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SENIOR HIGH SCHOOL REGISTRATION AND INFORMATION MANAGEMENT SYSTEM OF GALLANOSA NATIONAL HIGH SCHOOL

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Abstract

The study, entitled "*Senior High School Registration and Information Management System of Gallanosa National High School,*" focused on designing and implementing a web-based system to streamline student registration and academic information management. The system was developed using the Agile Development Methodology, which allowed iterative and flexible phases including planning, requirements gathering, design, development, testing, and deployment. Key features such as student registration, strand recommendation, account management, and academic information access were integrated to ensure efficiency, accessibility, and user-centered functionality for students, teachers, and administrators.

The findings revealed that the system successfully operated as intended, providing a secure and user-friendly platform for registration and information retrieval. Compatibility tests confirmed seamless performance across desktops, laptops, tablets, and smartphones, promoting flexibility and accessibility. The system's design enabled teachers to manage enrollment records efficiently, while students benefited from quick and convenient access to their academic details. Evaluation using ISO 25010 Software Quality Standards demonstrated high performance, with the system receiving an overall rating of 4.55, interpreted as "Highly Applicable," and all quality characteristics rated as "Far exceeds expectation."

Based on the findings, it was concluded that the system effectively addressed the challenges of manual registration by offering a reliable, secure, and efficient solution aligned with ISO 25010 standards. Users confirmed its effectiveness, usability, and compatibility, making it a practical tool for improving school operations. It is recommended that the school fully implement and maintain the system, conduct regular updates for compatibility and security, provide training for users to maximize system features, and perform periodic evaluations to sustain high performance and user satisfaction. These steps will ensure the system remains responsive to the evolving needs of Gallanosa National High School.

Keywords. Administrative Automation, Educational Technology, Enrollment System, Information Management System, Registration System, School Information System, and Student Records Management

Introduction

Globally, educational institutions have increasingly adopted digital technologies to modernize administrative processes and improve service delivery. Registration and information management systems in many countries have evolved from manual, paper-based procedures into automated platforms that support online registration, centralized student records, and integrated reporting mechanisms. These systems improve data accuracy, reduce processing time, and enhance information security, enabling schools to respond more efficiently to growing student populations (UNESCO, 2021). International studies emphasized that automated registration and information management systems significantly contributed to institutional efficiency by minimizing human error and improving accessibility to student data (Al-Shabandar et al., 2020).

Furthermore, international best practices demonstrated that integrating student information management with registration processes streamlined administrative workflows and strengthened record verification. Schools that implemented centralized information systems experienced improved monitoring, faster document processing, and better compliance with data protection standards (Kumar & Singh, 2019). These global developments highlighted the importance of comprehensive digital solutions that combined registration, student information management, and related administrative services into a single platform.

In the Philippines, the government has actively promoted digital transformation in public education through initiatives such as the Department of Education's Digital Rise Program and the DepEd Computerization Program (DCP). These programs encouraged schools to shift from traditional manual processes to technology-driven systems to improve efficiency, transparency, and data accuracy (Department of Education, 2022). Several local studies confirmed that automated registration and information management systems reduced administrative workload, improved record accessibility, and enhanced overall school operations (Berro et al., 2025).

Despite these national efforts, many public schools continued to rely on manual registration practices. Research indicated that paper-based systems remained prevalent due to limited resources, insufficient technical infrastructure, and lack of integrated information systems (Matos, 2022). Although some schools adopted partial digital solutions, registration, record management, and related processes were often handled separately, resulting in fragmented data, duplication of work, and delays in administrative transactions. These gaps highlighted the need for school-based systems that fully aligned with national digitalization goals.

At the local level, Gallanosa National High School (GNHS) continued to implement a predominantly manual registration process for senior high school students. Learners were required to accomplish handwritten forms, which were manually verified, encoded, and filed by teachers and administrative staff. This

procedure was time-consuming and prone to clerical errors, misplaced documents, and delays in updating student records. Related processes such as student identification and record retrieval were also handled separately, further increasing the workload of school personnel.

As the senior high school population of GNHS increased annually, these inefficiencies became more evident. Manual registration demanded substantial time and effort from administrators and resulted in long queues for students and parents during enrollment periods. Previous studies supported these observations, noting that traditional registration methods in large public schools often led to inaccuracies, data redundancy, and limited access to student information (Dela Cruz, 2019). These challenges underscored the need for a more efficient and centralized registration and information management system tailored to the school's specific context.

