metrics collected over the study period revealed how the repository served as a valuable tool for students to disseminate their work and engage meaningfully with their scholarly community. The educational institution's provision of a supportive digital infrastructure seems to have fostered an environment where students felt empowered to share their contributions. This, in turn, has the potential to create a more vibrant and interactive academic life that encourages ongoing communication, knowledge sharing, and collaboration within the university.

In a study, students appreciated repositories that were easily navigable, displayed information visually, and were device-responsive. The results also showed that convenient access to previous studies inspired students to refrain from repeating prior studies and strive for originality. The faculty observed that the platform reduced administrative burden and created more time for counseling and assessment. The deep impact of the repository was more than just convenience—it promoted an environment more focused on research. The positive implications of these studies support the main objective of the present study, which is designing a system that motivates student involvement while simplifying the submission and retrieval of research. (Timotheou, S., Miliou, O., Dimitriadis, Y., Villagrá Sobrino, S., Giannoutsou, N., Cachia, R., Martínez Monés, A., & Ioannou, A. (2022))

A study about the changing environment of digital repository systems described the innovations and continuing issues that academic institutions experienced. The study assessed the current practices for repository growth, especially how institutions adjusted to growing demand for easy access to well-organized academic outcomes. Numerous case studies showed that, even as technology continued to develop, funding barriers, system upkeep, and staff education remained hurdles to full implementation. The researchers indicated that institutions with explicit policies and a collaborative design process had more success in maintaining their repositories. The study indicated that strategic planning played an important role in ensuring long-term effectiveness and acceptance.

Another study states that there is still great potential to enhance access to research through digital repositories, particularly when these systems are applied in conjunction with a friendly interface and scale-up infrastructure. Their results revealed that institutions must be active in identifying users' needs on an ongoing basis, keep technical components up to date, and provide sufficient support for managing the repository. The authors also found that flexibility and adaptability are critical characteristics of successful systems. By addressing both technical and organizational issues, repositories can be effective instruments for storing and sharing institutional knowledge. These conclusions back up the development objectives of the current project, particularly with regard to foreseeing design concerns and developing long-term solutions. (Birner, R., Daum, T., & Pray, C. E. (2021))

Synthesis

Investigates college student engagement with library spaces and the meaningfulness of these experiences in relation to learning whose parameters exceed achieving a high GPA. By means of surveys and interviews with 27 students, the research found that virtually all students perceived library use as a support for their academic performance, even when they were not frequent visitors. The participants were typically defining success in relation to high grades; however, many of them included the acquisition of new knowledge and practical skills that would actively accompany them outside of the classroom. This demonstrates that students' perspective of success knows boundaries beyond numbers. Moreover, it encompasses personal and intellectual growth. The article emphasizes the role of the library not only as a site for study but also as a learning environment that enables deeper learning. It also demonstrates that, while students often attributed the improvement of their GPA to their frequent use of online resources, they nevertheless valued physical library spaces as places conducive to the development of focus and the preservation of active engagement with information. Such a dual role reflects a tendency evident in the sphere of academic support, where both the virtual and the physical resource communities contribute to student support. The authors argue that the evaluation merely on the basis of GPA outcome data is too simplistic and that listening to students provides a more complete picture of library value. Combined with quantitative data, the use of qualitative methods yields richer understandings of the library's importance to education and learning. In general, the paper is another evidence that academic libraries support students in pursuing a successful course of higher education experiences beyond the

traditional activities whose significance is limited to success as measurable achievement. (Scoulas, J. M., & De Groote, S. L. (2022))

Focused on creating and implementing a web-based digital repository for the management of scholarly publications in a tertiary institution in Nigeria. The authors noted that institutional repositories are important for enhancing the visibility of research outputs, preserving intellectual outputs, and providing centralized access to theses, data sets, and academic publications. Problems associated with print-based archives, such as limited accessibility, the gradual deterioration of archives, and inability to support many users at the same moment in time, motivated the authors. The objective was to put in place a system that would be more effective than manual systems of storage, enable fast searching and fast indexing, and support multimedia materials for a large community of users. Using the Object-Oriented Analysis and Design Methodology (OOADM), the authors ensured a system that was modular, scalable, and easy to maintain. Testing confirmed that the developed repository improved access to and management of scholarly materials. The solution is useful to enhance an institution's research impact while minimizing the blemishes of maintaining print-based archives. The study relates its work to global trends in academic libraries where institutional repositories (IRs) are now becoming a common tool for knowledge sharing. The authors stressed the usefulness of open-source repository software to build an affordable and flexible system to meet local needs and challenges. The project is recommended for practical guides on creating digital repositories to enhance the storage, preservation, and sharing of academic outputs. (Okon, R., Eleberi, E. L., & Uka, K. K.(2020))

Chapter III

METHODOLOGY

This chapter describes the method and procedure used in the development of the proposed system. It outlines the research design, data-gathering techniques, and sampling methods applied to evaluate the current practices. It also details the instruments used to collect data from users and stakeholders. Each procedure is selected to support the system's design based on actual needs and feedback. The contents of this chapter serve as the foundation for building an efficient and user-friendly digital repository.

Research Design

This investigation uses a detailed-growth research approach to tackle the present difficulties in submitting, saving, and handling student research results. The explanatory section examines current methods and challenges faced by both students and teachers. Information will be collected using questionnaires, discussions, and watching to get in-depth details about the existing submission and storage method.

The growth phase focuses on creating an online storage solution tailored to the issues discovered. This entails examining user necessities, system prerequisites, and features that guarantee usability, orderliness, and information security. Techniques such as benchmarking, system modeling, and prototyping will be applied to guide the system's development.

By merging explanatory and growth techniques, the study guarantees that the system is both fact-supported and remedy-focused. The plan seeks to build a practical, user-focused system that immediately addresses the research goals. It guarantees that the system is not only technically reliable but also in sync with user needs and organizational objectives.

Research Locale

The study will take place in an academic institution where student research and project outputs are regularly produced. This location is ideal due to the absence of a centralized system for managing academic submissions. It provides a relevant environment to examine current submission, storage, and access practices. Participants will include students and faculty involved in research activities. The setting allows for the evaluation and testing of a proposed digital repository system.

Respondent of the Study

The respondents of the study will include students and teachers who are actively engaged in producing, submitting, and overseeing scholarly work and project results. These individuals are selected as they are the main users of any system created for managing scholarly materials. The pupils will encompass those who have finished or are presently engaged in writing research papers or scholarly tasks, guaranteeing they possess pertinent experience with the current submission and archiving methods. Faculty members who supervise or evaluate these outputs will also be included, as they play a critical role in reviewing and managing student submissions.

These two categories of respondents should offer insightful opinions on the shortcomings and challenges of current approaches for dealing with scholarly documents. Their responses are critical for defining system requirements, functional needs, and enhancements that will influence the construction of the proposed system. Participants will be carefully chosen based on their direct experiences with the submission and assessment of scholarly products. This strategy ensures that the gathered information is pertinent, experience-based, and indicative of true academic processes. Obtaining perspectives from both students and faculty facilitates a more holistic comprehension of user needs, taking into account both the provider's and the reviewer's angles.

Participation in this study is entirely voluntary, and all information provided will be kept strictly confidential. The valuable input of respondents is essential for the effective development and successful implementation of a system tailored to their specific needs. Their feedback will directly inform the design of a repository system aimed at enhancing accessibility, organization, and security of academic outputs. Respondents represent the primary stakeholders who stand to benefit from streamlined submission and archiving processes. Their perspectives will play a crucial role in ensuring that the resulting system is both practical and user-friendly.

Data Gathering Procedure

The data collection process will adopt a thorough and systematic approach to ensure the gathered information genuinely reflects user experiences and institutional needs. Initially, the current methods for storing, submitting, and managing student

academic outputs will be closely examined. This involves both observing established workflows—whether manual or digital—and identifying persistent challenges or inefficiencies. Informal discussions with users may also be incorporated at this stage, as first hand feedback can illuminate issues formal observation might miss.

Subsequently, structured survey questionnaires will be distributed to both students and faculty. These surveys will probe into users' experiences, expectations, and the obstacles they encounter with the existing system. Questions will include a mixture of closed and open-ended formats, enabling both quantitative analysis and richer, qualitative insights. In addition to surveys, select faculty members may be invited for interviews to provide more nuanced perspectives on their administrative responsibilities and pain points. All participants will be informed of the study's purpose, and ethical guidelines will be strictly followed throughout the process.

After data collection, responses will be systematically organized and analyzed to detect recurring issues and prioritize desired features for the new digital repository. These findings will directly inform the design and development priorities for the system, ensuring it is aligned with actual user demands and operational realities. In short, by grounding the development process in careful, context-aware data gathering, the project will be positioned to deliver a practical, user-focused solution.

Data Gathering Instrument

This study employs a range of data collection tools to examine current practices, user needs, and system requirements necessary for creating a digital repository for student research and academic projects. By gathering input through these methods, the

research aims to ensure that the resulting digital repository aligns with both user expectations and academic standards.

Interviews. Faculty and staff members directly responsible for overseeing student research and academic project submissions shared their experiences with the current manual system. They described recurring challenges—difficulty tracking submissions, delays when searching for previous works, and the absence of a centralized repository for research materials. Based on their feedback, several administrative features were identified as essential for a proposed digital solution. These include functionalities for monitoring submissions, verifying content, and enabling efficient retrieval of approved research outputs.

Survey Questionnaire. The survey was crafted specifically for students, aiming to capture their perspectives on accessing and storing research outputs. It included a mix of closed and open-ended questions, enabling collection of both quantitative statistics and qualitative insights. The questionnaire targeted students' usual methods for finding academic materials, the challenges they face, and their preferences for system features. Notably, recurring issues—such as restricted access and disorganized storage—emerged from the responses. These findings directly informed the design of the digital repository, ensuring it incorporated user-friendly and practical features tailored to student needs.

Process Observation. Student research outputs revealed significant inefficiencies. It quickly became apparent that the workflow relies heavily on manual tracking, which frequently results in misplaced or unverified documents. Delays in

organizing, accessing, and retrieving files were common, highlighting persistent bottlenecks within the existing system. These firsthand insights underscored the necessity for a more robust, digital solution specifically tailored to resolve the practical challenges identified during the observation phase.

Data Analysis Tools

The process followed in analyzing data is crucial in understanding and deriving significant conclusions from the data gathered in the study. In this section, tools used for analyzing the quantitative and qualitative data collected through surveys, interviews, and observations are presented. The tools chosen were compatible with the data collected as well as the objectives of the research. With the use of the appropriate tools, the researchers were able to determine patterns, evaluate responses, and provide insights regarding the creation of the digital repository system. These tools ensured that the findings of the study are reliable, valid, and fall in line with the objectives stated in the statement of the problem.

Frequency Count and Percentage. This instrument was applied for the analysis of responses to closed-ended surveys. It establishes how frequently a certain response option was chosen by the participants. By translating raw observations into the order of magnitude of percentages, the investigators were able to quickly spot the most frequent responses given. This plays an important part in measuring the level of students' awareness, experience, and expectations regarding the repository system. Frequency tables and graphs were generated for the clear presentation of the distribution of the responses.

Descriptive Statistics. As descriptive statistics describe the average and distribution of numerical reactions, it encompasses statistical data like the mean, mode, and standard deviation, which offers a better understanding of user ratings and choices. These values assisted in realizing how students view the availability and efficiency of digital systems. Descriptive analysis provided an overview of the general trends of the data. It was beneficial in assessing the usability and significance of proposed system features.

Thematic Analysis. This tool was used on qualitative data from open-ended surveys and interview transcripts. It consists of searching for themes or patterns in qualitative data. The authors examined the responses and sorted the data into themes that represent the user's concerns and expectations. Issues like accessibility challenges, system enhancement proposals, and productivity troubles were emphasized. This approach enables researchers to express, in their own words, user experiences that were not explored by means of closed-ended questions.

Tabulation using Spreadsheet Tools. Spreadsheet applications like Google Sheets or Microsoft Excel were utilized to tabulate and compute survey responses. Tabulation was advantageous for sorting responses, calculating totals, and creating summaries of percentages. It allowed for simpler manipulation and visual representation of data. These applications also served to create graphs and tables for survey data presentation in Chapter 4. Tabulation facilitated the process of handling data for both quantitative and qualitative inputs.

Cross Analysis. Cross-analysis was performed to compare responses from various groups, such as students by year of study or students as opposed to faculty. It allowed the researchers to assess whether views on the digital repository were influenced by the user background. Variations in access, use, and/or expectations were observed among different demographics. This method was used to corroborate findings by matching them across types of respondents. It also facilitated a more focused understanding of what users need.

Chapter IV

RESULT AND DISCUSSION

This chapter presents the results obtained from the conducted research and provides an in-depth discussion of their implications. The data gathered from various tools such as surveys, interviews, and observations are analyzed to evaluate how well the proposed solution addresses existing challenges in storing, submitting, and accessing student academic work. Each result is examined based on the specific questions outlined in the statement of the problem. Connections are made between the findings and relevant literature to strengthen the interpretation. The chapter aims to offer insights that guide improvements in system functionality, usability, and overall effectiveness.

A. For Students

1. The student research and academic project outputs are currently submitted, stored, and managed within the department.

Figure 4.1 above shows the different types of academic output submitted by students under the department. The survey shows that the Capstone is the most submitted output by 80 respondents, or (77.7%) of the total respondents. Feasibility Studies (FS) have a good number of output submitted, which is by 64 respondents, or (62.1%). Thesis was submitted by 38 respondents, or (36.9%). Mini Research was submitted by 30 respondents, or (29.1%).

On the other hand, the submission of technical papers was by a small number of respondents, which was submitted by only 5 respondents, or (4.9%). Only 1 respondent or (1%) specified Business Plan in the other, specified category. The findings reveal that Capstone and Feasibility Studies are the main output required and submitted by students in the department. The Technical Paper and Business Plan are less submitted; it could either be that they are less required or optional to submit. In general, the survey results show that the research and academic outputs submitted by students in the department vary, but submission of Capstone and Feasibility Studies are the most submitted types. All these outputs have volume and require good storage. These could provide justification for improved storage or recording systems for these outputs.

