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DATA ANALYTICS-BASED STUDENT VIOLATION PREVENTION: DEVELOPMENT OF AN OFFICE OF THE PREFECT OF DISCIPLINE INFORMATION SYSTEM

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Abstract

This study aimed to evaluate and enhance the operations of the Office of the Prefect of Discipline in a Benedictine Higher Educational Institution by developing a centralized web-based system called the Office of the Prefect of Discipline Information and Operations Management System (OPDIOMS). The study addressed several key questions: features needed for efficient data handling; monitoring of students' violations; a referral system; the application of data analytics in operations; and conformity to ISO 25010 standards. The primary beneficiaries are those managing student disciplinary records, including the prefect, assistant prefects, class advisers, guidance counselors, and the dean of student affairs. The study employed a descriptive-developmental research approach and created a user-friendly web application with intuitive navigation, input forms, and feedback mechanisms. The researchers built a web-based program that is easy to use and has reporting, data management, and forecasting capabilities to help monitor, predict, and prevent student violations. It used a MySQL database for fast data storage and retrieval. For successful implementation and user management, the study recommends identifying user requirements, defining functionalities, providing comprehensive training, and planning deployment meticulously. Lastly, the evaluation using ISO 25010 software quality standards yielded strong findings: functionality had a weighted mean of 3.6, performance efficiency 4.253, and security 4.97, indicating strong user acceptance and system reliability. Future recommendations include mobile and notification features, system improvements, institutional implementation of the system throughout the university, full user training and orientation, and improved prescriptive analytics to enhance data analysis.

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Keywords: *Avoidance, Automation, Data Analytics, Operations, Student Violation, Student Monitoring, Web-Based Application*

Introduction

The Office of the Prefect of Student Discipline (OPSD) is an important arm in promoting student growth and discipline in institutions of higher learning. The OPSD enforces institutional norms and regulations and implements policies and initiatives that encourage the holistic formation of students in Benedictine University's College of Arts and Sciences. It handles major and minor disciplinary offenses, monitors student probation, retention, and readmission cases, and makes referrals to the Guidance and Counseling Office (GCO). These duties require handling large volumes of documents and sensitive information that serve as the basis for disciplinary procedures and administrative decision-making. However, with the increasing demand for fast, accurate information, a more systematic, technology-driven approach to managing disciplinary records is required.

Before the study, the OPSD relied mostly on manual, paper-based methods to store, retrieve, and manage student disciplinary records. Important papers such as violation reports, disciplinary contracts, counseling referrals, and probation records were kept in physical files and filing cabinets. These records were administratively valuable, but retrieving information was often time-consuming and labor-intensive, especially when preparing reports, reviewing students' disciplinary records, monitoring probationary status, and determining eligibility for academic and special awards. Manual processes also created risks of lost data, duplicated paperwork, late reports, missed outstanding cases, and poor oversight of student wrongdoing. As the office battled disciplinary problems involving a large student body, operational problems became increasingly obvious.

The issues faced by OPSD reflected the greater need for digital transformation in administrative processes. Conceptualizations of digitalization, in contrast, refer to the reorganization of organizational activities based on digital communication technologies and infrastructures (Brennen & Kreiss). Gartner (2015) similarly defines digitalization as "the use of digital technologies to transform business processes and create new business opportunities for organizational value creation." Digitalization enables effective storage, processing, retrieval, and analysis of information in educational institutions, enhancing operational efficiency and improving decision-making. Furthermore, digital systems provide enhanced security features, access control, and data protection measures that might be difficult to provide with manual record-keeping methods, especially for offices dealing with

sensitive student information. Thus, one way to circumvent the operational limits of the OPSD is to adopt a computerized information management system. Another study by Almalawi et al. (2024) did an extensive review of 124 studies on predictive analytics in education. The study evaluated predictive models in education, focusing on their role in forecasting student performance, identifying at-risk students, and personalizing learning experiences. The study also analyzed key obstacles, including the potential to perpetuate biases in previous data, transparency issues, and the complexity of interpreting AI-driven conclusions. Their work shows how predictive analytics can help schools detect student-related problems before they become larger issues. Similarly, Talbi & Ouared (2024) examine a data-driven decision support system designed to analyze students' engagement. Their approach involved thorough requirement analysis to define decision-makers' needs and select data sources, followed by the development of a multidimensional model capturing engagement aspects and associated metrics of students using learning analytics dashboards. This research emphasizes the significance of decision support systems in the education sector. Like OPDIOMS, the system also uses data analysis to help administrators monitor student-related information and improve decision-making.

Furthermore, Mane, Garcia, and Alamar (2023) created a Student Discipline Referral System with Data Visualization and Descriptive Analytics for Colegio de San Juan de Letran Calamba. The study aimed to address the tedious, time-consuming process of monitoring students' violations and disciplinary records. The system enables documentation, monitoring, and report generation related to student discipline, improving the efficiency and organization of record management. The authors observed that the system improved the processing of disciplinary situations and advocated extending it to a web and mobile application with increased analytics capabilities. Heradura and Damasco (2024) conducted a similar study, developing a Mobile Violation Application to improve the monitoring and verification of students' violations at the school. As student populations grow, experts said there's a need for better ways to manage disciplinary records. Their approach enabled better storage, monitoring, security, and reporting of student infraction data through a digital platform. The study indicated that automated systems increase the accuracy and speed of disciplinary monitoring compared with traditional methods. Although Mane et al. (2023) and Heradura and Damasco (2024) effectively digitized student

disciplinary records and monitoring processes, their primary focus was on recording, tracking, reporting, and managing violations. In contrast, this study presents OPDIOMS, a centralized web-based information system that manages disciplinary records and includes data analytics and forecasting capabilities to identify violation trends and support proactive interventions. Thus, the difference lies in the limited use of predictive analytics in earlier studies, while this research provides a more data-driven strategy that helps the Office of the Prefect of Student Discipline prevent future infractions and improve decision-making.

To address these challenges, the study developed the Office of the Prefect of Discipline Information and Operations Management System (OPDIOMS), a web-based information system intended to automate and streamline OPSD operations. The system was designed to centralize data, simplify processing, safeguard disciplinary records, monitor student violations, auto-refer students to the Guidance and Counseling Office, and generate detailed reports and summaries of violations and sanctions. The system also has data analytics capabilities for descriptive, predictive, and prescriptive analysis to help administrators discover trends in student behavior, forecast disciplinary problems, and design intervention programs. OPDIOMS also has a centralized database, which enhances operational efficiency and provides a more user-friendly way to store and retrieve information.

The produced system was evaluated according to the software quality model ISO/IEC 25010, especially functionality, performance efficiency, and security. The evaluation focused on how well the system met the quality requirements and operational demands of intended users, such as the prefect, assistant prefects, guidance counselors, and other stakeholders involved in managing student discipline. The results show that OPDIOMS is an effective and feasible solution to the difficulties of manual record-keeping and punishment supervision. Digitalization of core procedures and analytics-driven decision support ensured administrative efficiency, data security, prompt report generation, and more effective handling of student disciplinary concerns. The study demonstrated the value of technology-based solutions in modernizing student discipline administration and enhancing evidence-based decision-making in colleges and universities.

