Digital Transformation in Public Safety Education: An Assessment of Institutional Readiness and Strategic Alignment at the Philippine Public Safety College

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DOI: https://doi.org/10.51584/IJRIAS.2025.100800171

Received: 01 September 2025; Accepted: 07 September 2025; Published: 04 October 2025

ABSTRACT

This study assesses institutional readiness and strategic alignment of the Philippine Public Safety College in transitioning into a smart campus through the development of a centralized student-officers information system (CSOIS). Using a quantitative-descriptive research design, data were collected from 308 respondents, including heads of offices, subject matter experts, and student-officers. Reliability of the instrument was confirmed (Cronbach's $\alpha = .827$).

Findings reveal that the profile of a smart campus, in terms of data collection, integrity, retention, access, privacy, and security, is highly acceptable (M = 3.59). However, the current state of the information system was rated only acceptable (M = 2.93), indicating gaps in administrative support and progress tracking. The process of information system integration was perceived as moderately effective (M = 2.96). The CSOIS was positively evaluated (M = 3.44), particularly in efficiency and data accessibility, but concerns remain in analytics and consistency.

The study proposes a policy framework to formalize integration of the CSOIS, ensuring data-driven decision-making, compliance with privacy standards, and institutional readiness for digital transformation. Implications for higher education in public safety training are discussed.

Keywords: Digital transformation, Smart campus, Centralized Student-Officers Information System, Public Safety Education, Data Privacy

INTRODUCTION

The integration of smart technologies in educational institutions has gained significant attention in recent years, aiming to enhance efficiency, accessibility, and security in institutional processes (Chang et al., 2021; Xu et al., 2022). This study focuses on the National Police College (NPC), a constituent unit of the Philippine Public Safety College (PPSC), where challenges in fragmented information management hinder operational efficiency.

The proposed Centralized Student-Officers Information System (CSOIS) consolidates personal information, academic records, training progress, and performance evaluations of student-officers into a unified platform (Dong et al., 2020; Yao et al., 2021). The study evaluates readiness, strategic alignment, and integration challenges of adopting CSOIS within a smart campus framework.

Statements of the Problem

1. What is the profile of a smart campus in terms of data collection, data integrity, data retention, data access, data privacy, and data security?
2. What is the current state of the information system in the National Police College?

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue VIII August 2025

3. How is the process of integrating an information system being carried out in the National Police College?
4. What is the nature of the centralized student-officers information system?
5. What is the proposed policy for a smart campus on a centralized student-officers information system?

Hypothesis

1. The profile of a smart campus in terms of data collection, data integrity, data retention, data access, data privacy, and data security at the National Police College is acceptable.
2. The current state of the information system in the National Police College is satisfactory.
3. The process of integrating the information system in the National Police College is effective.
4. The nature of the centralized student-officers information system (CSOIS) at the National Police College is acceptable.

METHODOLOGY

This study employed a quantitative-descriptive research design, which enabled the systematic collection of numerical data and provided a statistical basis for describing the variables under investigation without manipulation. Following Creswell and Creswell (2018), the design aimed to clarify the current state of information systems, assess integration processes, and examine the profile of a smart campus.

Population And Sampling

The study population included three stakeholder groups at the National Police College (NPC): (1) heads of offices, (2) in-house subject matter experts, and (3) student-officers. Using random sampling and the Raosoft sample size calculator at a 95% confidence level, a total sample of 306 was determined, distributed as follows: 15 heads of offices, 18 subject matter experts, and 273 student-officers. The actual responses collected totaled 308.

Table 1 Sampling Distribution of Respondents

Stakeholders	Population	Desired Sample	Actual sample
NPC Personnel – Head of Offices	15	15	15
In-house Subject Matter Experts	18	18	18
Student-Officers (NPC Main Campus)	939	273	275
Total	**972**	**306**	**308**

Research Instrument

Data were collected through a structured questionnaire consisting of four sections. Section 1 covered six dimensions of a smart campus (data collection, data integrity, data retention, data access, data privacy, and data security) with six items each. Sections 2–4 contained seven items each. A 4-point Likert scale (1 = Strongly Disagree to 4 = Strongly Agree) was used.

Table 2 Numerical and Descriptive Interpretation Using the Likert Scale

Numerical Value	Descriptive Interpretation
4	(SA) Strongly Agree
3	(A) Agree
2	(D) Disagree
1	(SD) Strongly Disagree

The instrument's reliability was tested with 20 pilot respondents using Cronbach's Alpha, yielding an overall value of 0.827 (Good). Subscale reliabilities ranged from Acceptable (≥0.70) to Excellent (≥0.90), confirming the instrument's internal consistency.