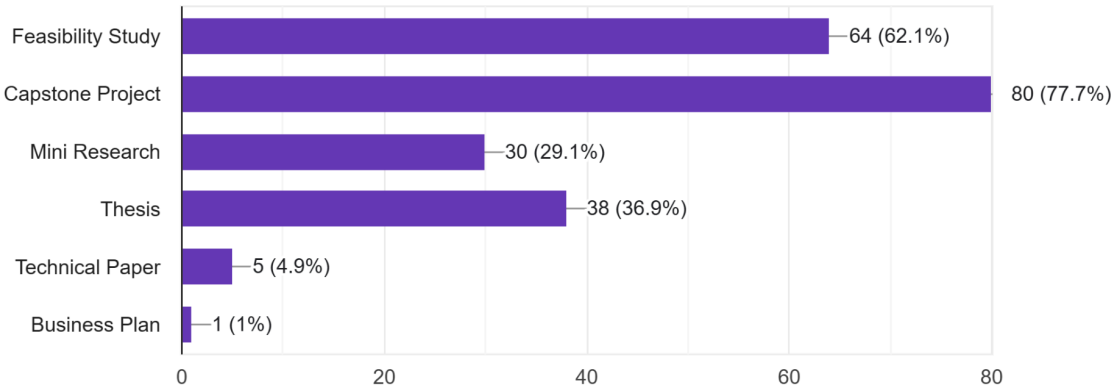


Figure 4.1 Types of academic outputs previously submitted by respondents

Figure 4.2 provides details regarding the students' experience of employing online systems to submit their academic works in the department. Among the respondents, 67 students (65%) stated that they have never utilized an online system

for submitting their academic works while 36 students (35%) reported that they were conversant with such systems. This indicates that traditional, manual submission options still prevail in the department.

The infrequent utilization of online submission systems indicates that digital systems for maintaining and managing students' output are not available or not well-acquainted. This situation may exacerbate the problems of organizing and retrieving research papers. Furthermore, this is indicative of an avenue that the department could pursue to engage in or fortify systems that could enhance access and usability. By promoting the use of online repositories and submission systems, the department could boost the digital proficiency of students as well. In general, the information underscores the need for an update in the submission methods to be able to offer more robust support for the students and faculty.

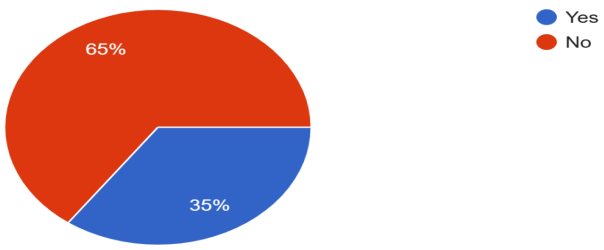


Figure 4.2 Respondents' experience in using online systems for academic submissions

2. **Students and faculty encounter common challenges in the current submission and archiving process.**

Figure 4.3 depicts the frequently encountered difficulties experienced by respondents in submitting academic outputs. The difficulty that has the highest number of responses is System or Platform Errors with 18.2%. This demonstrates that technical problems are a significant hindrance to the submission process. Next to it is the Internet Issues with 13.6%, which signifies that connectivity poses a major hurdle for students. Then, there are three categories that have equal data: Lack of Confirmation or Feedback, File Format or File Size Issues, and Manual Submission Problems with all having 11.6%. This implies that these factors are common among the respondents.

Next to these is Deadline Confusion and Miscommunication, which obtained 9.1% and indicates that the lack of clear instructions and deadlines is a factor in the submission process. Storage Limitations obtained the least data with 4.5% and manifests that storing files can be a factor, albeit to a lesser extent. Others got 11.4%, which entails the different minor issues that were not covered in the main categories. This suggests that most of the problems could stem from technicalities and communications. Addressing these problems, such as ways to improve the submission platform and internet connection, as well as clear instructions, which means something to clear up the major factors that can affect the submission process. All in all, these problems should be addressed for a more convenient submission process in the academic field.

Table 4.1 Common problems experienced by respondents during academic output submission

Category	Sample Response	Frequency
System / Platform Errors	Platform glitch, button malfunction, platform crashed during finals.	8
Internet Issues	Unstable internet, slow internet, typhoons	6
Lack of Confirmation / Feedback	Didn't get confirmation, no feedback from instructor	5
File Format / File Size Issues	File incompatible, file too large	5
Manual Submission Problems	Printing issues, inconvenient office hours, lost files	5
Deadline Confusion	Unclear deadline, last-minute changes	4
Miscommunication	Confusion who will submit, unclear instructions	4
Storage Limitation	Full Google Drive, limited physical storage	2

Others	Late submission, submitted wrong version, etc.	5

Table 4.1 shows the common problems faced by respondents in the submission of academic outputs, sample responses, and their corresponding frequencies. The most common problem is System or Platform Errors with a frequency of 8 that reported a platform bug, button malfunction, and system crash during finals. Internet Problems come in second place, with a frequency of 6, which was caused by unstable or slow internet connection and typhoons. Three types of problems—Lack of Confirmation or Feedback, Problem with File Format or File Size, Problem with Manual Submission—have the same frequency of 5, suggesting that these problems are equally faced by the students. To elaborate further, in Lack of Confirmation or Feedback, the absence of submission confirmation or feedback from the teachers was mentioned. In Problem with File Format or File Size, the respondents faced an incompatibility of file format or oversized file in submission.

For Problems with Manual Submission, the respondents indicated printing problems, inconvenient time of office hours, and even missing files. Problems due to Deadline Confusion and Miscommunication come next, each having a frequency of 4, which indicates that vague instructions and changing deadlines contribute to the problems in submission. Storage Limitations came in the least with a frequency of 2, which indicates the prevalent cases of full Google Drive storage and limited physical storage. Lastly, Others having a frequency of 5 include late submission in particular and uploading the wrong version of file in general. This information reveals that mostly the

problems are caused by technical and communication-related aspects and therefore needs to further improve in the system, guidelines, and feedback in order to enhance the process.

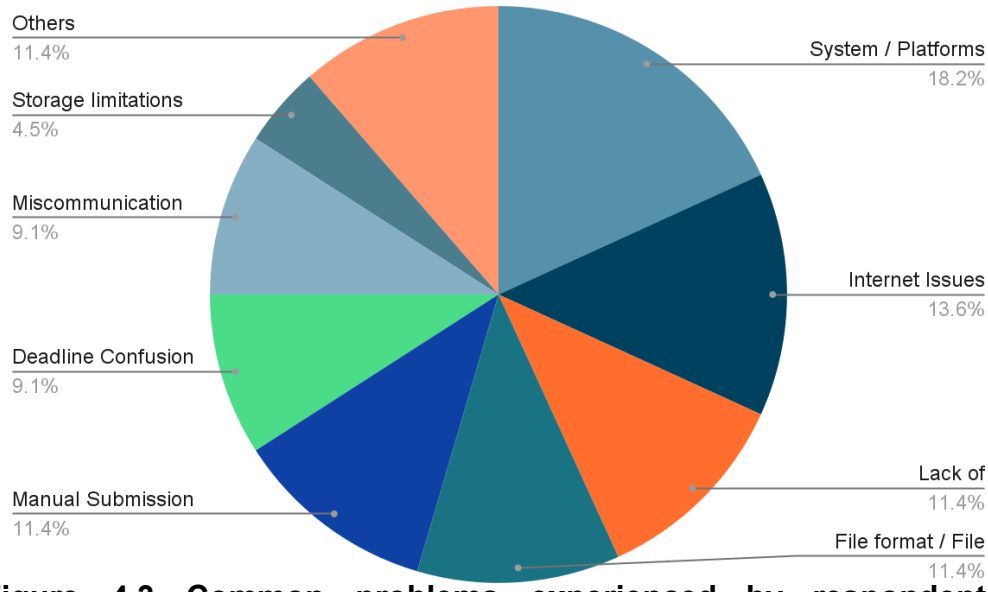


Figure 4.3 Common problems experienced by respondents during academic output submission

3. **A system design will be developed to effectively address the issues in the current submission and archiving process.**

Figure 4.4 shows the features that respondents prefer the most in relation to an academic output submission platform. The most preferred feature is User-friendly Interface and Usability at 16.3%, which signifies easy navigation and accessibility. Feedback and Grading Features and Notification and Reminders are both rated at 12.2%, suggesting that students are looking for timely feedback and notifications about their submissions. File Management and Version Control is ranked next at 10.2%, which indicates a need for proper management of several files and versions as they are

submitted. Features such as Plagiarism and Originality Tools, Accessibility and Reliability, Search and Archive Features, and Submission Confirmation and Tracking are all rated at 8.2%, hence indicative of their equal preference when it comes to efficiency and security tools. On the other hand, Additional Tools and Customization and Flexible File Handling are both preferred equally at 6.1%, hence showing a moderate interest in added flexibility and personalization. The least preferred feature is Group Work and Collaboration at 4.1%, which shows that most respondents do not necessarily prefer collaborative submission options. Overall, these findings show that students tend to prefer focusing primarily on usability, feedback features, and timely notifications when making use of an academic output submission platform. Based on the results, security features such as originality checks and confirmation systems are considered just as necessary. Overall findings reflect the need for a platform that is a blend of simplicity, reliability, and clear communication tools to ensure efficient academic output submissions.

Table 4.2 Features students would like to be included in the suggested digital repository system

Category	**Sample Response**	**Frequency**
User-friendly Interface & Asability	User-friendly interface, access via mobile devices, upload progress in real-time, instructional	8

	guide.	
Feedback & Grading features	Feedback section, comments from instructors, grading	6
Notification & Reminders	Deadline reminders, automatic notifications, SMS/email verification, integrated calendar.	6
File Management & Version Control	Auto-save draft, version history, preview before submission	5
Plagiarism & Originality Tools	Plagiarism checker, AI checker, grammar suggestions	4
Group Work & Collaboration	Group submissions, multiple contributors	2
Accessibility & Reliability	24/7 access, offline upload, unlimited storage	4
Search & Archive Features	Search function, folders per thesis program, access	4

	to past submissions	
Submission Confirmation & Tracking	Submission receipt, upload tracking, confirmation email/SMS	4
Additional Tools & Customization	Citations tool, deadline extension request, chat support	3
Flexible File Handling	Accept multiple file formats, large file support, detect duplicate submissions	3

Table 4.2 the features that survey respondents deemed the most important in a platform for submitting academic work, alongside examples of each and their associated frequencies. The feature rated highest is User-friendly Interface and Usability, which scored an 8 in frequency, including specific aspects such as real-time upload progress, access via mobile devices, and clear instructional guides. This demonstrates that ease of use and accessibility are of utmost importance to students. Feedback and Grading Features and Notification and Reminders are also important, both scoring a 6 in frequency, indicating that the respondents value timely feedback, instructor comments, grading transparency, and deadline reminders. File Management and Version Control holds the next rank with a score of 5, which highlights the need for

drafts that automatically save, version histories, and preview options prior to submission.

Other features such as Plagiarism and Originality Tools, Accessibility and Reliability, Search and Archive Features, and Submission Confirmation and Tracking Fare equally important, with a score of 4 each, indicating that students value reliable access, plagiarism detection, and submission confirmation as essential for efficiency and security. Additional Tools and Customization and Flexible File Handling were also deemed important, with a score of 3 each, indicating a moderate interest in customization options as well as support for a range of file types and sizes. The least common preference was Group Work and Collaboration, which scored 2, suggesting that collaborative submissions were not an overwhelming concern for most respondents. In conclusion, it is evident from the data that students value easy access, timely updates, and organized file handling, while still placing value on reliability and security. These results demonstrate the importance of creating a platform that balances functionality, accessibility, and user experience for academic submissions

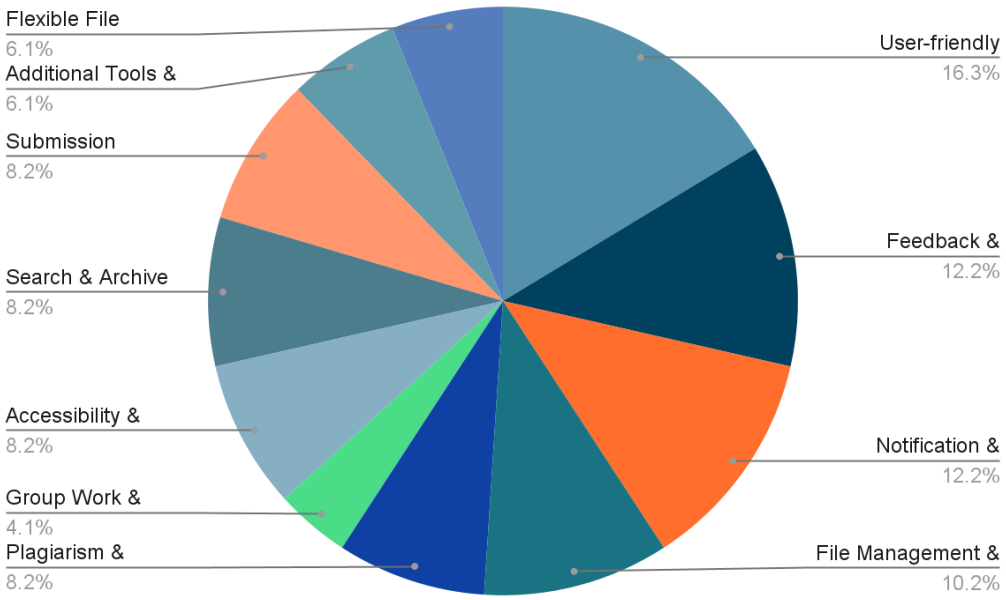


Figure 4.4 Features students would like to be included in the suggested digital repository system

4. **The system should include features that ensure organization, accessibility, and security of files.**

Figure 4.5 depicts the level of agreement among students regarding the need for data protection and document security in the proposed system. Among all the respondents, the highest number, students 40 (38.8%), expressed their full approval by selecting the highest rating. Another 49 students (47.6%) showed agreement by choosing option 3. This indicates that almost all of the participants think that security must be included in the system to be very important. Only a few students expressed lower levels of agreement, with 13 students (12.6%) choosing option 2 and just 1 respondent student (1%) selecting option 1.

These results clearly indicate the weight of value that students give to data protection, safe storage, and privacy when submitting academic outputs digitally. To satisfy students' expectations, the system to be established should require secure logins, access levels fixed for each user, encrypted storage of files, and a follow-up of the history of submissions that could lead to the prevention of any tampering. It should also provide backup and recovery features to safeguard against any data loss, and submission receipts and real-time upload tracking will assure students that their submitted work is stored safely.

