



# **DIGITIZATION AND STREAMLINING INITIATIVES, AND CHALLENGES ON GOVERNANCE AND OPERATIONS AMONG SCHOOL HEADS IN BASIC EDUCATION INSTITUTIONS IN CALABARZON REGION**

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## **ABSTRACT**

*This study examined the implementation of digitization and streamlining initiatives in school governance and operations among standalone senior high school heads in Region IV-A CALABARZON during the School Year 2025–2026. It aimed to determine the extent of implementation, identify the challenges experienced by school heads, and determine whether significant differences existed across respondents grouped by profile variables and province. The study also sought to provide information that may help improve school management practices and strengthen digital transformation in educational institutions.*

*A descriptive quantitative research design was employed in the study. Data were collected through a validated survey questionnaire distributed to selected standalone senior high school heads from basic education institutions. The gathered data were analyzed using weighted means, ranking, and inferential statistical tools to assess responses and address the study's objectives.*

*The results showed that digitization initiatives in school governance and operations were implemented at a generally high level. Schools have already adopted digital systems for communication, records management, cloud storage, and compliance with ICT-related policies and standards. However, some indicators, particularly the use of digital research repositories and e-library resources, were only moderately implemented, suggesting that some digital academic resources remain underutilized.*

*The findings further revealed that streamlining initiatives were likewise highly implemented. Automation of administrative workflows, online enrollment systems, and digital governance processes were among the most widely implemented initiatives that improved efficiency and accelerated service delivery in schools. Nevertheless, digital payment systems and single-entry data systems received moderate ratings, indicating that complete integration of digital systems has not yet been fully attained.*

*Regarding the challenges encountered, school heads experienced moderate difficulty in implementing digitization and streamlining initiatives. The most common concerns included high software costs, limited ICT funding, a shortage of technical personnel, unstable internet connectivity, and outdated systems. Other difficulties such as limited training opportunities, inconsistent use of platforms, and technical system errors also affected the implementation process.*

*The inferential analysis revealed no significant differences in the implementation of digitization and streamlining initiatives when respondents were grouped according to profile variables and province. Similarly, no significant differences were found in the challenges encountered by school heads across different groups and geographic locations. These findings indicate that schools generally share similar implementation practices and experiences in relation to digital transformation initiatives.*

*The study concludes that digitization and streamlining initiatives are already evident in school governance and operations and have contributed to improving administrative efficiency and school management practices. Despite the progress achieved, several concerns related to funding, infrastructure, technical support, and training continue to affect full implementation. Hence, continuous support and improvement programs are necessary to further strengthen digital transformation in basic education institutions.*

## **INTRODUCTION**

Digital transformation in basic education may help the schools work for better processes in terms of administrative task because technology is now a big part of everyday activities. The Department of Education initiate the digital systems to improves the clarity, accountability, and how the tasks are organized in school operations. In terms of school governance, the integration of digital tools enhances clarity, strengthens accountability, and improves coordination across institutional processes.

These changes need the strong leadership, especially in the Department of Education, since students are directly affected. School Leaders should stay active and involved as technology continues to grow. Safiek (2019) found that consistent efforts help develop skills needed to meet global standards and support national goals.

In education, digital tools are very essential in managing tasks and teaching learners. Based on the study of Charu (2023), the use of technology in education plays a vital role in moving forward while supporting broader community aims. According to the observation of Ipsita (2024), there's full success if teachers receive proper preparation, systems are built well, and each learner gets their chance to engage. Starlin (2018) emphasized how guidance from decision-makers makes a difference when applying new teaching strategies in the classrooms.

Studies explained how digital technologies promote greater opportunities when it comes to educational and instructional practices. Although the success of using technology is evident, there are still some challenges that may encounter particularly in sustaining the technology-based interventions such as long-term implementation, readiness of the teacher and institutional support



(Jahnke et al., 2017; Aesaert et al., 2015; Håkansson Lindqvist, 2015). In support of this, Glover et al. (2016) observed that digital tools may sometimes enhance the standard practices rather than promoting innovation.