Research Questions

The researchers sought to determine and analyze the operations of the Office of the Prefect of Discipline of

the Benedictine Higher Educational Institution. It also aimed to design and develop a system to address existing problems and improve office procedures.

In particular, this study sought to answer the following questions:

1. What are the features of a web-based system called the Office of the Prefect of Discipline Information and Operations Management System (OPDIOMS) in terms of:
 - 1.1. Providing an efficient data handling and security capability for student disciplinary records;
 - 1.2. Providing an efficient monitoring system for student violations.
2. What are the things to consider to easily implement and deploy the OPDIOMS that will help the users manage the system?
3. How can data analytics be applied to the operations of the Office of the Prefect of Discipline in terms of:
 - 3.1. Descriptive;
 - 3.2. Predictive;
 - 3.3. Prescriptive
4. What level of conformity does the OPDIOMS have with the ISO 25010 standards?
 - 4.1. Functionality;
 - 4.2. Security; and
 - 4.3. Efficiency.
4. What are the implications of the study's findings in implementing the ISO 25010 standards in a Benedictine university operation?

METHODOLOGY

Research Design

The researchers employed descriptive-developmental research. Descriptive research is a research design in which data is collected qualitatively and analyzed using qualitative procedures (Nassaji, 2015). Furthermore, descriptive research aims to describe a population, situation, or phenomenon accurately and systematically. It can answer what, where, when, and how questions but not the "why" questions (McCombes, 2019). Descriptive – A developmental research design was used to explain the process of designing and developing the system. Developmental research design covers a systematic approach to developing prototypes: planning, designing, creating, and evaluating output (Olipas, 2019).

Software Development Methodology was also

considered. In developing the system, the researchers followed the phases of the agile Scrum methodology. Agile is a software development methodology that anticipates the need for flexibility and applies pragmatism to the finished product (Brush & Silverthorne, 2022). The Agile method was used for system development. System development is the process of defining, designing, testing, and implementing a software application (Zandbergen & Cena, 2013). Scrum emphasizes collaboration, functioning software, team self-management, and the flexibility to adapt to emerging business realities (James & Walter, 2017). According to the article, Agile is one of the primary development methodologies adopted worldwide (Morandin et al., 2021). This is why the researchers chose the Agile Scrum methodology for this investigation.

Figure 1: *Agile Scrum Phases (pm-partners, 2021)*

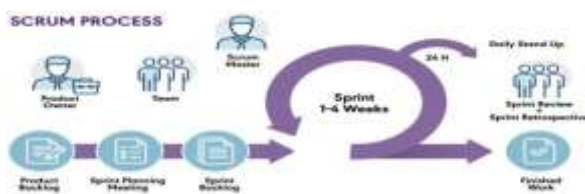


Figure 1 shows the Agile Scrum Process, composed of the product owner, team, scrum master, product backlog, sprint planning meeting, and sprint backlog. The sprint period is one to four weeks, and once the backlog is empty and everything passes review, the work is marked as finished. The product owner represents the customers or the stakeholders. The product owner determines product expectations and records changes. The Scrum team is a self-organized group. The developers are responsible for the design, analytical, and development skills needed to carry out the work, solve problems, and produce deliverable products. The Scrum Master facilitates the Scrum development process. He is responsible for holding daily meetings and updates (Peek, 2023).

Companies use the Agile Scrum methodology to provide strong collaboration and efficiency for project-based work (Peek, 2023). Agile has evolved into the most sought-after methodology for information technology projects and software product development. This software development approach follows the Scrum methodology. The process included iterative steps to ensure all requirements were implemented.

To evaluate the system's efficiency and effectiveness, ISO 25010 was used.

Figure 2: *System Flow*

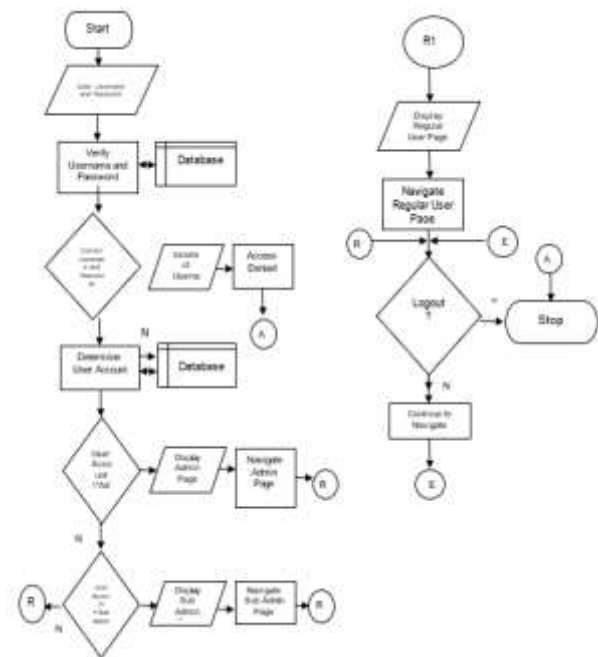


Figure 2 shows the flow of the system from login to logout. The flowchart shows that to access the system; the user should enter a username and password. The system then verifies the input data against the database. If the username and password are entered correctly, the user can access the webpage; otherwise, access to the system is denied. The system has different user account levels. The operations and functions available within the system distinguish the account levels. The admin account can access all system functions, and the sub-admin is limited to adding a user account, while the ordinary user can only view their violations and report a violation or complaint. The user should log out after using the system to ensure its protection and security.

To develop the OPDIOMS, the researcher decided to use the following open-source software for web design and development. XAMPP is the most popular PHP development environment. It is free and easy to install and use (Seidler, 2023). PHP (Hypertext Preprocessor) is a widely used, open-source scripting language (Data, 2024). The CSS (Cascading Style Sheets) language is used to style an HTML document (Data, 2024). The researcher uses open-source software to design and develop the system. For the backend development, MySQL will be used.

The system will allow users to sign up with fields such as username and password. This information is required to access the infrastructure through the login system, where the user enters the username and password. Upon successful login, the user can access the system dashboard.

OPDIOMS has several user access levels: global

admin, admin, and ordinary user. Global admin has access to the entire system, including the codes; admin has access to all system functionality, while regular users can only view records and report a complaint.

The different web page designs of the system are shown and discussed below.

Figure 3: Login Page Design

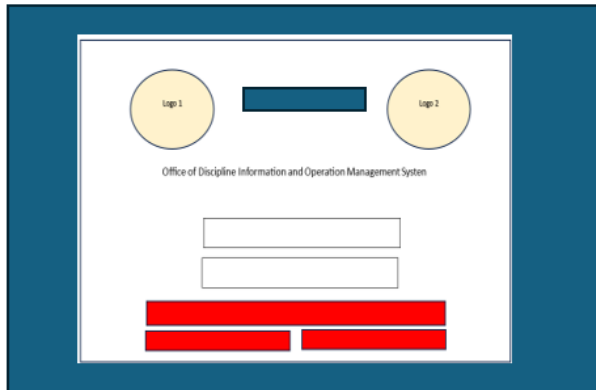


Figure 3 shows the design of the system's login page. The login page prompts the user to log in with a username and password. It can also be used to report and search for a violation. It also has the Remember Me and Forgot Password features.