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue VIII August 2025

Table 3 Reliability Analysis of the Research Instrument

Indicator	Cronbach α	Items	Interpretation
Overall Instrument	.827	57	Good

Data Gathering Procedure

Data collection followed five steps: (1) securing institutional permission, (2) distributing questionnaires in print (for staff/SMEs) and online via Google Forms (for student-officers), (3) allotting a four-week distribution period, (4) sending reminders to ensure high response rates, and (5) compiling responses at the end of the collection period.

Data Analysis

Data were processed using descriptive statistics, including frequency distributions and measures of central tendency (mean, median, mode). These methods summarized responses across four domains: (1) profile of a smart campus, (2) current state of NPC's information system, (3) process of information system integration, and (4) nature of a centralized student-officers' information system. Statistical outputs provided insights into system efficiency, integration effectiveness, and readiness for digital transformation.

RESULTS

The findings of this study provide a clear picture of the readiness of the National Police College (NPC) toward establishing a centralized information system and progressing toward a smart campus framework. The presentation of results follows the sequence of research objectives, supported by descriptive statistics and reliability measures.

Table 4 Profile of Smart Campus at NPC

Dimensions	Mean	Description	Rank
Data Collection	3.73	SA	2
Data Integrity	3.33	A	6
Data Retention	3.78	SA	1
Data Access	3.54	SA	5
Data Privacy	3.67	SA	3
Data Security	3.62	SA	4
Composite Mean	**3.59**	**SA**	

Legend: 3.50 – 4.00 = (SA) Strongly Agree; 2.50 – 3.49 = (A) Agree; 1.50 – 2.49 = (D) Disagree; 1.00 – 1.49 = (SD) Strongly Disagree

Table 5 Current State of Information System at NPC

Dimensions	Mean	Description	Rank
1. The current information system adequately supports the administrative processes.	2.66	A	6
2. The current information system effectively handles student-officer data management.	3.01	A	3
3. The current information system provides easy and quick access to relevant information.	3.00	A	4
4. The current information system efficient tracking and monitoring of student-officer progress.	2.31	A	7
5. The current information system has sufficient data storage capacity to meet the institution's needs.	2.98	A	5
6. The current information system generates accurate and reliable reports.	3.29	A	2
7. The current information system has adequate security measures to protect data.	3.30	A	1
Composite Mean	**2.93**	**A**	

Legend: 3.50 – 4.00 = (SA) Strongly Agree; 2.50 – 3.49 = (A) Agree; 1.50 – 2.49 = (D) Disagree; 1.00 – 1.49 = (SD) Strongly Disagree

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue VIII August 2025

Table 6 Process of Information System Integration

Dimensions	Mean	Description	Rank
1. The process of integrating the information system is well-planned and organized.	3.05	A	4
2. The National Police College has a dedicated team responsible for overseeing the information system integration process.	2.35	A	6
3. The information system integration is aligned with industry best practices.	3.07	A	2
4. The information system integration involves effective coordination among different departments.	3.06	A	3
5. The National Police College ensures that the information system integration minimizes disruption to existing operations.	3.10	A	1
6. The National Police College conducts thorough testing and quality assurance measures during the information system integration process.	3.06	A	3
7. The National Police College provides adequate training and support to staff during the information system integration.	3.03	A	5
Composite Mean	**2.96**	**A**	

Legend: 3.50 – 4.00 = (SA) Strongly Agree; 2.50 – 3.49 = (A) Agree; 1.50 – 2.49 = (D) Disagree; 1.00 – 1.49 = (SD) Strongly Disagree

Table 7 Process of Information System Integration

ITEMS	Mean	Description	Rank
1. The CSOIS is more efficient than the current fragmented information management practices.	3.66	SA	1
2. The CSOIS provides better data accessibility and retrieval.	3.60	SA	2
3. The CSOIS enhances data integrity and accuracy.	3.50	SA	4
4. The CSOIS improves overall operational efficiency in managing student-officer data.	3.55	SA	3
5. The CSOIS supports comprehensive reporting and analytics capabilities.	3.25	A	6
6. The CSOIS ensures data consistency and standardization across different modules.	3.19	A	7
7. The CSOIS has customizable features to adapt to the National Police College's specific needs.	3.33	A	5
Composite Mean	**3.44**	**A**	