Issued in 2023, DepEd Order No. 016 updates in replacing older methods with clearer directions on how technology is used across public schools. Instead of scattered efforts, it sets a focused path for weaving digital tools into daily learning. While aimed at classrooms, its real effect shows up in teacher training and student access alike. Because outdated systems slow progress, this revision pushes for reliable devices where they matter most. Although goals include better connectivity, the emphasis lands firmly on practical use - not just ownership - of tech gear. As part of broader reform, each school receives equipment tied directly to national priorities under the MATATAG plan. When working well, these resources help lessons keep pace with modern needs. Since change takes time, early steps center on steady upgrades rather than sudden shifts.

In terms of global research were focused on digital change, its results might not be the same in what happens in Philippine public classrooms because the conditions are different, it is important to look closely at how schools use digital tools in their own education settings. The success of implementation of digital system depends on weak networks, uneven device availability, tight funding, or differing skill levels among school personnel.

With the help of school heads, digital programs and platforms have an important role in improving school governance and operations, because in schools these tools will make teaching clearer, support inclusion, improve teaching quality, and encourage teamwork among teachers. School heads play a key role by connecting school goals with teamwork and strong leadership helps make digital efforts successful (Rhendivan, 2023).

According to Nym (2022), using digital tools and digital streamlining can help the teachers to grow, especially when they are supported in their lessons. Diana (2021) the teaching quality and students performance may improve in terms of monitoring, managing resources well, and giving motivation.

Though digital tools, it shapes today's classrooms more than before because school leaders may struggle with weak support structures. Efforts like Digital Education 2028 aim at streamlining how institutions function through tech integration. Behind these goals, however, old equipment drags progress down while staff juggle tasks without proper training. Even when new platforms appear - such as Learning Management Systems - paper-heavy routines linger too long. Without stronger foundations, advancement remains uneven across schools.

To address these concerns, the DepEd Computerization Program also seeks to reduce the digital divide by expanding access to ICT resources, particularly in underserved areas (DepEd, 2023). Despite these efforts, related issues to inadequate technical support, maintenance concerns, limited training opportunities, and unequal resource distribution continue to hinder effective implementation.

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Despite work already done on digital leadership, technology use, and institutional shifts in education settings, few efforts explore how school heads drive digitization and efficiency measures in public schools across the Philippines. In addition, most available writings center on classroom tools instead of management systems behind the scenes. What stands out is a missing look at hurdles, supports, and leading behaviors shaping tech-driven reform in school administration.

This study focuses on digitization and streamlining initiatives in school governance and operations with particular attention to the role of school heads. It seeks to identify key challenges and influencing factors, as well as propose strategies that may strengthen implementation efforts. Finally, the findings may provide insights that support the advancement of digital leadership and governance within the Philippine education sector.

### Statement of the Problem

1. What are the digitization and streamlining initiatives implemented in secondary standard line of Senior High School in CALABARZON? To what extent do they implement these challenges of digitization and streamlining as school governance and operations?
2. What are the challenges of the school heads in the implementation of digitization and streamlining initiatives?
3. Is there a significant difference between the extent of implementation of digitization and streamlining initiatives for school governance and operations in the provinces of CALABARZON?
4. Is there a dynamic challenge between the extent of implementation of digitization and streamlining initiatives in basic education institutions in the provinces of CALABARZON?
5. What process model may be developed based on the findings of the study to enhance school governance and operations in basic education institutions?

### Research Design

The researcher used a descriptive research design for this study as it systematically describes the extent of digitization and streamlining initiatives among the school heads and the challenges encountered in school governance and operations in basic education institutions in CALABARZON Region.

Babbie (2016) descriptive research focuses on providing an accurate account of "what is happening" in a social phenomenon and a given population by collecting factual and detailed information. It is also similar from Creswell (2014) and McMillan and Schumacher (2014) who emphasize that this design is widely used in educational research that aims to examine current conditions,



practices, and perceptions without manipulating variables.