Figure 4: Home Page Design – Admin Side

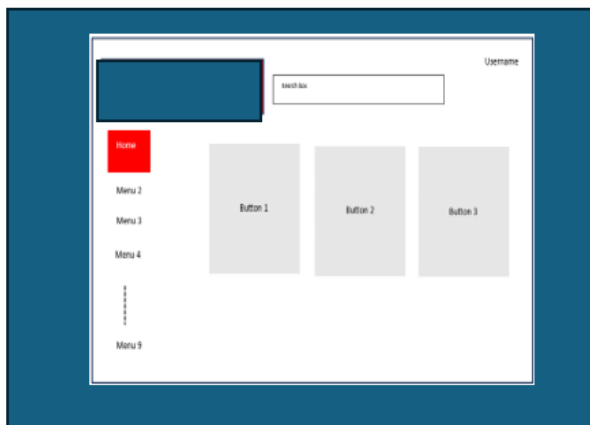
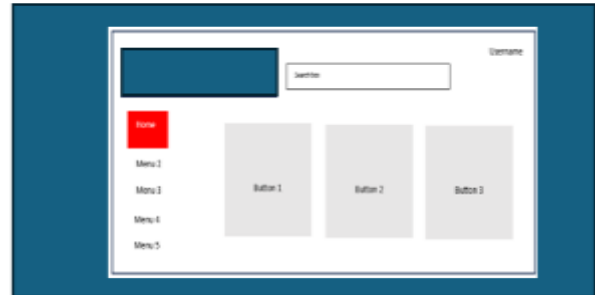


Figure 4 shows the system's home page. It shows the available menus; there are nine menus and three buttons on the admin page. The page is displayed after a successful admin login.

Figure 5: Home Page Design – Sub Admin Side



In software development, the context of an algorithm matters. Data analytics is the process of transforming, processing, and organizing raw data to gain valuable insights relevant to business decisions and provide actionable insights to maximize value from enterprise data. This process also helps measure decisions, reducing the risks associated with making decisions based on data. This process also converts the raw data into insights using visual applications like graphs, pie charts, tables, and many more (Mohammed, 2022).

The researchers used an intelligent rule-based algorithm for data analysis. These algorithms extract knowledge in the form of rules from the classification model, which are easy to comprehend and very expressive. ("What is Rule-Based Algorithm | IGI Global") This algorithm is most suitable for analyzing data containing a mixture of numerical and qualitative attributes (Dash, 2018).

Furthermore, the study considered the following conceptual basis.

Figure 6: Conceptual Framework Design



Figure 6 shows the conceptual structure of the proposed system and the inputs, processes, and expected outputs used to design and implement a student violation monitoring system. This framework presents several critical inputs that form the basis of the system. These include the existing operations and procedures of the Office of the Prefect of Student Discipline (OPSD),

student databases, student violations, and the specific needs identified by the OPSD personnel. These are essential because they provide the information needed to design a system that accurately captures the institution's disciplinary procedures and reporting requirements. The researchers conducted an in-depth analysis of the OPSD's current operations and processes to determine how disciplinary matters are processed, documented, monitored, and resolved. The researchers carefully evaluated the forms and documents currently used in the office to determine their relevance and requirements for the proposed electronic system. The researchers collected and merged student information databases to ensure accurate, up-to-date records are available for monitoring and reporting. The researchers also evaluated the student handbook to identify all recognized student transgressions, major and minor, and their associated consequences. The researchers collected and analyzed these critical inputs to develop a comprehensive system that streamlines disciplinary processes, improves record management, enhances monitoring capabilities, and supports the overall goal of maintaining student discipline and accountability within the institution.

In addition to the main inputs indicated in the conceptual framework, the proposed system also includes advanced data analytics and reporting functionalities to improve decision-making and policy creation. Including analytical capabilities would help the system rapidly collect and assess disciplinary data so administrators can detect trends, patterns, and recurring concerns linked to student behavior. The school employed data analysis to calculate the number of violations, identify students who need help, and analyze the success of disciplinary programs and regulations. The reports provided useful, organized information to support administrative decisions, strategic planning, and the design of new rules to reduce student transgressions and promote appropriate conduct. The development process considered students' and faculty members' concerns and suggestions. The team collected and reviewed complaints, suggestions, and problems from prior disciplinary proceedings to ensure the proposed approach addresses obstacles and avoids past problems. Integrating stakeholder feedback into the design process will improve usability, efficiency, and user adoption, and ensure the software meets the requirements of everyone involved in disciplinary management. The proposed system unifies operational requirements, disciplinary records, student information, stakeholder feedback, data analytics, and reporting functionalities into one integrated platform

for a more effective and reliable way to track student infractions. Finally, the conceptual framework shows how these inputs and processes interact to produce valuable outputs that enable informed decision-making, improve disciplinary management practices, and contribute to the continuous improvement of institutional policies and student development programs.

Sources of Data and Respondents

Key personnel in the Office of the Prefect of Student Discipline (OPSD) assessed the system, including the prefect, assistant prefects, and administrative staff who regularly use and manage the system's functions. Their involvement in the evaluation process was essential because they are the primary users accountable for tracking student discipline records, processing cases, and producing reports. Through these stakeholders' feedback, the study assessed the system's functionality, usability, reliability, and overall effectiveness in supporting the OPSD's daily operations. Their evaluation showed respondents how the system has simplified processes, enhanced efficiency, and fulfilled the office's operational needs.

OPSD personnel were not the only evaluators; guidance counselors also participated because the system provides significant benefits in managing and monitoring matters related to students. Their evaluation helped determine the system's utility in providing counseling interventions, monitoring student disciplinary records, and increasing coordination among offices involved in student welfare. The members of the College of Arts community considered the ISO/IEC 25010 software quality standards during the system conformity assessment. Their participation allowed for an objective assessment of the system's quality features, such as functionality, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability. The study combined the ratings of these stakeholder groups to offer a comprehensive gauge of the system's effectiveness, acceptance, and compliance with established software quality standards. The official respondents were purposively selected.

The sample size was computed using the sample size formula.

$$n_0 = \frac{\hat{p} \times (1 - \hat{p}) \times z^2}{MOE^2}$$

$$n = \frac{n_0}{1 + \frac{n_0}{N}}$$

with

n_0 : sample size pre-correction (rounded up)
 $\hat{p}$: sample proportion
 z : found by using a z-score table
 MOE: margin of error (to be divided to get a decimal)
 n : sample size
 N : population size

The study used the equation, given a population of 130 respondents: 6 guidance counselors, 5 administrators, 31 information technology (IT) professors, and 88 IT students from the College of Arts and Sciences. IT professors and IT students were chosen due to their knowledge and understanding of system design and development. Administrators, staff, and guidance counselors were selected due to their direct engagement in the activities of the Office of the Prefect of Student Discipline (OPSD). The computation showed that the required sample size was 98 respondents, but the researchers used 100 respondents to ensure ample representation. The Google Forms questionnaire was made available to OPSD administrators and staff, IT department faculty members, IT students, and guidance counselors of the College of Arts and Sciences. Purposive sampling was used to identify respondents with the required knowledge and experience to evaluate the system's functionality, security, and efficiency. This sampling technique allows participants to provide relevant and meaningful feedback on the quality and performance of the developed system.