In response to these identified challenges, the study focused on the development of the Senior High School Registration and Information Management System of Gallanosa National High School. The project study aimed to provide a digital solution that automated senior high school registration, centralized student information, and supported related administrative functions such as record updating and reporting. By integrating these features into a single platform, the system addressed the limitations of manual registration and fragmented data management.

The project study was conducted to support GNHS in improving administrative efficiency, data accuracy, and service delivery. The proposed system sought to reduce processing time, minimize errors, and ensure the secure handling of student information in line with the Department of Education's vision for a paperless and technology-driven education system. Ultimately, the study aimed to provide a sustainable solution that benefited students, parents, and school personnel while aligning local practices with national and international trends in educational digitalization.

The project study was aligned with the United Nations Sustainable Development Goal 4 (Quality Education), which emphasized inclusive, equitable, and quality education through the effective use of appropriate technologies (United Nations, 2015). By developing the Senior High School Registration and Information Management System of Gallanosa National High School, the study supported improved access to education services by simplifying registration processes and ensuring accurate and timely management of student records. Centralized information management also enhanced institutional planning and learner support, which were essential components of a quality education system.

In addition, the study contributed to Sustainable Development Goal 9 (Industry, Innovation, and Infrastructure) and Sustainable Development Goal 16 (Peace, Justice, and Strong Institutions). The adoption of an automated registration and information management system demonstrated the application of digital innovation and infrastructure in modernizing school administration (United Nations, 2015). Centralized and secure record-keeping strengthened accountability, data integrity,

and protection of student information, which were critical to effective and transparent institutional governance. By reducing paperwork, minimizing errors, and improving data security, the project study supported sustainable, resilient, and technology-driven school administration at Gallanosa National High School.

Specific Objectives

Specifically, the study aimed to:

1. Develop a Senior High School Registration and Information Management System of Gallanosa National High School that:
   1.1. supported digital enrollment
   1.2. automated ID generation
   1.3. ID printing to ensure efficient and accurate processing of student information.

2. Integrate a User Management Module within the system that enabled authorized users to:
   2.1 Register new senior high school students;
   2.2 Log in to the system using secure authentication credentials;
   2.3 Update student address and guardian contact information;
   2.4 Manage user accounts for administrators and staff; and
   2.5 Generate and print student identification cards.

3. Ensure system compatibility by enabling seamless access to the platform across multiple devices, including desktops, laptops, and mobile devices.

4. Develop and integrate an ID Printing Module that allowed the school to:
   4.1 Print student identification cards upon successful enrollment;
   4.2 Customize ID templates in accordance with DepEd guidelines; and
   4.3 Reprint lost or damaged identification cards upon request.

5. Provide an Enrollment Management Module that enabled school administrators to:
   5.1 Approve and verify student registration and enrollment requests;
   5.2 Update, store, and maintain student records in a centralized database; and
   5.3 Generate enrollment-related reports, including:
      5.3.1 Summary of enrolled students by grade level and section;
      5.3.2 Lists of pending and approved enrollment requests; and
      5.3.3 Student ID issuance status reports.

6. Evaluate the developed system based on the ISO/IEC 25010 quality standards in terms of:
   6.1 Functional suitability;
   6.2 Performance efficiency;
   6.3 Compatibility;
   6.4 Usability;
   6.5 Reliability;
   6.6 Security;
   6.7 Maintainability; and
   6.8 Portability.

Scope and Delimitations

The scope of this project study covered the design, development, implementation, and evaluation of a Senior High School Registration and Information Management System of Gallanosa National High School. Specifically, the study focused on developing a system that supported digital enrollment, automated ID generation, and ID printing to ensure the efficient and accurate processing of senior high school student information. It included the integration of a User Management Module that enabled authorized users to register new students, log in using secure authentication credentials, update student address and guardian contact information, manage administrator and staff accounts, and generate and print student identification cards. The system was designed to be compatible with various devices, including desktops, laptops, and mobile devices. It also incorporated an ID Printing Module that allowed the printing of student identification cards upon successful enrollment, customization of ID templates in accordance with DepEd guidelines, and reprinting of lost or damaged IDs. In addition, an Enrollment Management Module was developed to enable administrators to approve and verify enrollment requests, update and maintain student records in a centralized database, and generate enrollment-related reports such as summaries of enrolled students by grade level and section, lists of pending and approved enrollment requests, and student ID issuance status reports. At the end of the system development, the system was evaluated by 10 IT professionals and 10 end users using the ISO/IEC 25010 quality standards, specifically in terms of functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability.