Overall, the data illustrates that strong security measures are essential for ensuring students' confidence and for encouraging an organized and easily accessible handling of files in the digital repository.

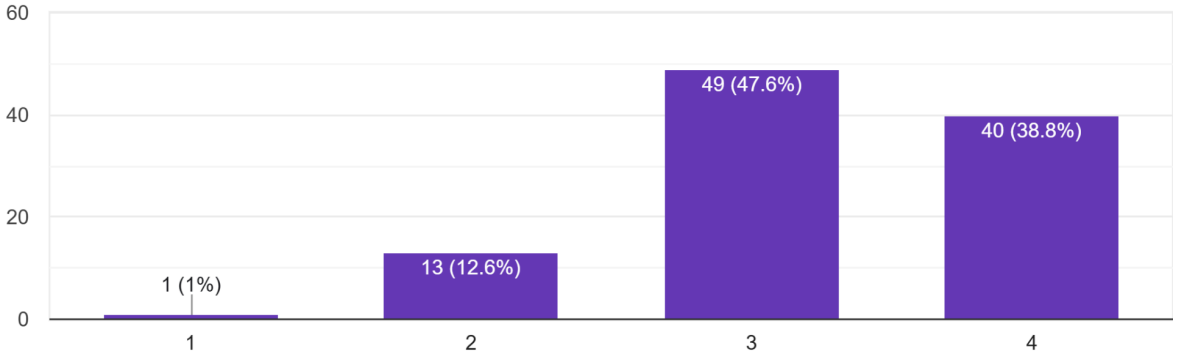


Figure 4.5 Consideration of data protection and document security in the proposed system

Figure 4.6 illustrates the opinions of students regarding the adoption of a digital system for uploading academic outputs. The majority of the respondents appear to be in favor; 42 students (or 40.8% of the total) chose Option 3, while 32 students (31.1%)

strongly agreed and chose Option 4. These two categories alone contribute to over 70% of the sample population, meaning that more than half of the students understand the benefits of such a scheme. A smaller number of students seemed not to be as convinced, as 27 students (26.2%) chose Option 2, and only 2 respondents (1.9%) chose Option 1, thus indicating that they strongly disagreed with the proposal. These results indicate that there are some individuals who may still have reservations about adopting such a scheme, but in general, the majority of students seem to be interested in the development of some sort of digital repository system.

Such a system could make it easier to store, organize, and classify files under certain subjects and types of projects. It could also make past submissions more easily accessible by enabling a search function. The system could enhance accessibility by providing 24/7 access to files, enabling mobile devices to access them, and allowing students to upload their documents easily. For security, the digital system should provide secure logins and password protection for personal accounts, files, and create different levels of access. The system could also automatically keep track of successfully uploaded documents by issuing receipts for each uploaded file to its owner. The data indicate that the majority of students believe that a digital upload system would be a practical means of increasing efficiency, security, and overall file management within the department.

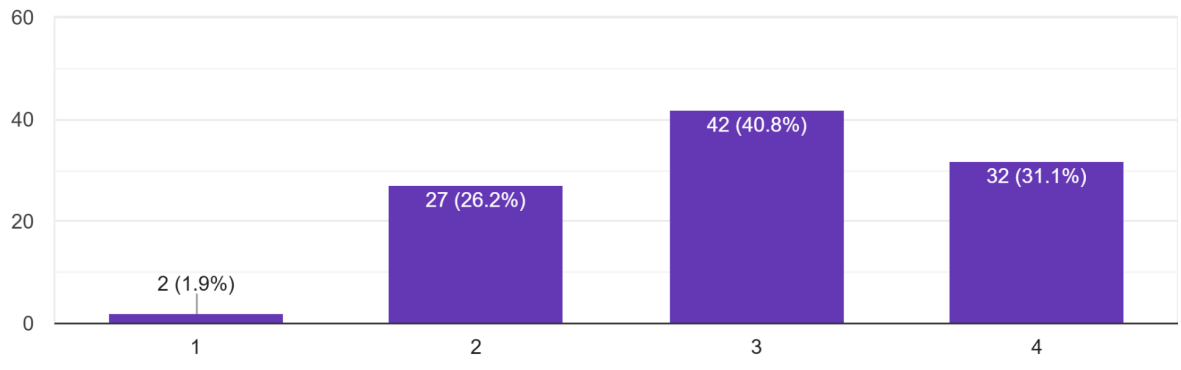


Figure 4.6 Preference for implementing a digital system for student academic submissions

Figure 4.7 shows students' answers on whether there should be a searchable digital repository for previous research outputs in the department. There was a general consensus among students as to the value of this feature: 51 respondents (49.5%) selected 3, and 41 students (39.8%) strongly agreed by choosing 4. Combined, these options account for almost 90% of the total, clearly indicating strong support for access to previous research outputs. Only a few students were a bit hesitant, with 11 (10.7%) selecting 2, and no one strongly disagreed.

These data indicate that students look for an organized system that makes old academic outputs searchable and accessible. A digital repository with a search function, organized folders, and filter options can help students to learn from old works and improve the quality of their outputs. This feature will also improve accessibility, allowing students to find examples and references at any time, including after class hours. As for security, proper access control will make sure only users allowed to view and/or download files can do so, protecting sensitive documents. Overall, the data supports adding a searchable digital repository so as to promote better learning, research continuity, and efficient file organization in the system.

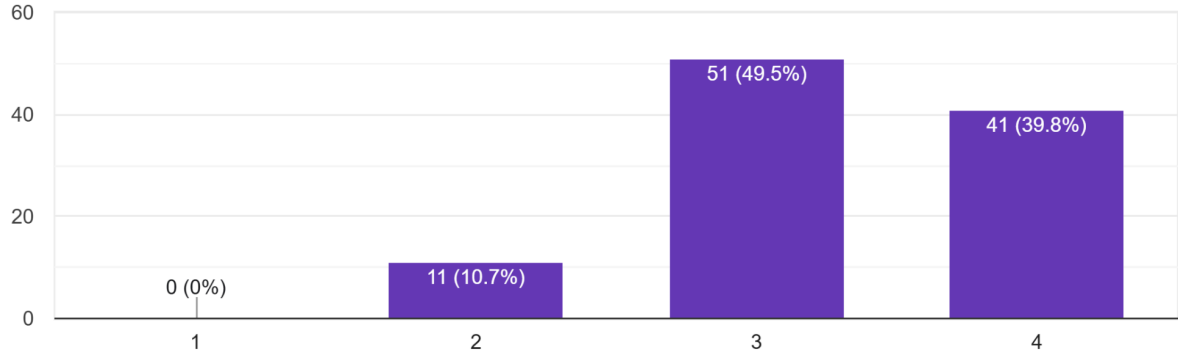


Figure 4.7 Students' desire to search and view previous research works in the repository

5. **The system will improve efficiency, usability, and accessibility after implementation.**

Figure 4.8 indicates students' opinions about whether there would be improvements in the storage and tracking of research outputs if there was a centralized system. A good majority of respondents were in favor: 53 students (51.5%) agreed by selecting option 3, and 35 students (34%) strongly agreed by selecting option 4. This shows that well over 85% of participants think that there will be benefits from a centralized system in storing and organizing academic outputs. Only a very small group of them was not so sure: 14 (13.6%) students chose option 2, and only one participant strongly disagreed.

These results also indicate that students are aware that a centralized system can improve efficiency tremendously since it can give them a venue where they can easily submit and find research outputs in one organized place. It will certainly improve usability since they will be involved in a system with an organized interface, submission history, and current status. From the accessibility aspect, they will be able to submit from anywhere they want since the system can support mobile access. Likewise, archived submissions can be accessed at any time of the day. In terms of storage, centralized storage means less risk of loss of files and easy retrieval of previous work. Overall, data seem to indicate that, with a centralized system, both students and faculty

can experience improvement in submission processes, i.e., submission processes can

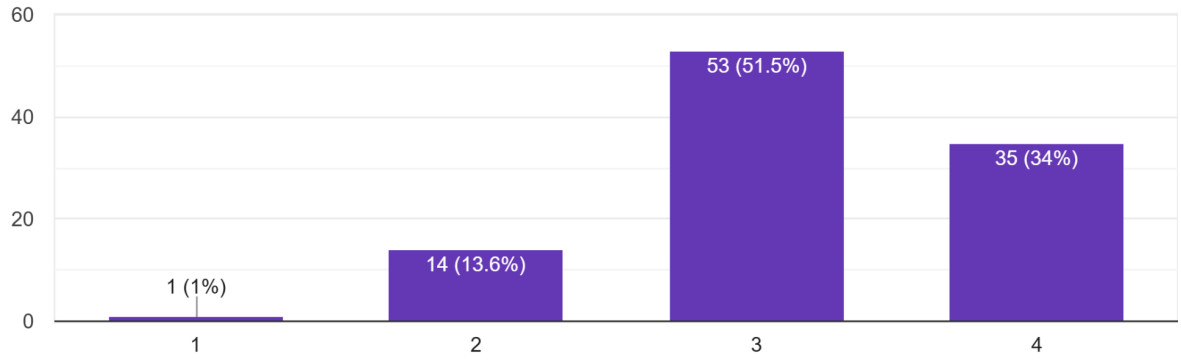


Figure 4.8 Enhancing storage and tracking of research outputs through a centralized system

Figure 4.9 presents students' opinions on whether a digital platform could aid in enhancing the quality of research submissions. Most respondents were in favor, with 58 students (56.3%) selecting option 3 and 30 students (29.1%) strongly agreeing to this option by responding 4. This demonstrates that nearly 85% of students recognize the benefits of digital tools in their academic endeavors. A smaller number of respondents were less confident about this; 13 students (12.6%) opted for option 2 while only two students (1.9%) chose option 1. This indicates that most students expect a digital platform will improve the way submissions are made and research outputs are stored by minimizing mistakes and delays.

In terms of usability, a digital platform could improve things by having clear instructions, an easy-to-use interface, and features such as upload tracking and confirmation of receipt. In terms of accessibility, such a system would allow students to

keep their work and submit it anytime even on off-hours. In terms of quality, tools like plagiarism checkers, feedback sections, and version history could provide direct assistance in enhancing the quality of research outputs. Overall, results show that students expect any digital platform to not only be convenient and fast but also serve as an aid in making better and more reliable research outputs.

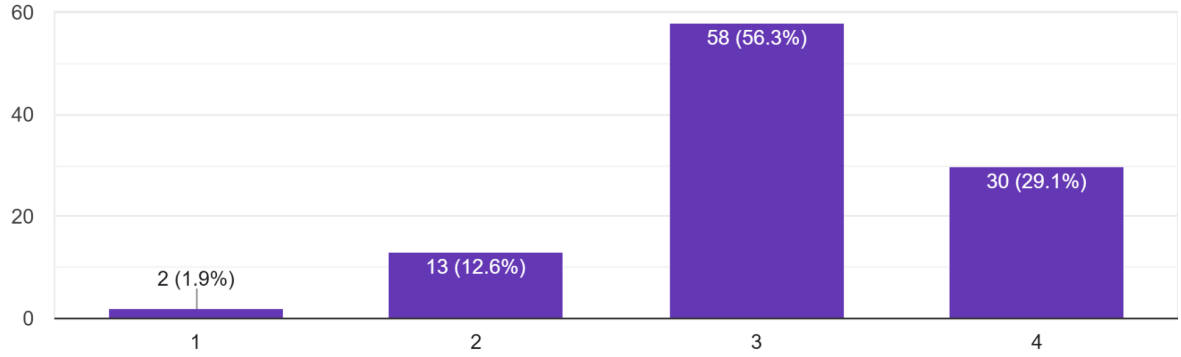


Figure 4.9 Enhancing research submission quality with a digital platform

B. For Adviser/Faculty

1. Lack of Monitoring System

In the current process of topic selection for capstone, feasibility study. thesis projects,and others research, there is no formal system to track and record which topics have already been proposed or approved. This absence creates a risk that students may unintentionally submit topics that have been handled before. When duplication happens, it can delay approvals and force students to revise or change topics at the last minute. Advisers often rely on memory, informal notes, or manual records, which are not

always reliable. Without an organized monitoring tool, it becomes challenging to maintain a complete history of past submissions. This can affect the adviser's ability to quickly check for overlaps and provide timely guidance to students. The lack of monitoring also makes it harder to identify trends or gaps in research areas over the years. As a result, both students and faculty may spend more time searching and confirming topic uniqueness than actually working on the project itself. This situation could discourage students from proposing creative ideas if they fear duplication. Addressing this problem with a systematic monitoring solution would make the process clearer, faster, and more reliable for everyone involved.

A dedicated digital monitoring system would act as a single reference point for advisers and students alike. It would list previously approved topics and mark those currently under review, reducing confusion. By making the topic history visible, advisers can make informed decisions quickly and accurately. Students would also benefit by being able to check for duplication before submitting their proposal. This system could also help the department track topic trends and encourage more diverse proposals. It would replace manual checking with automated searching, saving valuable time during busy academic periods. Moreover, it would build students' confidence by confirming their topic choice is unique and acceptable. In the long term, the system could become an archive of institutional knowledge, showing the evolution of research interests over time. Implementing such a tool would demonstrate a commitment to transparency and academic quality. Overall, the absence of a monitoring system is a gap that, if addressed, could significantly improve the capstone process.

2. Need for Repository or Centralized System

There is no one-stop digital archive to store all topics, research-related documents, and progress reports on the students' capstone, feasibility study, thesis, and others research, but instead, the information can be scattered or deposited in individual files, supervisor folders, or separate computers, which makes it difficult to retrieve. A centralized system would facilitate the listing of everything in one location and serve as a complete repository of the proposals, the final documents, and other relevant materials. This solution would allow the supervisors to verify topics early by consulting only one database instead of searching too far and wide in various files. Faculty can also identify either recurring themes or similar topics that need to be avoided for academic integrity purposes. The repository's access would be important for the students in that it would be a transparent way of showing already covered topics and topics still open for consideration, as well as storing the submitted abstracts and summaries, even citations to guide future topic proposals. Without such a repository to identify old and repeated topics, the students' submissions on topics already approved would be possible, and thus faster and less sloppy topic approval would be possible. A database for all topics would pave the way for an efficient tracking of whether the trends are changing or if those subjects remain appealing. Hence, the transition recorded in the proposed database would be an important resource that shows how the themes of the students' research can change over time within the department. Having a complete history can also be useful for accreditation purposes. A centralized system would ease the burden of office politics to help new faculty manage their students and new students orient themselves.