Regarding the limitations of this study, it was conducted in one Benedictine higher education institution. The findings may not be generalizable to other educational institutions with various disciplinary regulations, organizational structures, and student demographics. Purposive sampling was also employed to choose respondents actively participating in the procedures. This does not necessarily reflect the views of the entire university community. Also, the number of respondents was a bit limited. This limited the amount of information collected in the system review. The developed system was evaluated using the ISO/IEC 25010 assessment methodology, largely from the user perception and experience perspective. Subjective evaluations are useful, but they may not accurately indicate its effectiveness under varied operating conditions. Another limitation is the absence of further external validation by other institutions, discipline offices, or independent evaluators, which could have provided additional evidence of its applicability and efficiency in different contexts. Moreover, the disciplinary data used to construct and analyze the system may not represent all the factors that influence student conduct and infractions, since it is based on existing historical records. Finally, the predictive analytics component relies on trends in previous data and projection methodologies; thus, projections may change with shifts in student behavior, institutional policies, or unforeseen events. Keeping these constraints in mind will help us better understand the

study's scope and identify directions for future research and system improvement.

Research Instrument

In this study, the quality of the developed system was evaluated based on the ISO/IEC 25010 software quality model. The ISO 25010 framework provides a list of key quality characteristics for assessing software products. These characteristics enable users to evaluate such aspects as functionality, security, and performance efficiency. The researchers collected the necessary data using a questionnaire based on ISO 25010 standards, focusing on functionality, efficiency, and security. The questionnaire was based on internationally accepted ISO standards; therefore, no new instrument was developed for this study. Furthermore, although the questionnaire was adapted from the widely recognized and extensively used ISO/IEC 25010 framework for software quality evaluation, it was still validated by IT programming specialists and experienced researchers. The evaluation conducted using the adapted instrument ensured an accurate, reliable, and consistent assessment of the software's quality characteristics. Moreover, the tool was tailored to address the specific operational needs of the Office of the Prefect of Discipline in a Benedictine higher educational institution, making it more relevant and appropriate for the study context.

Data Collection and Analysis

The data-gathering procedures used in this study were conversational interviews, observation, document and record reviews, and questionnaires. The researchers interviewed former and current administrators of the Office of the Prefect of Student Discipline (OPSD), such as the prefect, assistant prefects, staff members, and guidance counselors, who were knowledgeable about the office's operations and the proposed system's intended use. The main data collection method was interviews, which gathered detailed information about current processes, challenges in managing disciplinary cases, and recommendations for improving existing processes. The discussions were very useful, drawing on the knowledge of those involved in the day-to-day administration of student discipline and helping to identify system requirements and guide the development of the proposed solution. The researchers also used observation as a data collection technique. To fully understand the workflow and identify inefficiencies in the current system, the researchers observed the OPSD's daily operations and procedures. The researchers also collected, reviewed, and analyzed existing forms, records, and documents to determine the office's information needs and identify measures to prevent future operational problems.

In addition, the researchers conducted document- and record-based research using existing forms, reports, and disciplinary records maintained by the OPSD. These documents contained relevant information that helped design and develop the proposed system and ensured the system's features met the office's real needs. To evaluate the completed system, questionnaires were distributed to all targeted users, namely the prefect, assistant prefects, staff, and guidance counselors. The questionnaires evaluated the system's effectiveness, efficiency, and overall performance after development. The researchers collected comprehensive data to support the study's development and evaluation phases through interviews, observations, document analysis, and questionnaires.

To assess the developed system, the researchers used a five-point Likert scale (5 to 1) among respondents with knowledge and experience in the operations of the Office of the Prefect of Student Discipline (OPSD). The survey data were analyzed using weighted means to determine the extent of respondents' agreement with the software quality characteristics identified in the ISO/IEC 25010 evaluation model. The weighted mean was computed by multiplying the assigned relevance weights by the number of responses and dividing the product by the total weight. To interpret the results, a rating scale was defined based on the a priori range and descriptive equivalents. The scale ranged from 1.00 to 1.80 (Strongly Disagree), 1.90 to 2.60 (Disagree), 2.70 to 3.40 (Neutral), 3.50 to 4.20 (Agree), and 4.30 to 5.00 (Strongly Agree). These rating values were used to interpret respondents' perceptions of the system's functionality, efficiency, security, and overall quality. The Likert scale provided a standardized approach in measuring the users' evaluations and the degree to which the developed system satisfies the ISO/IEC 25010 software standards.

RESULTS AND DISCUSSION

Features of the Office of the Prefect of Discipline Information and Operations Management System (OPDIOMS)

Figure 7: Features of the Office of the Prefect of Discipline Information and Operations Management System (OPDIOMS) in Terms of Providing Efficient Data Handling and Security Capability of Student Disciplinary Records

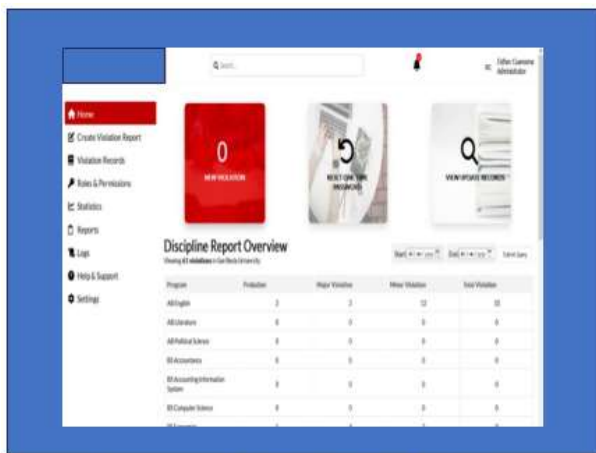


Figure 7 shows the system login page. It is a fundamental security measure. It is the main access point for all authorized users. Users must authenticate by submitting their assigned credentials, such as usernames and passwords, on the login page to access the system's services and data. This authentication method allows only authorized users (administrators, prefects, assistant prefects, staff, and guidance counselors) to view confidential student disciplinary records and other system information. The system uses a secure login method to prevent unauthorized access, changes, and misuse of data, which helps keep the information private, accurate, and secure. Additionally, the login page supports effective user administration by assigning access privileges based on user responsibilities, enabling users to see only the information relevant to their duties. The login page is therefore crucial in preserving system resources, improving user accountability, and ensuring compliance with data protection and security regulations.