The delimitation of this study was confined to the functionalities and features explicitly described within the scope and was applicable only to senior high school enrollment at Gallanosa National High School. The system did not include other school operations such as faculty management, grading systems, financial transactions, attendance monitoring, or learning management functions. The evaluation of the system was limited to the selected 10 IT professionals and 10 end users; therefore, the findings might not fully represent the perspectives of all stakeholders, including parents, external partners, or DepEd administrators. Furthermore, the system was designed to operate only on the specified devices and within the existing technological infrastructure of the school. The implementation of the system in other schools, educational levels, or institutional settings was beyond the scope of this project study.

Gap Bridged by the Study

Several reviewed studies were closely related to the present study in that they focused on automating student enrollment, improving data accuracy, reducing manual workload, and providing centralized student information management. Studies by *Utami et al.*, *Iskandar et al*., and *Aspa et al*. emphasized web-based enrollment platforms that streamlined registration processes and enhanced administrative efficiency. Similarly, systems developed by *Oñate, Dacara*, and *Dioquino* and the Web-Based Enrollment System for CISAT *Jasa et al*., automated student ID generation and record keeping, contributing to secure and organized student data management. These systems collectively highlighted the benefits of digital enrollment and record management, including reduced errors, faster processing, and improved access to student information for administrators and staff.

Despite these similarities, the present study bridged gaps that were not fully addressed in other systems. Unlike prior studies, this system integrated identification-enabled enrollment with automated ID generation and printing, along with a robust user management module that allowed administrators, staff, and students to securely access and update records. It also ensured seamless compatibility across multiple devices, including desktops, laptops, and mobile devices, and incorporated ISO/IEC 25010 standards for system evaluation. These unique features provided a comprehensive and exclusively solution for Gallanosa National High School, combining enrollment automation, identification management, and user access control in a single platform - an integration not found in other reviewed systems.

Project Development Methodology

The development of the Senior High School Registration and Information Management System of Gallanosa National High School employed the Agile Development Methodology, a flexible and iterative approach designed to ensure continuous improvement throughout the system's lifecycle. This methodology was chosen because it promoted collaboration, adaptability, and efficiency - qualities that were essential in developing a school-based information system that accurately responded to the needs of Gallanosa National High School. Unlike traditional linear models, the Agile approach divided the development process into smaller, manageable phases called sprints. Each sprint produced a functional component of the system, which was immediately tested and refined based on feedback from teachers, administrators, and other stakeholders.

The Agile framework allowed the project to remain responsive to evolving requirements and unforeseen challenges. In an educational environment, needs often changed as school policies, administrative procedures, or DepEd guidelines were updated. Through Agile, modifications could be introduced at any stage without disrupting overall progress. For instance, after the development of the user management module, feedback from users informed improvements before proceeding to the next sprint, which focused on registration workflows or report generation. This iterative process ensured that the system evolved

logically and remained aligned with actual school operations.

Another key strength of the Agile methodology was its emphasis on stakeholder participation. Rather than waiting until project completion, users were actively engaged at every stage from planning and design to testing and deployment. Regular consultation and feedback sessions provided valuable insights that helped developers adjust system features and interface designs to match user expectations. This collaborative process ensured that the final system was not only technically sound but also practical, user-friendly, and sustainable within the context of a public senior high school. By adopting the Agile Development Methodology, the researchers ensured that the Senior High School Registration and Information Management System was developed efficiently, accurately, and in harmony with the dynamic needs of Gallanosa National High School.

Conceptual Framework

The study focused on developing a comprehensive Senior High School Registration and Information Management System for Gallanosa National High School that supports digital enrollment, automated ID generation, and efficient student information processing. The system incorporated a User Management Module that allowed authorized personnel to register students, securely access the system, update student and guardian details, manage administrator and staff accounts, and generate and print student identification cards. It was designed to be compatible across multiple devices such as desktops, laptops, and mobile phones to ensure accessibility. Additionally, the system included an ID Printing Module that enabled ID issuance after successful enrollment, allowed template customization based on DepEd guidelines, and supported reprinting of lost or damaged IDs. An Enrollment Management Module was also integrated to verify and approve registrations, maintain centralized student records, and generate essential enrollment reports. The system's quality was assessed using ISO/IEC 25010 standards to ensure reliability, security, usability, and overall effectiveness.