A repository could serve as a reference to extend unstopping students' research work, steer immature ideas in the right direction, and provide detailed accounts of prior research efforts on the section of the department. A repository should serve a purpose beyond collecting files; it should create the means for managing, tracking, and updating topics' records. This system can entail a finding aid for quickly reviewing related topics and triggering potential duplication automatically. There can also be narrowing criteria such as year, field, or supervisor to do navigation at ease. Digitizing all files will significantly reduce paperwork and minimize the risk of misplacing files. Having a digital repository provides the freedom for document mobility and easy retrieval.

In parallel, the repository can keep track of topic approval status and finalize approval stages so that the supervisor and students can know that the submission is still under review or needs some work. The database can be an asset in telling how much the students' inclination towards certain topics or materials ebbs and flows in the department. A well-organized repository would also help during the accreditation process by providing clear records of the students' output. Having everything in one place streamlines the training process of new faculties and students. Having a centralized system would promote an organized, efficient, and transparent administrative system for managing students' progress at the department. Its accomplishment can be crucial to demonstrate the department's aptitude and quality through satisfying examples of research activities and students' supervision. Finally, its suggested operation is a big leap to improvement for the department and for students' future research.

3. Accessibility for Students

The system must be designed to be easily accessible by the students at all times and from any place. Currently, students have to go to the campus or be dependent on the direct conversation with the mentors to verify whether the proposed topic is correct or not. It creates a delay in the process if the mentors are busy or the documents are not available. In this case, developing a system which is based on online will help the students in verifying their topics at any time. Mobile access is preferred as most students use mobile devices for school work and online research. If the interface is designed in a friendly manner, even students with no technical knowledge can handle the repository easily. With the increase in accessibility, students will be sure about their selected topic whether that is already taken or not. This may lead to less repetition of the same proposal. This convenience will also help the mentors by spending less time on the basic questions. Overall better access helps promote students' self-sufficiency needs thereby making the research process smoother for everyone.

The system should be provided with a secure login process so that students can access the information with security and also avoid any chance of corrupting the files. It should also give the access to the related topics or suggested readings which help the students to make their proposal more strong. Since students will always use the system with the internet, making use of the cloud technology will ensure that the repository is not bound to a single phone or place. This will give the maximum flexibility for the students. Inbuilt notifications or updates must be provided like the status of their topic or the deadline for submitting it. Mobile-friendly design ensures that the system can be used even with a slow internet connection or old phones. Making the access of the

system may lead to more students being proactively involved in the process of selecting the topic. This also creates a habit of verifying the information beforehand which leads to less duplication of data and saves time. Greater access will lead to better prepared proposals which lightens the work of mentors. In the long run, easy access promotes and helps elevate a culture of transparency and accountability in academic research. A system made with student accessibility in mind is vital to the success of the entire project.

4. **Web-Based Platform Preferred**

When considering how the system should be constructed, the advisor suggested that the primary development avenue be as a web-based platform. Online access via any web browser does not require the install or compliance with special software by users, which makes it applicable to students and faculty alike. In addition, many students are already accustomed to the institution of using online portals for classes, so making a web-based repository would be natural and a relatively easy transition. As opposed to downloading an app that requires the continual updating and maintaining of separate versions on separate devices, a single web-based platform is easier to manage. A well-designed web-based repository can also be set up to adapt to different screen sizes, providing access on computers, tablets, and smartphones. Maintaining the system in a web-based format also lends itself to students and advisors' ability to log in at any time, whether on campus or off, which can be convenient for both parties. This also tends to be less expensive since it does not include the need to maintain separate versions for Android or iOS.

In terms of schools with limited technical availability and/or economic constraints, a relatively simple website is easier to maintain as opposed to a complex multi-platform site, which tends to be labor- and time-consuming, making the entire endeavor simpler and easier to get off the ground and sustain in the long term. By choosing a web-based option, the department can easily focus on user experience and stability, which tends to be a priority when constructing a repository system. A web-based site can also be updated in real time, so new features and fixes can be put into place without requiring every individual user to download an update. This also means that security patches can be applied directly by the system admin without requiring user intervention, making it easier to keep student data safe. A web-based system can also make it relatively easy to link other systems that the school already uses, such as the school's email system or student portals, to create a seamless system of functionality.

Being able to support logins with the school's existing accounts and passwords can help alleviate the need for multiple passwords and usernames among students and ease the transition process. With proper designing, the site can also be responsive and fast enough for students with slow internet connections. A simple, clean design makes it easy for students to find the information they need without being overwhelmed. Advisors would be able to benefit as well since they could check topics and approve submissions from anywhere with internet access. Anything that could be desired such as search filters or analytics can be added relatively simply to a web-based program without starting from scratch.

Overall, making the choice to move forward with a web-based platform makes the system more flexible, user-oriented, and cost-effective while still being able to meet

the department's ultimate aim of a simple, easy, accessible, and sustainable system for all parties involved.

5. **From Process to Approval**

An effective topic management system should not only be a repository for information but should also include the entire process from topic proposal until final approval and final monitoring. Currently, after a student prepares a topic proposal, they usually have no idea of where exactly it is in the approval process. This results in confusion between the parties involved, a lot of repeated questions, and missed deadlines as the student is unsure of what the next step would be. The adviser pointed out that the system must comprise a clear definition of each step: proposal, duplicate check, adviser feedback, approval, and archive. By mapping out the steps in a digital format, the students will know the next step to take at all times, as well as the right time for this action. A transparent process will even help advisers track several submissions concurrently without missing any important information. An automated workflow can be set to notify the students about the status of their proposal. This will avoid a lot of unnecessary delays, and everyone involved will be kept up to date. A clear timeline set for every single step of the workflow will further keep the students accountable for meeting deadlines. And having the entire process in one consolidated system surely makes the management of topics much more organized and reliable.

Aside from monitoring the proposals, the system may even store the adviser’s comments and approvals for future reference. A digital record of them may help settle further misunderstandings regarding why a certain topic was approved or not. If

necessary, through the same system, the students may revise and submit a new proposal while everything is in one place. An organized workflow will cut down paperwork and it is easier to create reports on how many proposals are still in process. This can also further assist the department to determine where most of the delays usually happen in the approval process, so that existing procedures can be improved over time. The faculty can make use of the data in the system to make sure that no topics stay pending too long without being reviewed. This feature will be of utmost value for larger classes to keep lines of communication open and concise. Over time, this will become beneficial to engender trust between students and advisers as seeing that approvals are fair and consistent over time. By encompassing the entire process from proposal to final monitoring, the system can provide a complete solution rather than merely another file repository. A specialized workflow will add built-in capabilities that are at the heart of a trustworthy digital repository for capstone and thesis topics.

6. Define Current Problems and Challenges

Prior to developing any new system, the current difficulties along with the obstacles that the students and the advisers are facing must first be clearly stated. The adviser pointed out that there are high tendencies that the problems that arise in the submission of the topic comes from unclear records and duplicate proposals. If the problems using the system have not been identified, any system that would be proposed may not be the one that hampers the schedule of the flow. Identifying the systems problems allows the study to come up with research goals that could satisfy the objectives and at the same time, inside the range of reality. This also proves that the system is not entirely theoretical but answerable to the problems of the students and the

faculty. By stating the specific problems, the possible features of the system will be approached one by one. Identifying the problems would justify the very reasons why a system will be developed. This could also be a substance to justify everything to the other concerns like the head of the department, and they may lend their support. Identifying the problems gives the project team a guide how successful the project will be.

The identified problems will be the problems that the system will solve. Without these identified problems, the project may not come up with the solution to the problems that the students and the advisers are experiencing at the moment. The identification of the problems includes the technical and the practical problems. For example, the problems include the students are wasting the adviser's time by proposing topics that were already done and the adviser has no immediate system-generated notice of the duplicates when they are reviewing the topic proposed for them. There might also be problems like comments being lost during the approval of topics if there are different advisers in charge with the proposed topics. By writing down the problems faced by the participants of the study, the project team can determine which possible features will be developed first. This is to avoid wasting time developing features that are not really needed and will not answer the identified problems. Identifying the problems also helps in supporting the continuation of the study like when making a survey or an interview during the data gathering process. After identifying the problems, stating the problems will be much easier, making the entire project more focused. Identifying the problems gives the whole capstone project a better direction to pursue. In conclusion, identifying the current problems and challenges will become the foundation of everything. And by

setting the problems, establishing a good system followed by a good design and functionality will come after.

7. **Use of Survey Questionnaire**

The advisor emphasized that it was useful for the project to create a survey questionnaire to elicit the real experiences of students in the selection of research topics. Without primary information from students, it is difficult to ascertain what problems are frequently encountered or are pressing. A well-designed survey can be useful to gather honest reactions regarding the challenges students face, such as finding a distinctive topic, experiencing uncertainty regarding whether the topic they have chosen will be permitted, and so on. It can also uncover aspects that are not readily observable by the advisor, for instance, discouragement and frustration or spending hours manually searching for previous works. By formulating so-called clear and relevant questions, the project group can extract data that supports the need for creating a central system. Such data lends strength to the project proposal and proves that there is demand. The data can also be used to inform what features must be concentrated on most keenly in the system's design. For instance, if students are evidently conscious about duplication, then duplication checking must be a primary function. A survey is also a useful tool for estimating the extent to which students are satisfied with the current process, which reveals the gap that a new system should address.

The survey questionnaire should be orchestrated with care, and should be put through its paces before reaching students. The questions must be phrased simply and

plainly, and must deal with situations that students have actually experienced. Rating questions can be used to extract data, closed-ended questions, or even open-ended questions if further detailed suggestions are required. Once the data has been collected, the answers must be collated and assessed in order to elicit trends. Such trends can then be transformed into charts and tables to support the research objectives. The advisor's indication to develop a survey questionnaire makes it apparent that under its auspices, the project would be substantiated on data rather than conjecture. Presenting the survey results to stakeholders also assists to gain support for the distribution of the new central system by highlighting what students really require. Surveys can even be utilized at a later time to analyze how the new system is working. In this way, a survey becomes more than just planning. It evolves into a tool for the next stage: continuous improvement. In the end, implementing a survey questionnaire is indeed a relevant step that establishes a link between the system's design and its users, bringing it closer to a reality.

8. **User Requirement Analysis**

To create a good system, the advisor suggested making a proper user requirement analysis so that we know exactly what the students and the advisor want. This step ensures that the design of the system is not only based on assumptions but on real input. A user requirement analysis is required so that we can gather detailed information about what functions, tools, and features will be truly useful for students. For example, students may want an easy search tool to find whether the topic is duplicated quickly. The advisor may need a dashboard that displays all of the proposals and their statuses at a glance. From this information, we can prioritize what features are

necessary in the main system and what can be a bonus if there is time and budget. By asking the actual users — the students and the faculty, the project team can avoid building features that no one will use. A good requirement analysis also avoids a gap in the understanding between the developers of the system and the users who will use it on a daily basis. This step can also have interviews, workshops, or focus group discussions in addition to a questionnaire. All of this information can form a clear view of what the system needs to deliver.

The advisor mentioned that tools such as an affinity diagram can help group and sort all the ideas after the analysis. An affinity diagram is helpful because it can show the needs that are related to each other and make common themes more visible. This visual organization can help glimpse which features are related to which problem for the project team. It also makes the presentation of the findings to the stakeholders clearer and more convincing. By using tools that are structured, the user requirement analysis is organized, pragmatic, and susceptible to forgetting important matters in the design process and in the following development phase. The results can then be a reference for the developers when they build the user interface, the database, and the features. When the system matches what the users really want, it will surely be accepted and used properly. In the end, a good user requirement analysis will save time, stop redundancy, and result in a system that really solves the real issue in topic management.

9. Data Analysis and Charts

After collecting data from surveys and requirements analysis, it is necessary to sort and present the information clearly using charts and tables. The adviser noted that data in its raw form can be difficult to interpret or apply to decision-making. Through analyzing the responses and converting them into clear visuals, the project team can demonstrate precisely what students and advisers desire from the system. For instance, a chart could indicate the number of students who had difficulties with duplicated topics. Tables could display which features were requested most frequently or identify which sectors of the current process caused the most delays. Properly organized visuals help communicate results to stakeholders, such as the departmental chair or other faculty. These charts can also serve as evidence to support the inclusion of specific features in the system. In the case of the data presenting a clear issue, it makes defending the budget and effort to implement a solution far easier. Organized data facilitates maintaining consistency among all individuals involved regarding what the project aims to rectify.

Charts and tables can also direct developers in determining how to lay out the choices and tools of the system. For example, if the data reveal that students feel a simple search tool is preferable to complicated search filters, the design may then be concentrated on making that specific element effective. It can be documented and modified as more data becomes available, serving as evidence of whether the new system satisfies its expectations over time. Refined documentation helps keep track of the product's advancement and is beneficial when measuring improvements made after the system is deployed. When presented to an audience, clear visuals make the

explanations regarding the project considerably more persuasive. The graphic presentations also ensure no critical minutiae are overlooked during the planning of the system. It provides a clear record that can be referenced when either adding additional tools or features or modifying the system. Including charts and tables within the report signifies a professional, research-based competency of the project team. Overall, transparency in the results of the data is an important step in the process used to bridge user feedback and communication to practical design choices within the new system.

C. Student Interface

1. Student Login Page for Research Monitoring System

Figure 4.10 of the online academic repository system primarily welcomes students from different academic disciplines. With its simple yet elegant design, the page features input fields for email and password, enabling a robust verification process before granting users entry to the system. The interface showcases a combination of a dark maroon header, light blue background, and a yellow-colored login button to enhance visibility and user navigation. Accentuating the system's location, a small map is positioned beside the login area to aid users in getting to the system, especially those who might not be residents of the area. The simplicity of the page, needing just two credentials to log in, enhances accessibility and allows users quick access to the system. The interface further promotes user-friendliness with the inclusion of navigation links including “Home or Browse Topics,” “How It Works,” “FAQs,” and “Contact.” In summary, the login interface is critical in preserving the system's security by permitting only authorized individuals and undeniably valuable for providing easy and readily available access to a dynamic academic environment.