The system was developed as a web-based system with a user-friendly interface so authorized users can easily explore and use its capabilities without training or technical knowledge. The system is well designed with user-friendly menus and features readily available for administrators, personnel, and other authorized users to properly fulfill their obligations. All disciplinary records, student information, recommendations, and reports are maintained in a centralized database for effective administration, proper data entry, efficient retrieval, and systematic record preservation. Using a database eliminates the problems of manual recordkeeping, such as missing files, duplicate records, and long searches for information. It also provides excellent security features to prevent unwanted access to sensitive student records and important office supplies. Only users who are logged in with proper credentials and are authorized to access the system. This helps ensure that only authorized personnel can access, alter, or handle data according to their responsibilities and permissions. The system also

provides role-based access control, which limits users to what they are authorized to do. Controls prevent inadvertent or intentional deletion of records and ensure data integrity. The system offers a notification or confirmation prompt for each delete activity to validate that the user is making an intentional action. Also, regular users can't delete information; thus, the probability of data loss or unauthorized alterations is low.

Figure 8: *Features of the Office of the Prefect of Discipline Information and Operations Management System (OPDIOMS) in Terms of Providing an Efficient Monitoring System for Student Violations*



Discipline Report Overview Page – Admin Side

Figure 8 shows the system home page. The system's main interface is the home page, which administrators access after successful login and authentication. This central page allows administrators to view disciplinary reports and monitor and manage student breaches in the institution. The Discipline Report Overview is a key feature of the home page and shows summary statistics of recorded infractions by academic program. This system enables rapid monitoring and decision-making by providing infraction data in an organized, accessible format, allowing administrators to track disciplinary trends and manage student conduct across programs.

Keeping student records in a database makes it much easier and more effective to track and address student infractions. Traditional record-keeping relies on filing cabinets full of paper documents. In contrast, a database-driven system lets authorized users easily and precisely retrieve vital information from a single location. This saves time and effort searching for specific information, improves administrative efficiency, and supports speedy decision-making. Furthermore, maintaining documents in a digital database reduces the chances of records being lost, misplaced, or damaged, a common problem with paper filing systems. The system provides organization and

protection for electronic documents, convenient access when needed, and protection of data integrity. Student infraction records are easily accessible, modifiable, and processable, helping administrators track disciplinary actions and respond quickly to issues. The system can also produce reports that show disciplinary data and trends, which can be useful tools for school administrators, guidance counselors, and disciplinary committees. These reports can be used to assess, make decisions about, and design future student discipline programs and interventions. Thus, a centralized database eases record-keeping and enhances institutional accountability, data accuracy, and effectiveness in addressing student disciplinary issues.

Things to Consider to Easily Implement and Deploy the OPDIOMS that will Help the Users Manage the System

To meet the university's goals and objectives, a thorough, well-organized plan is necessary to build and deploy the Online Processing of Discipline and Incident Office Management System (OPDIOMS). The implementation process begins with extensive planning and assessment, as the institution considers its operational needs, current practices, and anticipated outcomes. This phase is key to gaining a full picture of system functionality and the challenges that may arise during implementation. To reduce deployment risk, administrators and developers may conduct an assessment and strategic planning exercise to set realistic goals, define the project scope, allocate funding, and create an implementation roadmap. Once the design stage is complete, the development and configuration stage ensures that the system accurately reflects all major office processes, rules, and disciplinary procedures. The features and modules should cater to the operational requirements of the discipline office and provide functionality that promotes efficiency, accuracy, and record-keeping. Moreover, before deployment, rigorous testing and quality assurance processes should be performed to discover and fix system defects, validate performance, and ensure the achievement of business objectives.

A critical element of the implementation process is creating a formal deployment plan that outlines the methods, policies, and technical requirements for deploying OPDIOMS into the operating environment. OPDIOMS is a web-based solution; therefore, it can be easily implemented with minimal equipment and deployed at multiple locations. Online technology makes it easy for authorized individuals to view information from any device. This improves productivity and provides for real-time management of disciplinary records and reports. Before full

implementation, conduct user acceptability testing and deployment validation to ensure the new system does not interfere with existing procedures. These activities ensure the system functions as intended in a real-world working environment and that users can carry out their assigned tasks efficiently. Provide comprehensive implementation and deployment documentation to allow administrators and technical staff to install, set up, and operate the system, reducing implementation barriers and improving adoption across the business.

OPDIOMS requires extensive user training and routine monitoring and maintenance operations to attain optimal performance and long-term survivability. Training programs should be tailored and delivered based on the specific roles and responsibilities of system users. Separate training sessions will be provided for admins, sub-admins, and staff personnel. This role model ensures that every user understands the system and has the skills to use it efficiently and correctly. OPDIOMS is a simple, easy-to-use Graphical User Interface that enables users to quickly understand the system and integrate it into their day-to-day activities. It would be especially helpful for new users to include a full user guide with practical advice and step-by-step instructions with screenshots. In addition to training, systems should also be tested and maintained routinely to ensure optimal performance, data security, and long-term availability. Gathers user input and consultation to identify areas for improvement and to help direct future system changes. OPDIOMS will continue to provide reliable and effective assessment, support, and participation in the institution's disciplinary management processes.

3. Data Analytics to be Applied to the Operations of the Office of the Prefect of Discipline

3.1. Data Analytics to be Applied to the Operations of the Office of the Prefect of Discipline in terms of Descriptive Analytics

Figure 9: *Statistics Module Page and Descriptive Diagram Page*



Figure 9 shows the System Statistics Module. It provides a tool for the user to conduct a detailed graphical examination of student infraction data. This module is a strong decision-support tool that transforms

recorded disciplinary data into visualizations that are easier to grasp and analyze. Charts and infographics help users easily understand the overall number of breaches recorded in the system. This feature helps the administration check the college's overall disciplinary position. The module also gives useful information about the academic programs or courses with the most complaints lodged against them. This gives school authorities insight into patterns and helps them target areas that may need assistance or additional guidance. Moreover, the Module also provides information on the most common infractions among students, which might help disciplinary officers and administrators identify recurring behavioral problems and implement appropriate corrective measures. With knowledge of these patterns, the institution can build data-driven strategies, strengthen existing disciplinary processes, and implement initiatives that promote positive student conduct. Within the Statistics Module, there are three major navigation buttons: Descriptive, Predictive, and Prescriptive. The Descriptive Statistics function contains graphs that summarize past infraction records and provide an overview of current data trends. The Predictive Statistics tool provides graphical analysis to help users estimate possible future patterns in student violations based on previously gathered data. It helps administrators anticipate future disciplinary issues. The Prescriptive Statistics tool, meanwhile, gives analytical diagrams to assist decision-making by proposing future actions or treatments for the identified difficulties. The three-part analysis improves the system's usability by allowing the user to assess past and present infraction data, predict future infractions, and take appropriate action. Thus, the Statistics Module is a key component of effective student discipline management, offering meaningful, reliable, and actionable information to support planning, monitoring, assessment, and ongoing improvement of institutional disciplinary programs.