The development of the system followed the Agile Development Methodology to promote flexibility, collaboration, and continuous improvement throughout the project lifecycle. The planning stage established the objectives, scope, and development timeline, while the requirements stage gathered functional and non-functional needs from stakeholders. During the design stage, system architecture, database structures, and user interfaces were formulated based on the identified requirements. The development phase involved implementing the system modules, followed by rigorous testing to ensure correctness, performance efficiency, and security. The final stage involved deploying the system for actual use within the school environment.

The result of the development process was a functional and integrated Senior High School Registration and Information Management System tailored to the needs of Gallanosa National High School. The system streamlined enrollment procedures,

improved accuracy in student record management, and simplified the generation and printing of student identification cards. It enhanced administrative efficiency, minimized manual processing, and provided a secure and centralized platform for managing student information.

Continuous evaluation and improvement were achieved through feedback gathered from system users, including administrators and staff. Their insights regarding system functionality, ease of use, and performance were used to identify areas for enhancement and necessary system adjustments. This ongoing feedback ensured that the system remained responsive to user needs, maintained quality standards, and adapted to changes in school policies and technological advancements

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Findings

The following findings were derived from the system's testing and evaluation, highlighting its effectiveness and performance:

1. The study successfully developed an Senior High School Registration and Information Management System of Gallanosa National High School that supported digital enrollment, automated ID generation, and ID printing, ensuring efficient and accurate processing of student information. The system allowed for faster and more reliable enrollment procedures, reducing errors associated with manual data entry and minimizing delays in student registration.

2. The User Management Module was effectively integrated, enabling authorized users to register new senior high school students, log in using secure authentication credentials, update student addresses and guardian contact information, manage administrator and staff accounts, and generate and print student identification cards. This functionality improved system security and streamlined administrative operations.

3. The system demonstrated seamless compatibility across multiple devices, including desktops, laptops, and mobile devices, allowing students, parents, and staff to access the platform conveniently from different locations.

4. The ID Printing Module successfully enabled the printing of student identification cards upon enrollment, customization of ID templates according to DepEd guidelines, and reprinting of lost or damaged IDs. This feature enhanced the accuracy and professionalism of the school's identification process.

5. The Enrollment Management Module facilitated the approval and verification of registration requests, updating and maintenance of student records in a centralized database, and generation of reports such as summaries of enrolled students by grade level and section, lists of pending and approved

enrollment requests, and student ID issuance status reports. This module significantly improved data organization, accessibility, and administrative efficiency.

6. Evaluation of the developed system based on ISO/IEC 25010 standards indicated high levels of functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability. The system met the technical and operational requirements of the school, proving to be a reliable and effective solution for managing senior high school enrollment and student identification processes.

Conclusions

Based on the findings of the study and the results of the evaluation, the following conclusions were drawn:

1. The Senior High School Registration and Information Management System of Gallanosa National High School
2. Significantly improved the efficiency and accuracy of student enrollment processes at Gallanosa National High School.
3. The User Management Module enhanced administrative control, security, and streamlined account and student ID management.
4. The system's seamless compatibility across multiple devices ensured convenient access for students, parents, and school personnel.
5. The ID Printing Module provided accurate, customizable, and professional student identification cards while allowing easy reprinting.
6. The Enrollment Management Module improved record-keeping, report generation, and overall administrative efficiency.
7. Evaluation based on ISO/IEC 25010 standards confirmed that the system was reliable, secure, user-friendly, and met the school's operational requirements.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are presented:

1. The school may continue using the Senior High School Registration and Information Management System of Gallanosa National High School to maintain efficient and accurate student enrollment processes.
2. Administrators may regularly update and monitor the User Management Module to ensure proper account control and secure handling of student data.
3. The system may be periodically tested across all supported devices to ensure seamless access and functionality.
4. The ID Printing Module may be enhanced with additional templates

and security features to accommodate future DepEd guidelines or school branding requirements.

5. School administrators may utilize the Enrollment Management Module to generate reports frequently for decision-making and effective monitoring of student records.

6. Regular system evaluations based on ISO/IEC 25010 standards may be conducted to maintain high quality, reliability, security, and usability of the platform.

7. The school may provide continuous training and technical support for staff and users to maximize the system's efficiency and ensure proper utilization of all features.

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