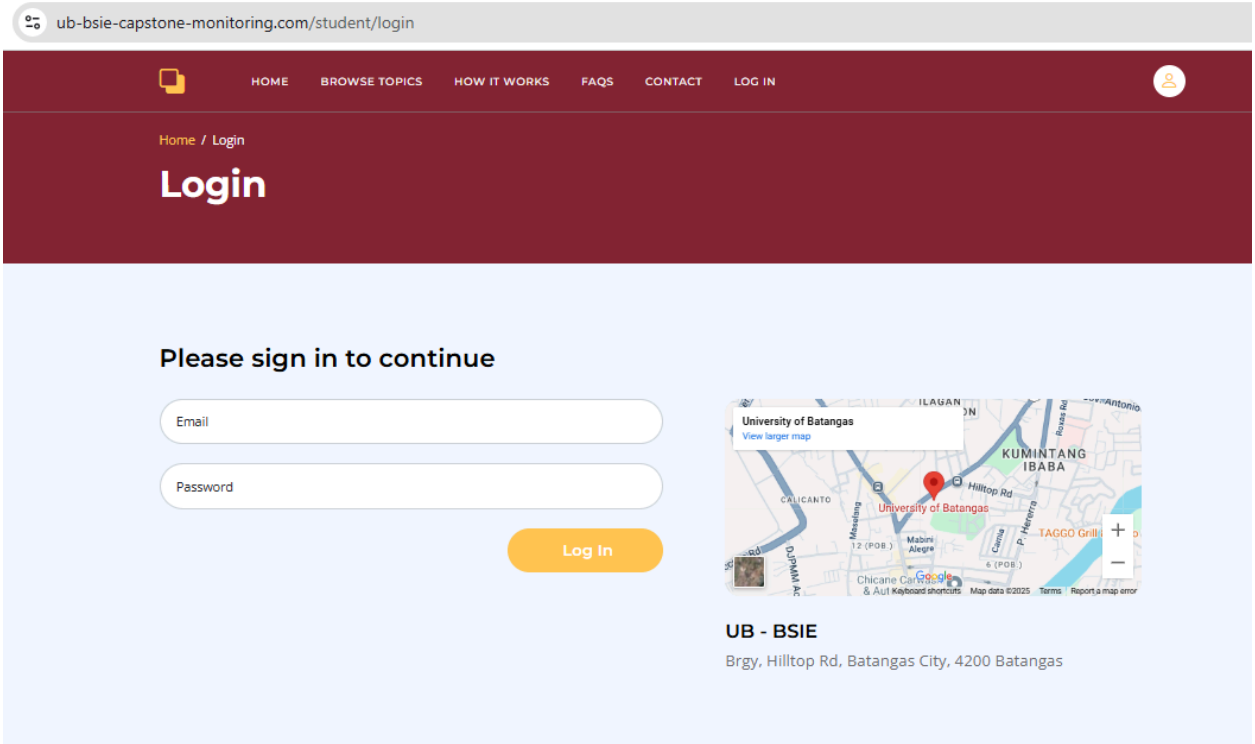


Figure 4.10 Login Interface for Student Researchers Accessing the Digital Repository System

2. Features and Design of the Research Tracking Platform

Figure 4. 11 online digital repository tool for students to hand in, track, and manage different academic output such as capstone project proposals, feasibility studies, and other academic works. It offers a central and organized space where learners can submit research output, view the status of submissions in real-time, and ensure proper documentation during the academic review process. Among its key features is a topic search function that allows students to find previously submitted research in their desired field of interest, helping to minimize topic duplication and promote originality. The system also offers a module that presents recommended topics

that provide solutions to practical academic or industry-related problems, promoting creativity in project creation. With the tracking function, students receive updates, notifications, and feedback from faculty evaluators, allowing them to keep up with deadlines and manage comments effectively. The platform is designed with a user-friendly interface, ensuring accessibility across devices, and making the navigation process easier for students when they use the system. By integrating submission, storage, and communication features in one tool, the repository optimizes coordination, reduces time for feedback, and keeps academic output accessible. Overall, the system helps students to promote academic honesty, improve research output quality, and align with institutional goals for transparency and academic excellence.

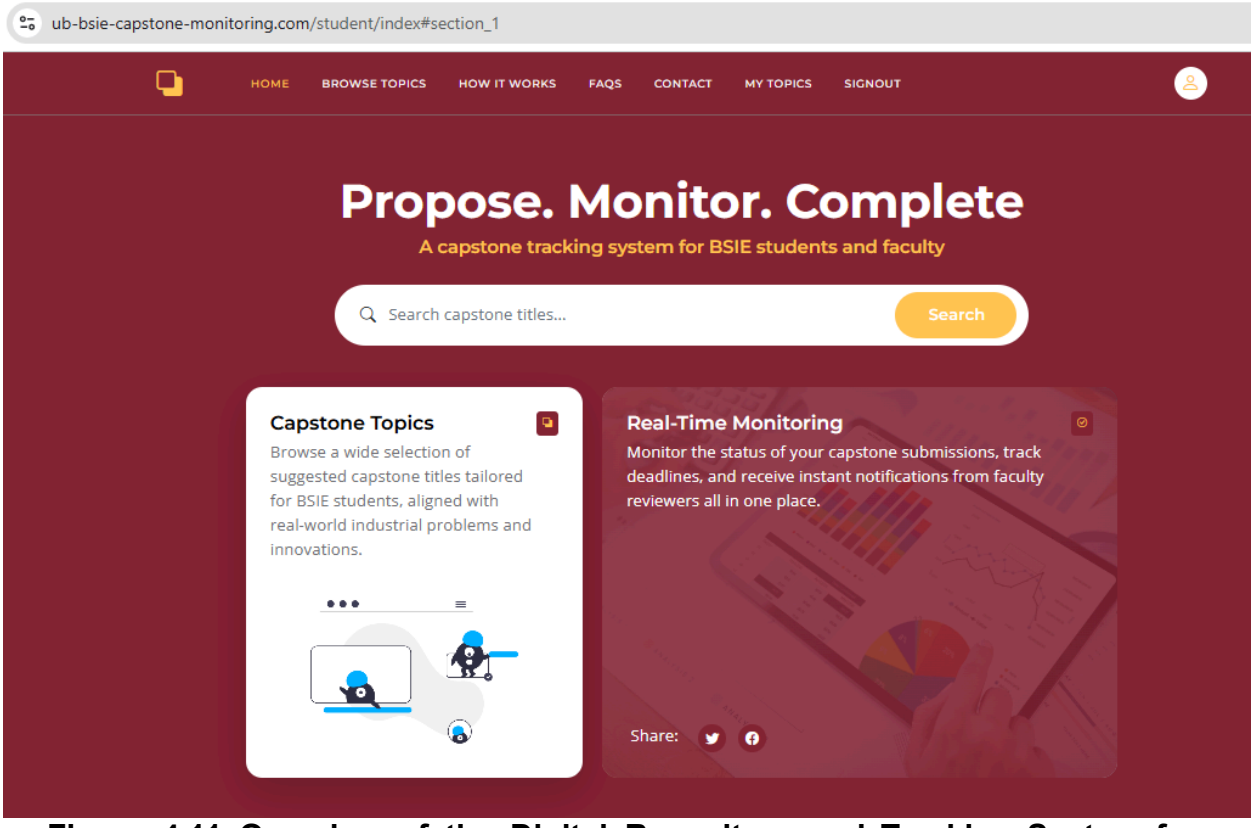


Figure 4.11 Overview of the Digital Repository and Tracking System for Student Researchers Across All Programs

3. Student Interface for Managing Submitted Research Topics

Figure 4.12 feature serves as a personalized dashboard within the digital repository system, allowing users to manage and monitor all submitted academic project proposals, including both capstone and feasibility studies. Through an intuitive and structured interface, users can view each submission's status, title, category, and type of research, helping distinguish between pending topics and those already reviewed by faculty evaluators. Submissions are presented in a clear table format, complete with interactive buttons such as *View Abstract* and *View Soft Copy* for accessing supporting documents. Dynamic status indicators, such as “Pending,” ensure users remain informed of their proposal’s review progress. Additionally, a prominently displayed *Submit a Topic* button allows users to propose new research directly from the same page, encouraging continuous engagement with the system. This feature streamlines the submission and tracking process, reduces redundancy, and strengthens communication between students and academic reviewers. By consolidating research management functions into one interface, the *My Topics* section contributes to the overall efficiency, transparency, and usability of the digital repository platform.

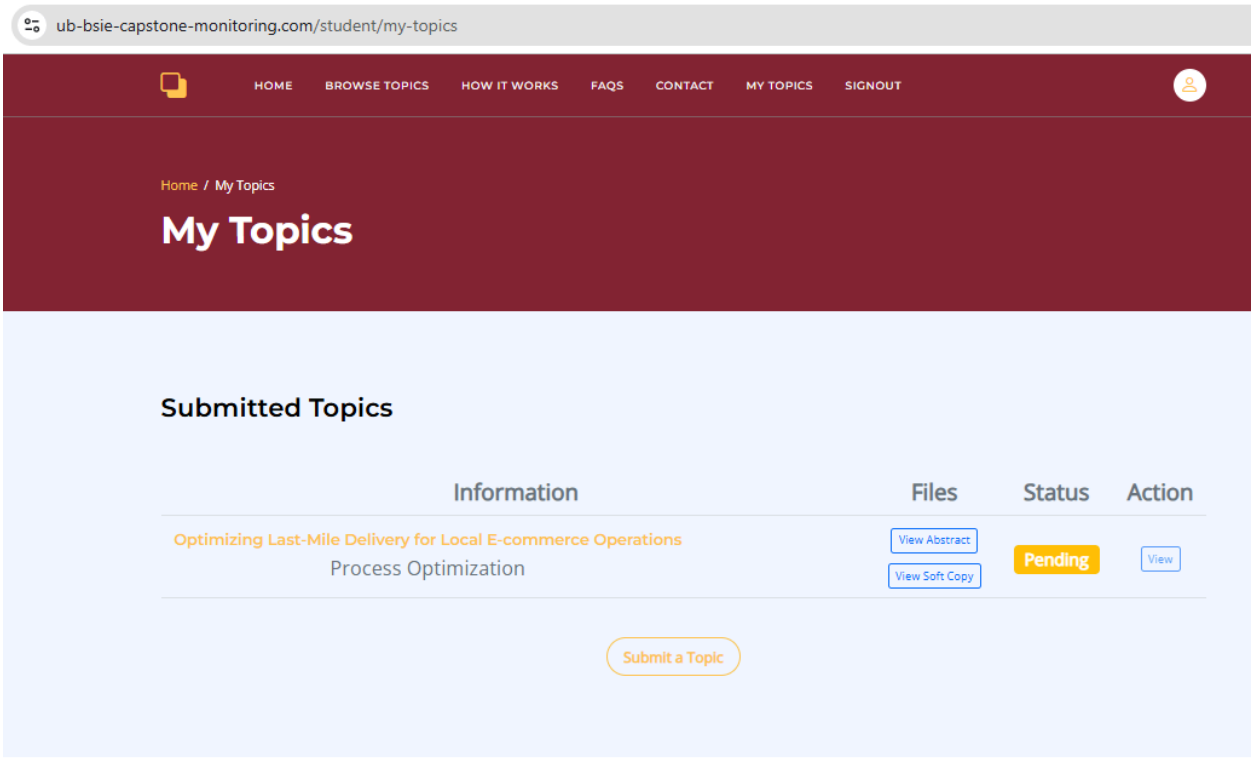


Figure 4.12 User Interface Displaying Submitted Research Topics and Submission Management Functions

D. Administrator Interface

1. Administrator Login Interface for the Research Monitoring System

Figure 4. 13 serves as the secure access gateway for authorized users responsible for overseeing and managing the digital repository system. Designed for simplicity and clarity, the interface provides two input fields for entering a username and password, with an optional feature to display the entered password for verification purposes. Positioned below the fields is a clearly marked “Sign In” button that initiates the credential validation process, ensuring that only verified administrators can access the backend functionalities of the platform. The login layout emphasizes both

user-friendliness and system security, promoting ease of access while protecting sensitive data. The responsive design allows compatibility across various devices, enabling administrators to manage system functions efficiently from multiple endpoints. Upon successful login, administrators are granted access to critical system controls such as user account management, project review workflows, research archives, and system-generated notifications. Overall, the login page functions as a protected entry point for administrative users, ensuring that platform operations, data integrity, and academic submissions are securely maintained and effectively governed.

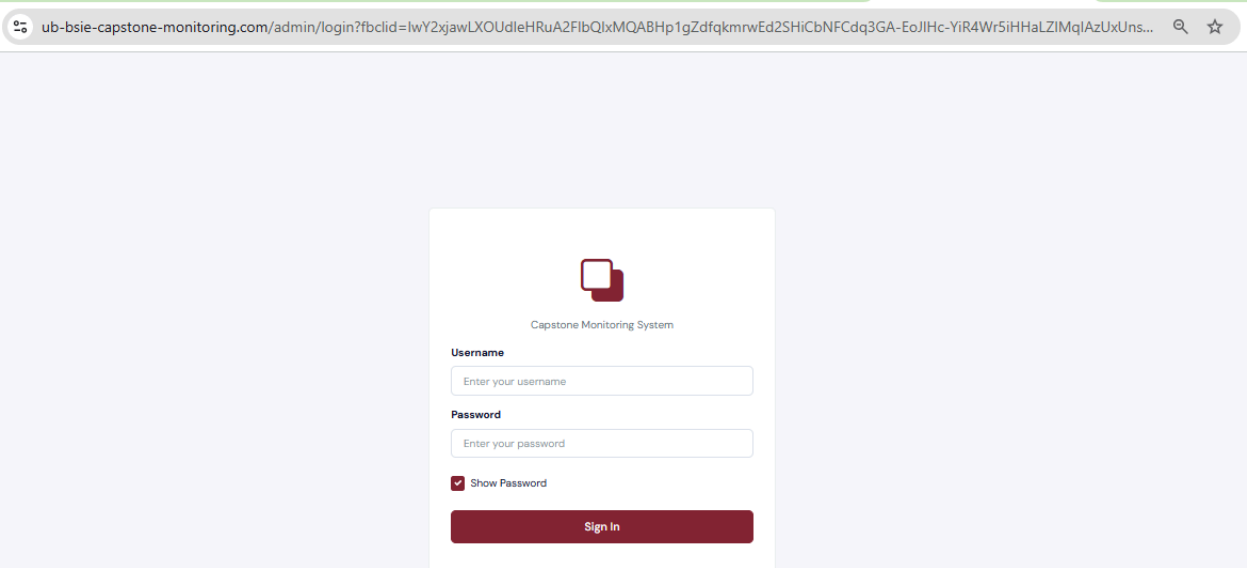


Figure 4.13 Administrator Login Interface for the Research Project Monitoring and Management System

2. Administrator Dashboard for Research and User Management

Figure 4.14 offers a unified overview of important system metrics and control features within the digital repository system. This includes vital information such as the quantity of registered students and faculty, and the total amount of research work

submitted at present in the system. A section entitled *Recent Research Submission* reflects the most recent project uploaded in the repository, along with its title, category, status, and date of submission, allowing administrators to oversee new entries effortlessly. Navigation links for user and research management; faculty management, student management and research management are available in the dashboard as links provided in the dashboard. Under each management category, there are options for creating accounts, viewing the list of users, and viewing the submitted research entries. The interface is user-friendly and is designed for easily accessing and handling tasks, allowing administrators to oversee user activity and system content through a single control panel.