Descriptive analytics are significant in the system because they provide an overview of student violation status and detailed information about students who have committed disciplinary offenses. This function enables administrators and prefects to access crucial data, including the student's course, gender, violation, crime frequency, and other relevant information for analysis. Descriptive analytics helps users identify patterns, trends, and prevalent disciplinary issues by organizing and presenting this data in a simple, understandable way. Information gained through descriptive analysis is useful as a basis for decision-making. School authorities can be more informed about student behavior and factors connected with disciplinary difficulties. Furthermore, this functionality helps administrators and prefects design appropriate

intervention programs, guidance activities, counseling initiatives, and disciplinary measures tailored to students' needs and aimed at reducing infractions. It also helps create prevention strategies to foster personal development, responsible behavior, and character development among pupils. Descriptive analytics doesn't just provide information on student violations; it also provides data on student probation cases, helping administrators track students who require closer monitoring and support. Thus, descriptive analytics strengthens the institution's capacity to manage disciplinary records efficiently, assess current policies and programs, and launch evidence-based initiatives that improve student conduct and create a more pleasant educational environment.

Essentially, the descriptive diagram provides an overall assessment of the system's current student infraction records by presenting facts in an easy-to-understand graphical representation. Administrators, prefects, and other authorized users can view disciplinary information from various viewpoints, providing significant insight into patterns and trends in student conduct. The image depicts violations by course or academic program, gender, type of violation committed, and section. It also makes it possible to determine which groups of students are most often involved in disciplinary proceedings. The system uses charts and graphs to organize information and turn large quantities of data into useful visual summaries, allowing for efficient monitoring and evaluation of disciplinary actions. The chart also provides a thorough evaluation of student misconduct, along with graphical data, crucial findings, and trends to help administrators understand the institution's current disciplinary status. This analysis helps decision-makers identify repeat offenders, identify groups of students needing additional support or intervention, and assess the effectiveness of current disciplinary policies and programs. Additionally, the descriptive diagram is interactive, which increases user engagement because users can access rich statistical information by clicking different regions of the chart. Clicking a chart area brings up more statistics and detailed metrics, allowing users to dig deeper into the data behind the figures and better understand what's driving those student misdeeds. Therefore, the descriptive chart is an important analytical tool that helps data-driven decision-making, improves discipline management processes, and helps develop specific programs and interventions to improve student behavior and promote a more disciplined and supportive learning environment.

3.2. Data Analytics to be Applied to the Operations

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of the Office of the Prefect of Discipline in terms of Predictive Analytics

Figure 10: *Predictive Diagram*

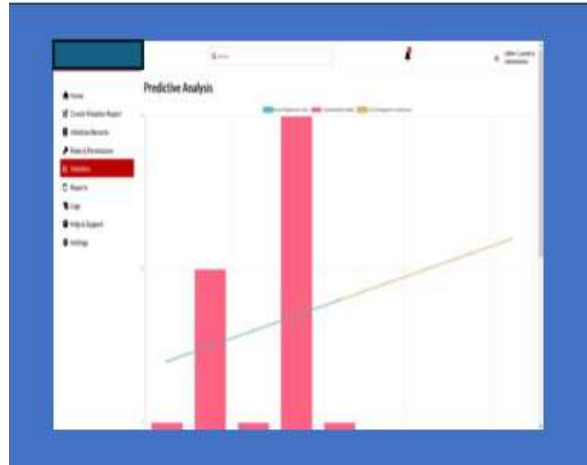


Figure 10 shows the system's predictive diagram. This feature provides predictive analytics based on current student violation records in the database. Descriptive analytics summarize past and present student disciplinary data, whereas predictive analytics predict future student misbehavior based on current patterns and trends. The Predictive Diagram—graphical displays and statistical predictions—illustrates how disciplinary proceedings might unfold over time. The study on this site helps administrators, prefects, and school officials determine whether the number of infractions will increase, decrease, or remain the same in the future. These estimates allow decision-makers to address student discipline issues proactively before they become more serious. The system's predictive information is a crucial building block for planning and policy formulation, allowing school officials to anticipate potential disciplinary concerns and allocate resources accordingly. This analytical capacity will also allow the institution to shift from a reactive model to a proactive, reflective approach to monitoring student conduct. Knowing predicted patterns helps administrators make more informed decisions to foster a safer, more disciplined learning environment and ensure disciplinary actions are used at the right times.

Predictive Diagram data is especially valuable in helping prefects and administrators design effective regulations, programs, and intervention techniques to prevent increases in student misconduct. Technology enables school administrators to recognize trends and anticipate potential disciplinary concerns so that evidence-based interventions can address the core causes of student misbehavior before infractions occur. For instance, if predictive analysis points to a potential increase in specific types of violations or indicates that certain groups of students may be more vulnerable, the

institution can implement monitoring programs, counseling services, mentoring programs, or educational workshops to address these issues. These programs can develop positive attitudes in kids, improve their sense of responsibility, and enable them to make informed choices for their personal and academic development. Seminars can also be organized to raise awareness and reduce the chances of disciplinary problems by inculcating principles, leadership skills, conflict management, and responsible behavior. Continued monitoring and assessment of such initiatives may also increase their effectiveness and support the achievement of institutional goals. Thus, the Predictive Diagram becomes an important decision support tool for educational institutions to proactively manage student punishment, prevent further violations, and promote a culture of responsibility, respect, and constructive behavior among students.

3.3. Data Analytics to be Applied to the Operations of the Office of the Prefect of Discipline in terms of Prescriptive Analytics

Figure 11: Report Pages



Figure 11 shows that prescriptive analytics can inform us what should happen in the future. Prescriptive analytics was applied to OPDIOMS, so the OPSD has an idea regarding student violations in the forecast. It can help the Office of the Prefect of Student Discipline decide what programs to provide to students.

Figure 6 displays the first part of the generated report, which contains detailed information on student breaches and their disciplinary status at the school. Here's a graphic that summarizes the different types of student violations, both significant and minor, and the number of students currently on probation. The visual presentation of the data allows administrators, teachers, and others to clearly view the overall disciplinary picture and to spot patterns or trends that may need to be addressed. The system aggregates infraction and probation data into one visual report, simplifying the tracking of student behavior and the evaluation of the effectiveness of current disciplinary policies and intervention programs. The data provided can serve as a solid basis for developing and improving student

development programs, particularly for monitoring students on probation and providing timely support for students with repeated major or minor violations. Moreover, the report helps identify groups of students who may require guidance, counseling, or behavioral intervention programs to promote a more positive and disciplined learning environment. Furthermore, summarizing and organizing the available data saves time by reducing the need to gather information from multiple sources. As a result, the decision-making process is more effective and evidence-based. The study also offers a tool that school administrators may use to evaluate the performance of current initiatives, spend money wisely, and develop rules for addressing common disciplinary problems. This report is an essential management tool that provides accurate, accessible, and meaningful information to support informed decisions to improve student conduct, institutional discipline, and the overall success and well-being of the student body.