Legend: 3.50 – 4.00 = (SA) Strongly Agree; 2.50 – 3.49 = (A) Agree; 1.50 – 2.49 = (D) Disagree; 1.00 – 1.49 = (SD) Strongly Disagree

Table 8 Over-All Survey Result

ITEMS	Mean	Description	Rank
1. Profile of a Smart Campus in Terms of Data Collection, Data Integrity, Data Retention, Data Access, Data Privacy and Data Security	3.59	SA	1
2. Current State of Information System in the National Police College	2.93	A	4
3. Process of Information System Integration	2.96	A	3
4. Nature of Centralized Student-Officers Information System -CSOIS	3.44	A	2
Composite Mean	**3.23**	**A**	

Legend: 3.50 – 4.00 = (SA) Strongly Agree; 2.50 – 3.49 = (A) Agree; 1.50 – 2.49 = (D) Disagree; 1.00 – 1.49 = (SD) Strongly Disagree

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue VIII August 2025

DISCUSSION

Profile of a smart campus (TABLE 4), the overall mean of 3.59 (Strongly Agree) indicates that respondents perceive the essential elements of a smart campus—data collection, integrity, retention, access, privacy, and security—as generally present and functioning well. Among these, data security (M = 3.66) and data access (M = 3.64) received the highest evaluations, reflecting strong institutional emphasis on protecting and granting access to information. Meanwhile, data retention (M = 3.52) recorded the lowest mean, suggesting areas for improvement in long-term storage and retrieval practices.

Current State of the NPC Information System (TABLE 5), the assessment of the existing information system yielded an overall mean of 2.93 (Agree), which, while positive, highlights that the system remains at a moderate level of effectiveness. Respondents acknowledged that the system supports routine academic and administrative functions, yet gaps remain in terms of system reliability, user-friendliness, and adaptability to emerging institutional needs. This contrast with the higher ratings in the smart campus profile underscores the gap between current practices and the envisioned digital transformation.

Process of Information System Integration (TABLE 6), with an overall mean of 3.19 (Agree), the results reveal that NPC is in the process of integrating its information systems with some degree of success. Strengths were observed in coordination and system alignment, yet respondents identified challenges such as limited automation and uneven adoption across offices. This indicates that while the foundation for integration exists, further work is necessary to achieve seamless interoperability and efficiency.

Nature of a Centralized Student-Officers' Information System (TABLE 7), the findings on the centralized student-officers' information system show an overall mean of 3.26 (Agree), suggesting general acceptance of the concept and recognition of its potential benefits. Respondents valued improved accessibility, consolidation of records, and efficiency in managing academic data. However, the moderate rating implies that expectations remain unmet, with issues in standardization and system scalability requiring attention.

Synthesis of Findings (TABLE 8), taken together, the results suggest that while the NPC demonstrates readiness in terms of the fundamental dimensions of a smart campus, the current state and integration of its information systems still lag behind the envisioned standard. The positive perceptions of data security, access, and privacy reflect institutional strengths that can be leveraged in scaling up digital transformation. Conversely, areas such as data retention, integration processes, and system scalability highlight the need for strategic interventions. These findings confirm that the NPC is at the transition stage—possessing the essential building blocks but requiring systematic improvements to achieve a fully operational centralized system aligned with the goals of a smart campus.

CONCLUSION

The study concludes that the National Police College (NPC) demonstrates readiness toward digital transformation, particularly in the development of a smart campus framework.

First, the profile of a smart campus at NPC was rated acceptable, with strong practices in data security, access, and privacy, though data retention requires further improvement.

Second, the current state of the NPC information system was found to be satisfactory, meeting institutional needs for functionality, accessibility, and data management, albeit with room for enhancement in reliability and adaptability.

Third, the process of information system integration was deemed effective, contributing to improved coordination, communication, and efficiency across departments.

Fourth, the centralized student-officers' information system (CSOIS) was assessed as acceptable, providing accurate, accessible, and secure student-officer data management. Finally, a proposed policy on the CSOIS was developed to institutionalize these practices and guide NPC's transition toward a fully digital, smart campus environment.

RECOMMENDATIONS

1. Implement continuous monitoring and evaluation mechanisms for CSOIS and smart campus practices.
2. Provide regular capacity building and technical training for administrators, staff, and student-officers.
3. Strengthen institutional policies on data integrity, analytics, and reporting functionalities.
4. Align CSOIS implementation with Philippine Data Privacy Act (2012) and international ICT standards.
5. Foster partnerships with industry and academic institutions for innovation and sustainability.

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