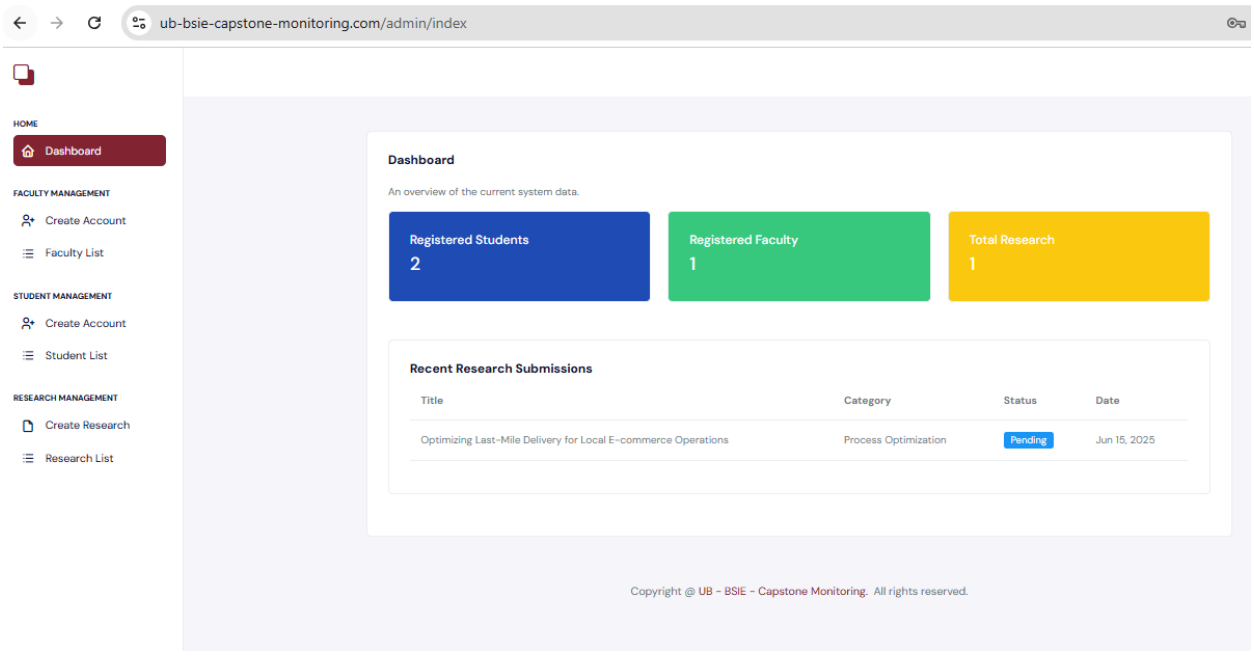


Figure 4. 14 Administrator Dashboard Displaying Research Project Metrics and User Management Functions

3. Administrator Interface for Viewing and Managing Faculty Accounts

Figure 4.15 a vital feature within the Monitoring System that allows system administrators to manage and oversee all faculty-related data across the institution. This module is designed to provide complete control over the faculty database, enabling the administrator to add new faculty members, update existing records, assign roles or departments, and deactivate accounts when necessary. It contains detailed faculty profiles including full name, faculty ID, department, position, contact details, subjects handled, and advisory responsibilities.

Through this module, the administrator ensures that each faculty member is properly linked to their assigned students, classes, and monitoring duties. It supports role-based access control, ensuring that only authorized users can modify sensitive faculty information. The system also includes features such as filtering by department or employment status, search functions, and data export options for administrative reporting. In addition, administrators can track the activity logs of faculty accounts, ensuring transparency and accountability in the use of the monitoring system.

Overall, the Administrator of Faculty List module helps maintain the accuracy, security, and organization of faculty information. It is a critical tool for supporting the institution’s operational efficiency, allowing seamless coordination between academic departments and reinforcing proper faculty management within the digital monitoring environment.

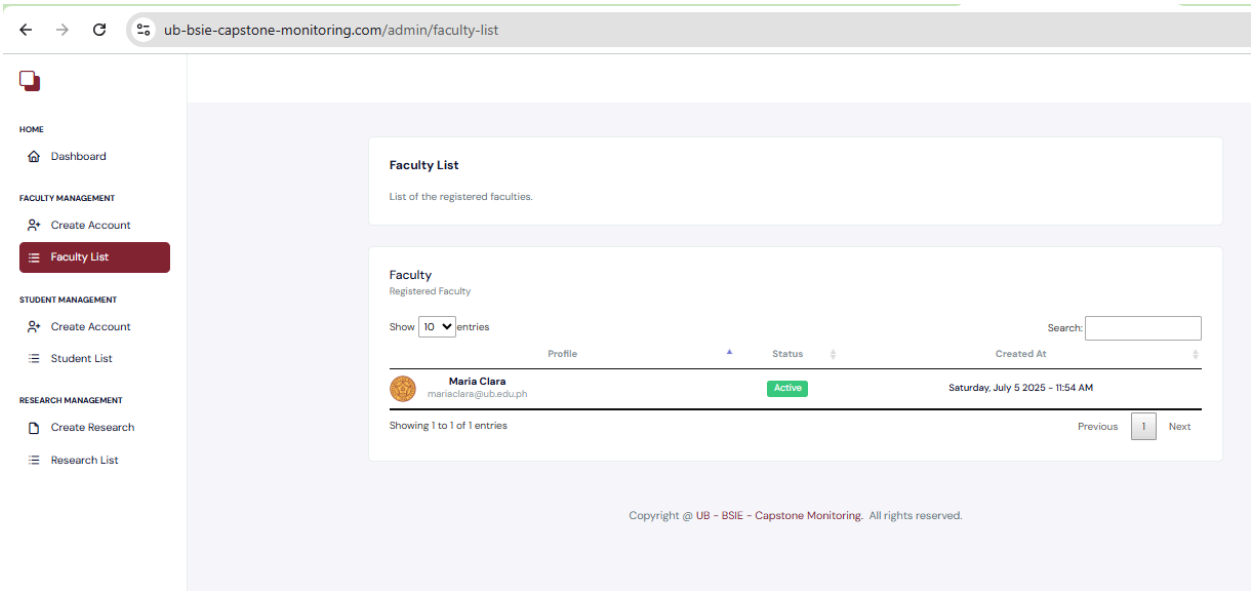


Figure 4.15 Administrator Interface Displaying Registered Faculty for the Research Project Monitoring System

4. Administrator Interface for Viewing and Managing Student Accounts

Figure 4.16 a core feature of the Monitoring System that provides administrators with full access and control over all student records within the institution. This module is designed to centralize student information, allowing the administrator to add, edit, update, or deactivate student accounts as needed. Each student profile includes essential details such as student ID, full name, course, year and section, enrollment status, guardian contact (if applicable), and assigned faculty adviser.

Through this module, administrators can filter and search students based on various criteria such as department, program, year level, or section. It also allows them to manage student classifications (e.g., regular, irregular, transferee) and ensure that

each student is properly linked to their corresponding faculty or adviser. Additionally, the module may support bulk import of student data and export of student lists in various formats (e.g., Excel, PDF) for reporting or documentation purposes.

This module plays a vital role in maintaining the accuracy, integrity, and security of student records. It ensures that all student information within the system is up-to-date and consistent across departments. Moreover, it supports smooth coordination between administrative offices and academic units by providing a centralized database for student monitoring, attendance tracking, and academic supervision. Overall, the Administrator of Student List module is essential in establishing a well-organized and efficient student management system that benefits both faculty and administration.

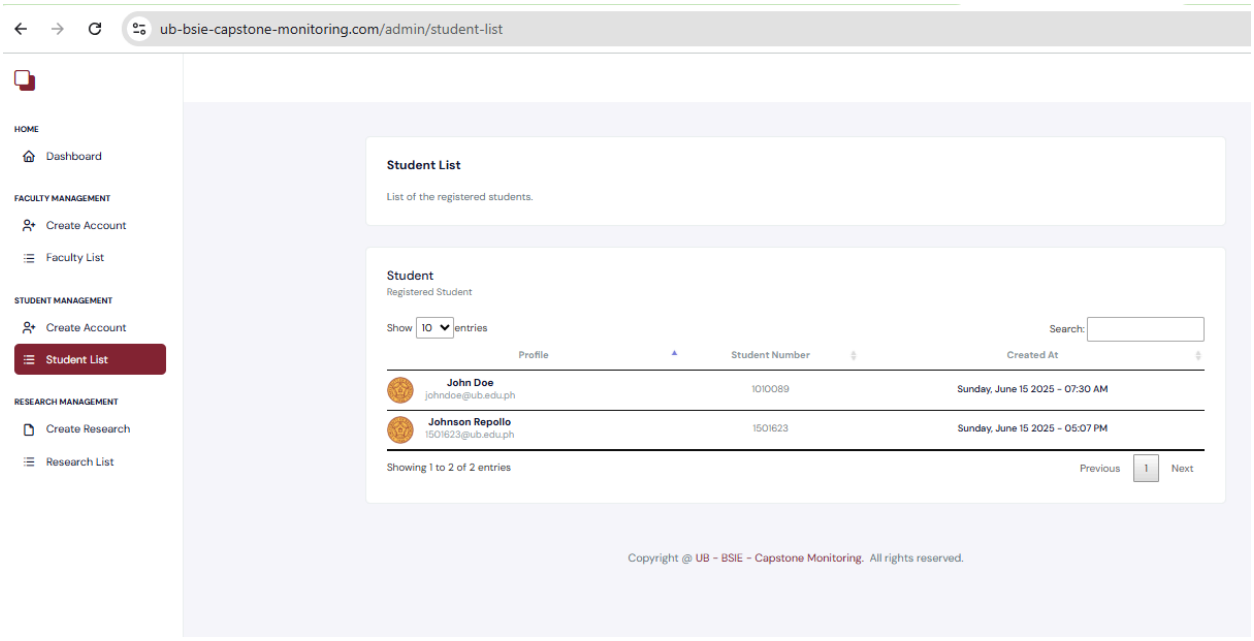


Figure 4.16 Administrator Interface Displaying Registered Students for the Research Project Monitoring System

5. Administrator Form for Submitting New Student Research

Figure 4.17 is a crucial feature within the Monitoring System that allows the system administrator to initiate, manage, and oversee research entries submitted by faculty members or students. This module enables the administrator to create official research records in the system, which include details such as the research title, abstract, researchers' names, department, research type (e.g., thesis, feasibility study, published paper), date of submission or publication, and relevant supporting documents like PDFs or certificates. The administrator can also assign research works to faculty reviewers or research panels for evaluation and approval.

This module ensures that all research activities follow a standardized process and comply with institutional guidelines. Administrators have the authority to edit, approve, reject, or archive research entries, depending on their status and validity. Each research submission is carefully documented and tracked, with logs showing when and by whom it was created or modified. The module may also support categorization by academic year, research discipline, or level (undergraduate, graduate, faculty research), allowing for easier organization and retrieval.

The Create Research module plays a vital role in maintaining the credibility and transparency of the institution's research processes. It ensures that every research output is officially recorded, verified, and stored within the system’s database for future reference, reporting, or accreditation purposes. By giving the administrator control over research management, this module helps uphold academic integrity and supports the institution’s goal of fostering a strong and organized research culture.

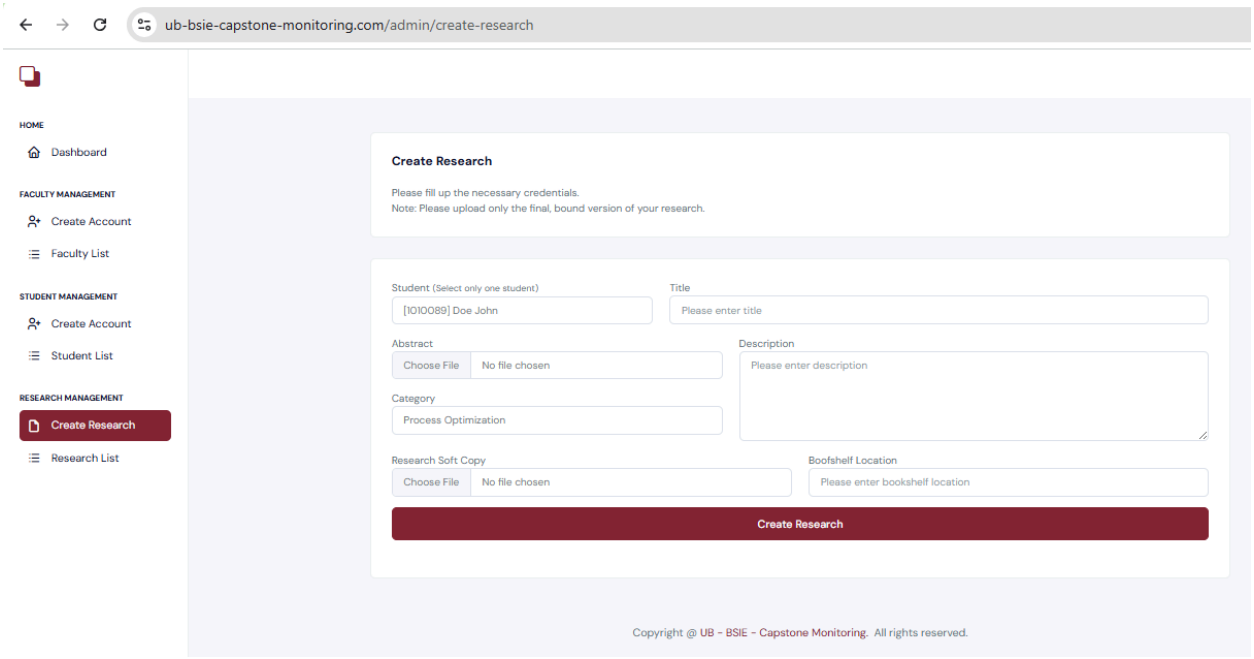


Figure 4. 17 Administrator Interface for Creating and Submitting Research Project Records

6. Administrator Interface for Viewing and Managing Research Entries

Figure 4.18 is a key feature of the Monitoring System that provides the administrator with complete access to view, manage, and organize all research records submitted within the institution. This module serves as a centralized database for storing research outputs submitted by faculty members and students. Each research entry includes important information such as the research title, author/s, department or program, research type, submission or publication date, abstract, and attached documents or links to published works.