This site publishes the second part of the report, which covers student transgressions and includes visual representations of data through diagrams and charts. The data presented is important for evaluating students' overall behavior patterns and is a useful tool for tracking the performance of disciplinary rules and intervention programs conducted by the institution. The report presents infraction data in a graphical style, allowing administrators, instructors, and decision-makers to easily spot patterns, compare findings from one period to another, and evaluate whether student behavior is improving or worsening over time. An important feature of this site is that it can display trends, such as whether the number of student violations is increasing or decreasing. As shown in the figure above, violations drop significantly after the first month, suggesting that the tactics, regulations, or behavioral programs implemented are positively affecting student behavior. This downward trend provides strong evidence that the institution's initiatives to encourage discipline and appropriate conduct are yielding positive outcomes. However, you must continue to monitor it to ensure progress continues over time. The report also provides key statistical metrics like the mean, median, and mode to gain insight into the distribution and prevalence of breaches. These metrics enable the stakeholders to assess the data more accurately and find common trends or recurring concerns that may require attention. Moreover, the information on this page supports informed decision-making by providing trustworthy evidence to assess existing programs, revise current policies, or create new interventions as appropriate. Overall, the information in this part of the report is important to the institution's effective

administration of students and continuous improvement to maintain a positive and disciplined learning environment.

4. Level of conformity of the OPDIOMS concerning the ISO 25010 standards

This section discusses the results collected from the different individuals involved in testing and evaluating the system. All responses were analyzed and weighted using the Likert scale statistical tool to determine the overall rating for each scale. Each scale is interpreted as a response indicating compliance with the ISO 25010 evaluation criteria.

4.1. Functionality

Table 1: ISO 25010 Functional Suitability Evaluation

ISO 25010	MEAN	SD	INTERPRETATION
1. The software meets all the functional requirements specified in the research objectives.	4.77	0.45	STRONGLY AGREE
2. The software provided all the necessary features specified in the research objectives.	4.77	0.42	STRONGLY AGREE
3. Some errors and bugs affect the functionality of the system.	1.26	0.71	STRONGLY DISAGREE
AVERAGE WEIGHTED MEAN	3.6		POSITIVE PERCEPTION (AGREE)

Table 1 shows that the system has the functionality needed to answer the research problems; it offers features specified in the research objectives, and the user did not encounter errors that affect the software's functionality. Based on these criteria, if the software meets all functional requirements specified in the research objectives, respondents answer "strongly agree," indicating that they appreciate the system design. Most respondents strongly agreed that the system provided all the necessary features specified in the research objectives. Lastly, the respondents strongly disagreed that errors and bugs affect the system's functionality.

Users expressed positive opinions on the system's overall performance and applicability, reporting high satisfaction with its effectiveness and practical usefulness. Respondents believed the system could fulfill its intended objectives and provide a reliable, efficient user experience. The system's usability for the tasks and operational requirements demonstrates that it meets users' needs and expectations. Furthermore, the positive feedback indicates that the system's features, functionality, and user-friendliness aided user acceptance. The results show the system is useful, with reliable performance and significant support for users

in accomplishing their intended activities.

4.2. Security

Table 2: ISO 25010 Security Evaluation

ISO 25010	MEAN	SD	INTERPRETATION
1. Does the application use appropriate encryption and authentication measures to protect the sensitive data?	4.96	0.24	STRONGLY AGREE
2. Does the application comply with educational standards or regulations for data privacy and security?	4.98	0.14	STRONGLY AGREE
3. The software is tested easily.	4.98	0.14	STRONGLY AGREE
AVERAGE WEIGHTED MEAN	4.97		POSITIVE PERCEPTION (STRONGLY AGREE)

Table 2 shows that users have a favorable opinion of the software's security, based on the ISO 25010 security assessment findings. They agree that the software is simple to test and conforms to industry norms and laws around data protection and security. The security evaluation includes the following criteria: Does the application use appropriate encryption and authentication measures to protect sensitive data? Does the application comply with educational standards or regulations for data privacy and security? Is the software easy to test? The respondents strongly agreed that OPDIOMS met the ISO25010 standards for security.

The respondents' overall perception was characterized by strong agreement, suggesting a very positive assessment of the system and its capabilities. This result indicates that the users were satisfied with the system performance, functionality, and relevance to their needs. The high agreement score indicates respondents' confidence in the system's ability to fulfill its intended purpose and provide a positive user experience. Furthermore, the results showed that the system was perceived as reliable, easy to use, and helpful for accomplishing tasks efficiently. Users liked the system's features and its contribution to improving productivity and convenience. A positive perception also means that the design, usability, and quality were at or above the user's expectations. Such a level of agreement is an important indicator of user acceptance, as it shows the system's effectiveness in addressing the identified requirements and challenges. Moreover, respondents' positive evaluation also indicates the possibility of continued use and recommendation to others. These results show that the system successfully provides significant benefits and reaches its target users. Overall, the results show a high level of approval, demonstrating the system's effectiveness, practicality, and feasibility for continued

implementation and use within its intended environment.

4.3. Efficiency

Table 3: ISO 25010 Performance Efficiency Evaluation

ISO 25010	MEAN	SD	INTERPRETATION
1. Does the software perform tasks quickly and efficiently?	4.94	0.24	STRONGLY AGREE
2. The system utilizes resources efficiently.	4.96	0.20	STRONGLY AGREE
3. There are performance bottlenecks or areas for optimization.	2.86	0.90	NEUTRAL
AVERAGE WEIGHTED MEAN	4.253		POSITIVE PERCEPTION (AGREE)

Table 3 shows that the software performs tasks quickly and efficiently. It utilizes the resources smoothly and effectively. Based on the ISO 25010 efficiency criteria, respondents strongly agreed that the software performs tasks quickly and efficiently. In the standard, when the system uses resources efficiently, respondents are convinced and respond with strong agreement. However, respondents answered neutrally on criteria related to performance bottlenecks or areas for optimization. Overall, they had a positive perception of the OPDIOMS, with participants agreeing that it is efficient.

Overall, the software received a positive perception in terms of performance efficiency; however, some areas need improvement. This shows that customers trusted the software to perform what it was supposed to do well and consistently. Respondents valued the system's capacity to complete jobs within an acceptable timeframe. That meant a better user experience and increased productivity. The positive result indicates that the application is meeting several of its clients' performance requirements, namely responsiveness, functionality, and operational stability. Overall results are good, but there is still room to grow in key performance areas. Others have offered ways to improve the system's speed, remove delays, and increase overall efficiency during high-volume or complex processes. Such insights enable developers to improve existing functionality while addressing performance issues that may reduce consumer satisfaction. Continuous improvement in these areas will help to ensure that software remains effective, competitive, and adaptable to changing user needs. The application was generally effective, and users responded positively, but the results indicate that future deployments require more development and optimization to improve efficacy, dependability, and user satisfaction.

5. Implications of the Study's Findings in implementing the ISO 25010 standards in a

Benedictine University Operation

The results indicate that the Office of the Prefect of Discipline Information and Operations Management System (OPDIOMS) has a key feature that enables efficient data processing and strengthens the security of student disciplinary records, supporting the implementation of ISO 25010 software quality standards. Only administrators, prefects, assistant prefects, staff, and guidance counselors have access to essential disciplinary information through a secure login page. The system ensures record confidentiality through user identification and role-based access control, preventing unauthorized access, alteration, and misappropriation while ensuring data integrity and accountability. OPDIOMS also features a user-friendly web-based interface that allows authorized employees to navigate the system efficiently without needing technical expertise. In the centralized database structure, all disciplinary records, student data, recommendations, and reports are kept in one location, enabling faster data retrieval, more systematic record management, and greater administrative efficiency. The results also show that the system eliminates common problems in manual record-keeping, such as missing files, duplicate records, and time-consuming searches. Security measures, including user permissions, deletion confirmations, and bans on unauthorized changes, improve system stability. Dada et al. (2024) support this, stating that role-based access control systems at academic institutions significantly improve data security, operational efficiency, accountability, and data integrity by restricting access to information relevant to users' specific roles. Their availability means OPDIOMS is a secure, efficient platform for maintaining student disciplinary records and helps institutions meet data protection standards and contemporary information management practices.