Through this module, the administrator can verify the completeness and authenticity of each research entry, update its status (e.g., pending, approved, rejected),

and assign reviewers or evaluators as necessary. It also includes features for filtering research by academic year, department, research category, or author name, as well as tools for searching and exporting records for documentation, accreditation, or reporting purposes. Administrators may also archive completed or outdated research to maintain a clean and organized database.

The Research List module ensures transparency and accountability by tracking submission dates, approval status, and reviewer comments, helping to prevent duplication and ensuring that all submitted work meets institutional standards. This feature plays a vital role in maintaining a well-structured research repository, supporting both academic development and institutional recognition. Overall, the Administrator of Research List module is essential in promoting efficient research monitoring and reinforcing the academic integrity of all research activities within the institution.

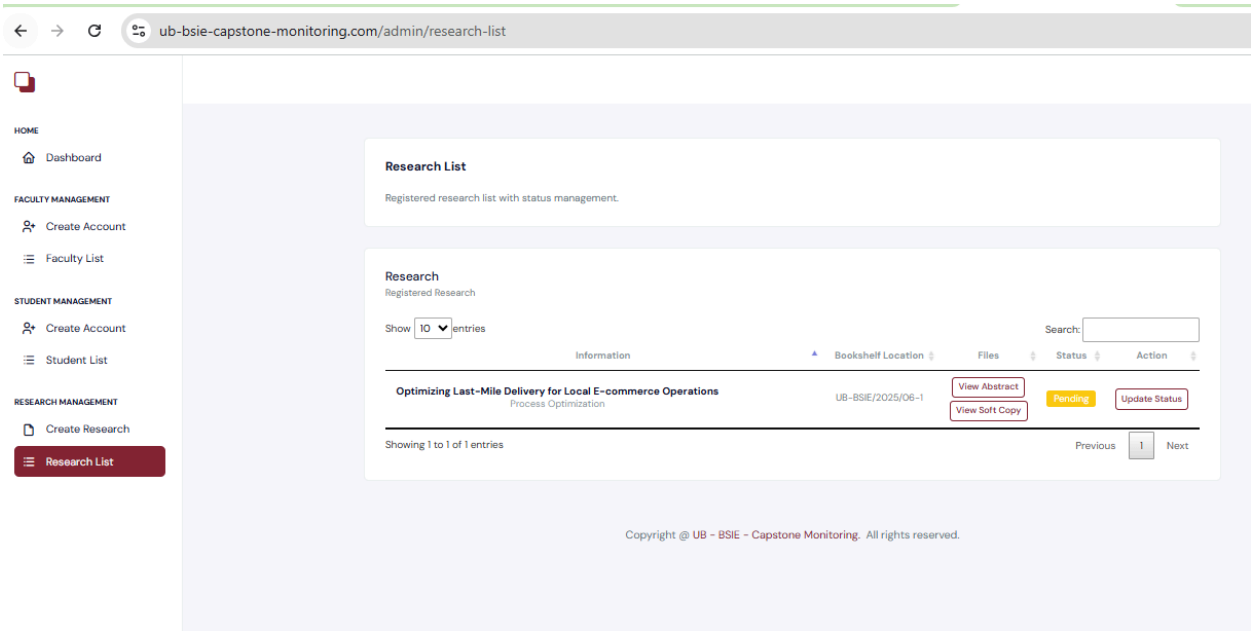
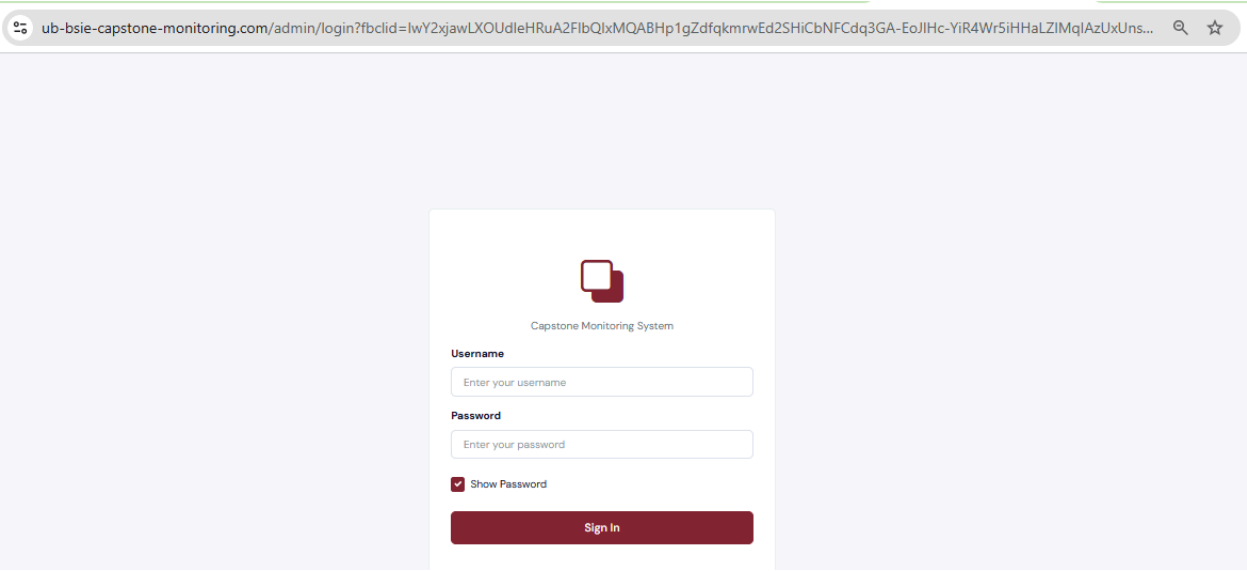


Figure 4. 18 Administrator Interface Displaying and Managing Registered Research Project Records

E. Faculty Interface

1. Faculty Login Interface for the Research Monitoring System

Figure 4.19 as the access portal to the Capstone Monitoring System, intended for use by faculty and administrators through a shared interface. It features two main fields for input - one for the username and the other for the password - along with a feature to show the entered password for user confirmation. There is also a clearly identified 'Sign In' button that begins the login procedure and, once verified, allows access to the system for authorized users. The system uses the same entry screen for all users, but access is role-specific, depending on the user role linked to their account, allowing the system to grant access based on the roles. For faculty users, log-in access to the system can use this window to access the tools for reviewing, monitoring, and managing outputs from student research and academic projects. The interface is kept clean and useful to allow for easy access from computers or mobile devices with straightforward and secure entry into the system.



Faculty 4. 19 Faculty Login Interface for the Research Project Monitoring and Management System

2. Faculty Dashboard for Monitoring Research and Student Data

Figure 4. 20 a clear summary of important academic activity within the system. This includes the total number of students registered, faculty registered, and research output submitted. This leads to easy access to statistics of the system status. For instance, *number of active students* and *number of submitted research.* This allows faculty to participate and submit at the right volume. Also, a section dedicated to recent submission is provided, containing details of an excellent interest research title, its category, and its review status among others. For instance, the title, *Optimizing Last-Mile Delivery for Local E-Commerce Operations,* is located in the title list under the research title category of process optimization; its review status is currently pending. This overview helps faculty in the flow of monitoring submissions and assessing submissions. The layout of the dashboard is designed in a straightforward way and is compelling enough to the eye. This helps the faculty to deal with their responsibilities in facilitating academic project outputs.

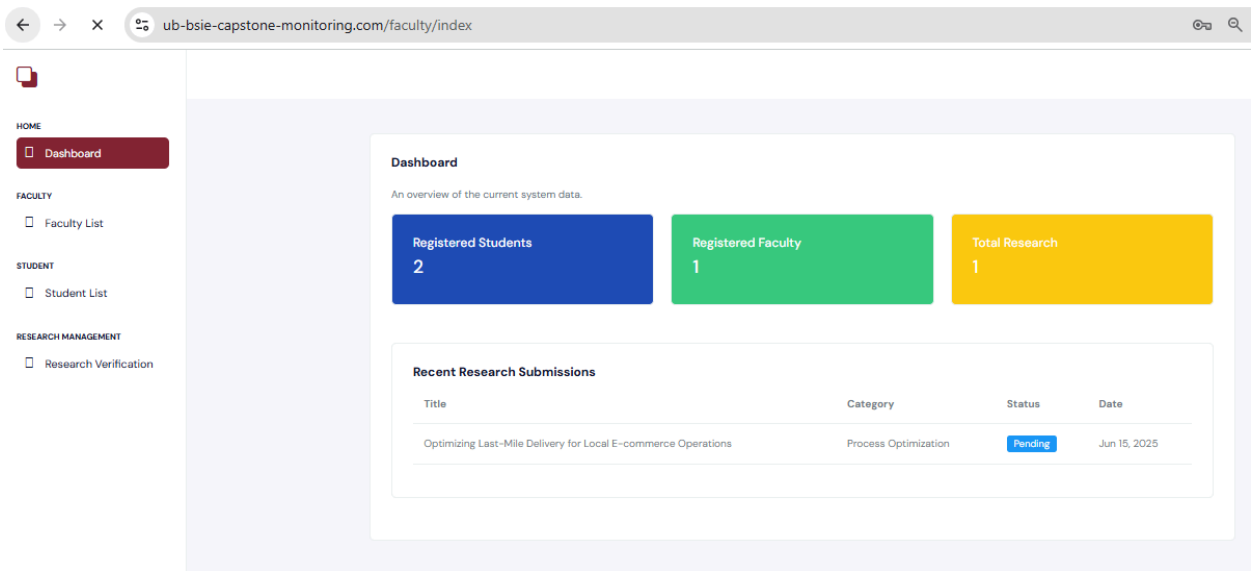


Figure 4. 20 Faculty Dashboard Displaying Research Project Metrics and Recent Submissions

3. Faculty List Page in the Research Monitoring System

Figure 4.21 is a key component of the Monitoring System that serves as a centralized directory for managing all registered faculty members within the institution. This module allows administrators to view and maintain faculty profiles, which typically include information such as full name, employee ID, department, designation, contact information, and assigned subjects or advisory classes. The system provides an organized and searchable list, enabling quick access to faculty records and facilitating efficient communication and coordination within departments.

Each faculty member's profile is linked to specific students, subjects, and responsibilities, ensuring that the monitoring data—such as attendance reports, behavioral observations, and academic performance tracking—is correctly associated with the appropriate personnel. The system may also include functionality for adding, editing, or deactivating faculty accounts, allowing for real-time updates and role assignments. Filters and search tools enhance usability by enabling the admin to sort faculty based on department, employment status, or role.

This module plays a vital role in maintaining a structured academic environment by ensuring that faculty information is accurate and up to date. It also supports role-based access control, ensuring that only authorized personnel can view or modify sensitive faculty data. Overall, the Faculty List module contributes significantly to the

efficiency and integrity of the monitoring system by streamlining the management of faculty information and ensuring clear accountability in student monitoring processes.

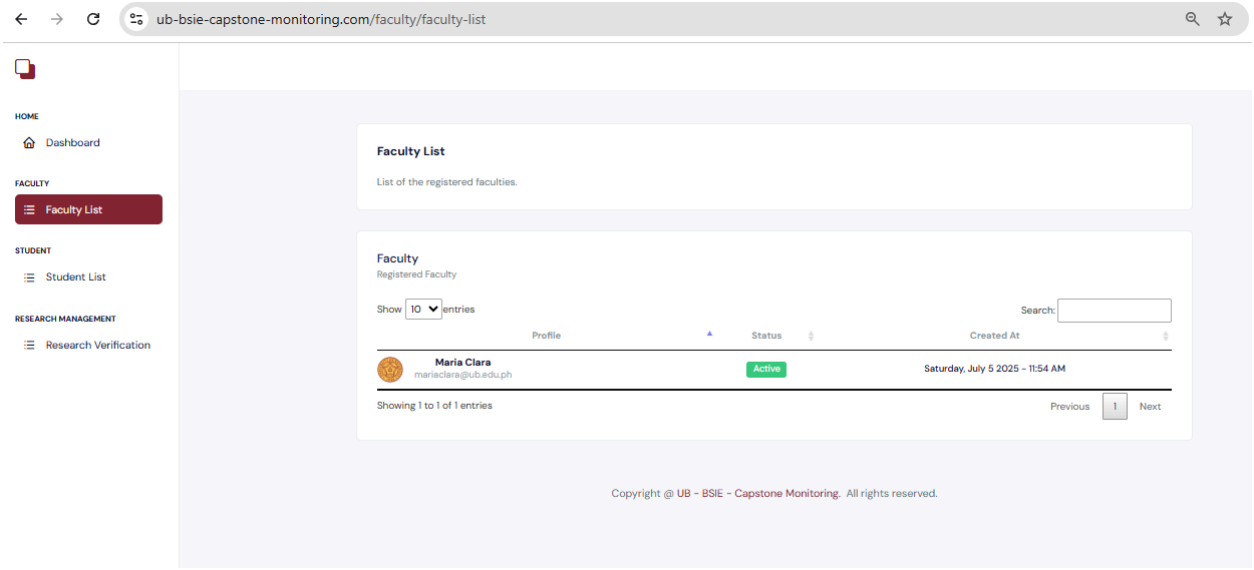


Figure 4. 21 Faculty Interface Displaying the List of Registered Faculty Members for Research Project Monitoring

4. Faculty Interface for Viewing Registered Student Accounts

Figure 4.22 is a fundamental part of the Monitoring System that enables faculty members to access, manage, and monitor the list of students under their supervision or instruction. This feature is designed to display essential student information such as full name, student ID, course, year level, section, and enrollment status. Faculty members can view and filter students according to specific categories like program, academic year, or section, making it easier to organize and track their advice or class rosters.

Each faculty account is linked to the students assigned to them, ensuring that only authorized faculty can access relevant records. Through this module, faculty

members can also monitor student-related data such as attendance records, behavioral notes, academic performance, and other activity logs, depending on the scope of the monitoring system. Additionally, the system includes a search function for quick access to individual student profiles and allows data to be exported in formats such as PDF or Excel for administrative reporting or personal reference.

This module contributes to the overall efficiency and accuracy of the monitoring process by centralizing student information and providing faculty with the tools needed for effective supervision. It supports data integrity, user accountability, and role-based access control, ensuring that only authorized users can view or edit student details. Ultimately, the Faculty of Student List plays a vital role in promoting better student-faculty engagement and improving the quality of academic monitoring within the institution.

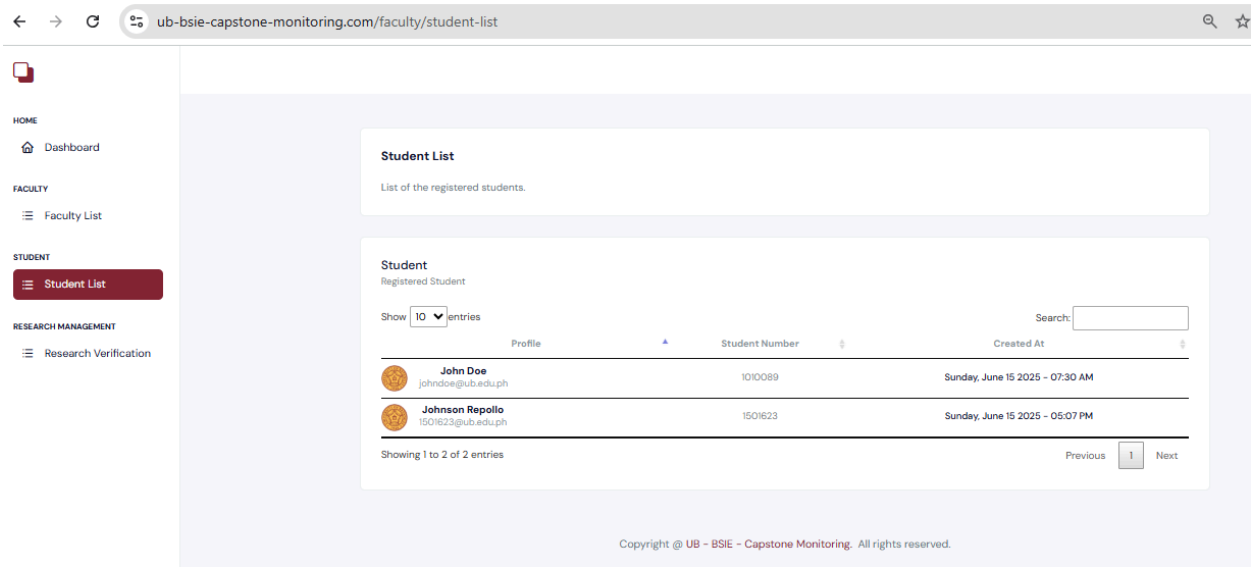


Figure 4. 22 Faculty Interface Displaying the List of Registered Students for Research Project Monitoring

5. **Faculty Interface for Viewing and Managing Research Entries**

The Faculty of Research Verification module is a crucial feature of the Monitoring System that ensures all research outputs submitted by faculty members are authentic, valid, and properly documented. This module allows administrators or research coordinators to systematically review and verify research works such as published papers, theses, technical studies, and academic journals submitted by faculty. Each submission includes key details such as the research title, abstract, date of completion or publication, research category, co-authors (if any), and supporting documents like PDFs, certificates, or publication links.

Once a faculty member uploads their research, the system flags it for verification, enabling designated staff to evaluate its completeness, originality, and compliance with institutional guidelines or external publication standards. The module also keeps a log of the verification process, including approval status, date of review, and remarks from the verifier. Approved research works are marked as “Verified” and are made available in the institution’s digital research archive, while those requiring revision or clarification are tagged accordingly for follow-up.

This verification system promotes transparency and academic integrity by minimizing cases of duplication or falsified research claims. It also helps build a reliable database of faculty research outputs that can be used for institutional accreditation, performance evaluation, or public reference. Overall, the Faculty of Research Verification module strengthens the research culture within the institution by providing a

structured, accountable, and efficient process for validating faculty contributions in the field of research.

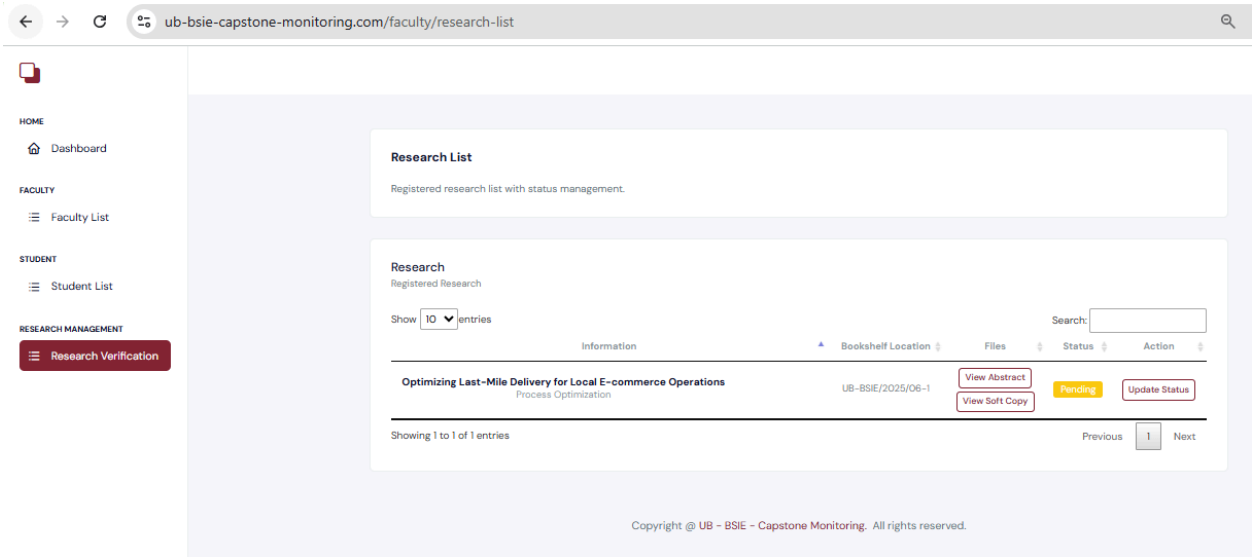


Figure 4. 23 Faculty Interface Displaying Research Project Records with Verification and Viewing Options

F. System Flow

Table 4.3 Feature Flow of Student Module

Features	Content
Student Registration/ Login	Secure authentication login system
Submit Research Topic	From to enter • Research Title • Category / Department

	• Short abstract Validation Triggered • System checks database of existing research • If similar title exists → Warning/Notification shown • If unique → Submission accepted
Browse Research Archives	Students can explore: • Existing Research Titles • Abstracts • Authors • Achievements (Awards, Implemented Projects, Published Works)
Receive Notifications	Feedback on topic status (Approved, Needs Revision, or Duplicate) Real-time or email notification (optional)

Table 4.3 This system offers a systematic and safe environment for the handling of student research submissions. Learners are able to create an account and log in through a safe sign-in procedure to ensure data confidentiality. After an official entry, students can submit their research topic by completing a form that contains a short research title, category or department, and a brief abstract. For ensuring originality, the

submission is automatically validated by the system for any identical title existing in the database. In the case of encountering an identical title, the system sends a warning or notification; otherwise, the submission is confirmed.

This feature serves to avoid plagiarism and makes sure that every research topic is unique. In addition to submission, the system allows the students to explore the research archive and analyze existing titles, abstracts, authors along with distinct achievements like awards, imparted projects, and published works. This provides students with a chance to build up insight and inspiration for their studies. The system further provides real-time notifications or optional email notifications about their topics' status. Students are kept informed whether the topic is approved, revised, or duplicated so that they can receive prompt feedback. Overall, the system makes research management easier while upholding transparency, originality, and accessibility for academic objectives.

Table 4.4 Feature Flow of Faculty Module

Features	Content
Faculty Login	• Secure authentication and dashboard access
View submitted topics	• List of all incoming student topic submissions • Filter by course, date, department.

Validate and provide feedback	• Approve / Reject / Suggest Edits • Faculty can add comments or notes • Status update triggers notification to students
View archive/ Research Achievements	• View previous research in the system • Useful for cross-checking and mentoring

Table 4.4 This system also features a separate faculty login option that ensures safe authentication and access control of the dashboard. Through this dashboard, the faculties can check all student-submitted research topics in an organized manner. Faculty can filter submissions based on course, date, or department to make the review process easier. After reviewing, faculty can validate the topic and provide feedback as well. They can approve or disapprove, or suggest some changes to ensure the research is up to par. The comments or notes will help guide the students to change if needed.

Once a faculty member changes the status of a topic, the system will automatically send a notification to the student regarding the status of the topic. This promotes transparent and timely communication of students and faculties. They can also access the research archive, which lets faculties check previous works and achievements such as implemented projects, published works, etc. It can be used for double-checking to avoid duplicate topics, as well as mentoring. This feature allows the review process to be completed more efficiently, ensures originality, and promotes better guidance in the student's research development.

Table 4.5 Feature Flow of Administrator Module

Features	Conten
Admin login	• Full system access for admin users
System Maintenance and Management	• Manage users (students & faculty) • Upload or manage archived research manually • Backup system data • Maintain categories and departments • Monitor system usage logs

Table 4.5 The system includes an admin login option that allows fully verified admin users to access the system's full capacity. With this secure login, admins can do system maintenance and overall management. The primary responsibility of the administrator is to manage user accounts, be it students or faculties, and allow proper access rights and permissions. Admins can also upload or update the archived research manually to maintain a proper database. They are also responsible for conducting data backups in order to protect and maintain important research data and system integrity.

Admin dashboards can help easily maintain research categories and departments to keep the system organized. Admins can keep track of the system usage logs to monitor activities, trace some unusual behavior, or ensure the confidentiality compliance of the users. These options help maintain the reliability and efficiency of the

research management system. The administrator module ensures the smooth operation and data security and accurate account maintenance across the whole system.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

In this chapter, the conclusions drawn from the study's findings, along with the researchers' recommendations, are included. These have been developed to distill the findings and indicate where enhancements to the suggested system might be made.

Conclusions

- The research revealed that the process of manual submission and archiving of academic work led to inefficiencies, including lost time, miscommunication, and misplaced files. This method involved greater time consumption and labor on the part of both students and faculty. In the absence of a systematic approach, recalling and retrieving documents from previous years was difficult and lengthy. Manual validation was also prone to mistakes and did not have appropriate feedback channels. These results emphasize the necessity of implementing a digital mechanism to enhance efficiency and accessibility.
- The interviews and survey demonstrated that the students faced issues like unstable internet access, blurred deadlines, and the absence of submission confirmation. The majority of interviewees expressed dissatisfaction with the system error and lack of communication during peak times. These challenges had a tendency to aggravate late or duplicate submissions, causing extra work for some faculty members. The lack of clear notifications and feedback caused even more confusion and stress among students. In summary, these challenges highlighted the necessity of having a dependable and well-organized platform.
- The research revealed the necessity for a centralized, secure, and user-friendly platform for managing academic research outputs. A unified system can eliminate duplication of efforts and offer a systematic approach for submission

processes. Centralized management fosters greater transparency and simplifies tracking for students and faculty alike. Furthermore, it guarantees the long-term preservation of research outputs for future reference. This methodology fosters academic integrity and facilitates efficient information management.

- The created Digital Repository System overcame these challenges by implementing submission tracking, role-based access, and searchable metadata. These capabilities enhance the organization, security, and accessibility of the system for every user involved. Automated notifications deliver real-time information to students regarding their submissions. The intuitive interface streamlines navigation and reduces technical issues. In summary, the system guarantees a seamless and dependable submission experience.
- The system greatly enhanced the accessibility, organization, and transparency of research output management. It facilitates the easy retrieval of previous work, which mitigates redundancy and bolsters better research activities. Students enjoy clear instructions, confirmation messages, and mobile-friendly access. Faculty members can effortlessly track submissions and keep appropriate documentation. Overall, the system presents an efficient and contemporary answer to traditional submission challenges.

Recommendations

- The Digital Repository System should be adopted as the official vehicle for academic submissions. This will regularize the submissions and ensure proper documentation and storage. Faculty and students should urge to submit through the platform for all research outputs. This will eradicate inconsistency and reduce the risk of loss or misplacement of files. Total adherence will streamline the submission workflow and improve overall academic management.
- The department should ensure that training and technical assistance are provided to students and faculty members to facilitate the seamless adoption of the system. There must be orientation programs designed to assist users in comprehending the features and functions of the platform. A helpdesk or chat-based support system should be made available to help users troubleshoot technical issues. Facilitating these services will promote the users' confidence in utilizing the system. Proper assistance may also guarantee the system's maximum efficiency while minimizing user errors.
- A committed team should operate the system and maintain data integrity and regular updates. Assigning administrators will guarantee security as well as proper submission handling. The team should regularly check for storage capacity and perform regular backups. Regular system maintenance will also prevent downtime and technical failures. This plan will ensure continuous and reliable repository operation.
- Upcoming improvements to the system should incorporate features like plagiarism detection, automated alerts, and connectivity with other academic tools. These enhancements will boost the system's capabilities and promote

academic honesty. Connecting to learning resources can streamline grading and feedback steps. Further enhancements, like analytical resources and quoting tools, will make the system more practical for research purposes. Design for upcoming upgrades will maintain the system's significance and flexibility.

- Regularly promoting the repository and broadening its scope will bolster knowledge retention. The system ought to incorporate graduate theses, faculty research, and other outputs from the institution. Policies need to be put in place mandating all academic contributions through the repository. Awareness initiatives will foster user engagement and acceptance. In the end, extensive usage will cement the repository's position as a vital academic asset.