The results also confirmed that OPDIOMS is a strong monitoring and decision-support system, as it integrates analytics and reporting functionalities. The Discipline Report Overview page is a single-page dashboard for administrators that combines discipline information by academic program to enable real-time monitoring of student transgressions and evidence-based decision-making. The Statistics Module further enhances the system's capabilities by adding descriptive, predictive, and prescriptive analytics. The descriptive analytics function allows administrators to assess student infractions by program, gender, section, and offense type to detect behavioral trends, high-risk groups, and prevalent disciplinary problems. Predictive analytics goes further, using historical disciplinary trends to

anticipate likely future infractions. This means school administrators can develop policies, interventions, and student support programs ahead of time, before problems escalate. Similarly, prescriptive analytics capability offers recommendations for future actions and techniques that could effectively address detected disciplinary problems. The results of the study reveal that these analytical tools transform disciplinary data into meaningful information for specific counseling programs, seminars, monitoring activities, and preventive interventions to reduce student misconduct and foster positive behaviors. The effectiveness of such data-driven approaches is in line with the results of Gaftandzhieva et al. (2023), who found that educational institutions can greatly benefit from data analytics and decision-support systems with better monitoring capabilities, more institutional effectiveness, support for evidence-based policy formulation, and administrators' ability to make informed decisions that positively impact student outcomes. Thus, including advanced analytics in OPDIOMS enhances the institution's capacity to proactively and strategically manage student discipline, cultivating a more supportive and accountable educational environment.

CONCLUSION

The study found that evaluating the Prefect of Discipline Information and Operations Management System (OPDIOMS) using ISO 25010 software quality standards yielded strong findings showing high user acceptance and system reliability. The researchers successfully designed and developed the centralized Office of the Prefect of Discipline Information and Operations Management System (OPDIOMS), a user-friendly web-based application that can effectively improve the management of student disciplinary records and the overall operations of the Office of the Prefect of Student Discipline. The researchers included various user interface features to improve ease of use, accessibility, and efficiency for the system's diverse users. A well-structured navigation menu was designed to guide users throughout the application's many modules and functionalities, providing a seamless navigation experience. Input forms were also introduced to systematically gather, record, and monitor reports on student breaches, complaints, and disciplinary issues. Interactive buttons and clear iconography were also introduced to enable users to follow instructions and access system operations with minimal effort. The system provides instant feedback to users through confirmation messages, alerts, and error messages. This increases user satisfaction and encourages correct data entry by notifying users of their work status and preventing input errors. The system is

powered by a MySQL database that efficiently saves, organizes, and maintains large volumes of student data, including personal information, disciplinary records, violation history, and probation status. The database structure ensures data consistency, availability, and reliable retrieval for decision-making and reporting. The developed program also uses predictive techniques to analyze previous violation data and identify patterns and trends that may indicate future violations. The system uses predictive analysis to help administrators develop proactive intervention programs to reduce disciplinary infractions and encourage positive student behavior. The software quality was evaluated using the ISO/IEC 25010 model, focusing on the essential criteria of functionality, efficiency, and security. The evaluation findings suggested that functionality had a mean score of 3.600, indicating that the system can accomplish the given tasks and meet user criteria satisfactorily. The mean value for the efficiency criterion was higher (4.253), showing the system's ability to provide reliable performance while optimizing resources and response times. Most notably, the security feature had an excellent mean score of 4.970, indicating that the program protects sensitive information and ensures data confidentiality. The results suggest that the proposed system is functional, efficient, safe, and capable of supporting data-driven disciplinary management and student infraction prevention programs.

RECOMMENDATIONS

The following recommendations are based on the study's results and conclusions, taking into account its scope and limitations. The data and conclusions show that this study can be improved; hence, the following recommendations are made:

1. **Consider Mobile & Notification Features System Improvements**
Future development of OPDIOMS should include a mobile application version to improve user accessibility, convenience, and responsiveness. The system should also include automatic email and mobile alerts to warn students when a violation is logged, so they can track their behavior and address disciplinary issues promptly.
2. **Institutionalize its implementation throughout the university.**
The university should expand the use of OPDIOMS to monitor student breaches across all colleges and academic areas. The system should be designed for use by multiple offices. This will ensure a consistent, clear, university-

wide approach to administering and monitoring discipline. The university should also institutionalize the full deployment and continuous use of OPDIOMS in all discipline-related offices to ensure sustainability, standardize disciplinary procedures, and support long-term student behavior management.

3. **Offer Full User Training and Orientation.**

The system's functions will be regularly trained to disciplinary officers, administrators, academics, and other authorized users so they can use the system efficiently. Further capacity building will improve user competency and data accuracy and will enable effective adoption of OPDIOMS across the institution.

4. **Consider improved Prescriptive analytics that makes data analysis better.**

Augment the predictive power of OPDIOMS with prescriptive analysis. This innovation will enable the system to identify potential infractions and generate data-driven recommendations on interventions, remedial actions, and preventative approaches to help the Office of the Prefect of Student Discipline make educated judgments.

5. **For Future Research**

Incorporate a relevant theoretical framework to strengthen the design and development of the student violation monitoring software and to produce more conclusive and meaningful research findings. Similarly, future studies may employ a mixed-methods design to clearly evaluate and distinguish findings generated from qualitative data from those generated through quantitative evaluation.

Ethical Consideration

This study, "Data Analytics-Based Student Violation Prevention: Development of an Office of the Prefect of Discipline Information System," was conducted with high ethical standards in collecting, processing, and managing disciplinary data. All student data utilized for system development and testing were anonymized by removing personally identifiable information, and unique codes were assigned to ensure that individual identities could not be directly matched to recorded violations. Access to the research data was restricted to the lead researchers, the research adviser, and approved individuals directly participating in the project, all of whom were bound by confidentiality restrictions. Research data were securely stored in password-

protected, encrypted digital repositories and retained only for the duration necessary to complete the study and comply with institutional research requirements, after which they would be securely deleted or archived in accordance with data retention policies. The researchers employed appropriate technical and administrative precautions, including access controls, secure authentication systems, and data encryption throughout the research process, to prevent unauthorized disclosure. Moreover, the system's predictive analytics feature was not meant to label, stereotype, or profile students, but only to uncover behavioral trends and possible risk signs. Any analytical products generated by the system were intended as decision-support tools for authorized professionals and were subject to human assessment and professional judgment to ensure fairness, reduce bias, and protect students from discrimination or unfair disciplinary action.

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