In relation to this study, the descriptive quantitative approach is also considered suitable in this study because it allows the researcher to measure and describe the extent of implementation of digitization and streamlining initiatives, and challenges among public senior high school heads in DepEd Region IV-A CALABARZON. It helps the researcher to identify the challenges faced by the school heads in school governance and operations.

As stated by Kumar (2019), descriptive quantitative research is effective in generating factual and measurable information that can be summarized using statistical tools. The researcher used the frequency counts, percentages, and means, which are useful in determining the extent of key variables like digitization and streamlining initiatives, and challenges in educational settings in governance and operations.

## RESULTS AND DISCUSSION

### Dynamic Challenges in the Extent of Implementation of Digitization and Streamlining Initiatives in Basic Education Institutions in the Provinces of CALABARZON

| Province                                       | Mean Rank | Computed value | df | p-value | Interpretation  |
|------------------------------------------------|-----------|----------------|----|---------|-----------------|
| Dynamic Challenges in Digitization Initiatives |           |                |    |         |                 |
| Cavite                                         | 21.88     | 3.912          | 4  | 0.418   | Not Significant |
| Laguna                                         | 18.64     |                |    |         |                 |
| Batangas                                       | 15.79     |                |    |         |                 |
| Rizal                                          | 20.5      |                |    |         |                 |
| Quezon                                         | 35        |                |    |         |                 |
| Dynamic Challenges in Streamlining Initiatives |           |                |    |         |                 |
| Cavite                                         | 24.88     | 4.786          | 4  | 0.31    | Not Significant |
| Laguna                                         | 18        |                |    |         |                 |
| Batangas                                       | 16.36     |                |    |         |                 |
| Rizal                                          | 16.67     |                |    |         |                 |
| Quezon                                         | 35.5      |                |    |         |                 |

It can be seen that while the process of digitizing the operations in the schools located in CALABARZON has been efficiently applied, it is still being linked with challenges in operation, which include the financial problems and technological barriers.

As far as the demographics of respondents and their respective locations are concerned, the findings indicate that no statistically significant differences exist. The implication here is that the implementation of digital and streamlined processes remains quite consistent. Also, it becomes evident that the school administrations respond more to systematic aspects rather than individuals or geographic considerations. As such, the process of digitization and streamlining has become extremely uniform in Cavite, Laguna, Batangas, Rizal, and Quezon.

The lack of significant differences among respondents and in different provinces indicates that the school principals operate in similar administrative environments, governed by common policies and resources. Hence, individual factors such as the style of management have minimal impact in the implementation of initiatives. Similar results obtained in all of CALABARZON may be attributed to the centralization of the Philippine education system. Policies and guidelines are common and implemented through government offices, specifically the Schools Division Offices.

As a result, all educational institutions will go through the same stages in terms of technology use, information management, and process improvement regardless of their location and leadership. While this helps achieve consistency, it also explains why many problems faced by institutions are quite universal, such as inadequate infrastructure and budget constraints.

In such circumstances, the process of digitizing helps increase efficiency in schooling through the use of digital technologies, electronic record keeping, and communication. However, this is not always achieved due to a number of problems such as uneven distribution of ICT resources and infrastructure and varying degrees of support. All these factors affect the implementation of digital technologies in schooling.

In the same vein, efforts for process optimization seek to standardize and automate the school's operations to increase efficiency; however, the effectiveness of such a strategy will be dependent on the integration of different processes and the availability of sufficient infrastructure. Therefore, change occurs gradually through the

gradual adoption of new methods.

Despite all the mentioned limitations, educational institutions can reap some advantages including improved efficiency, more rapid information processing, and better communication. Moreover, all these aspects are useful for making the right decisions based on current data. Nevertheless, these advantages also remain to be constrained by resource limitations and technological assistance.

From the outcomes of the study, the researcher was able to develop a process model which is an illustration of the connection between digitization and streamlining efforts, and the difficulties faced by the heads of schools when managing and operating the basic educational institutions in CALABARZON.

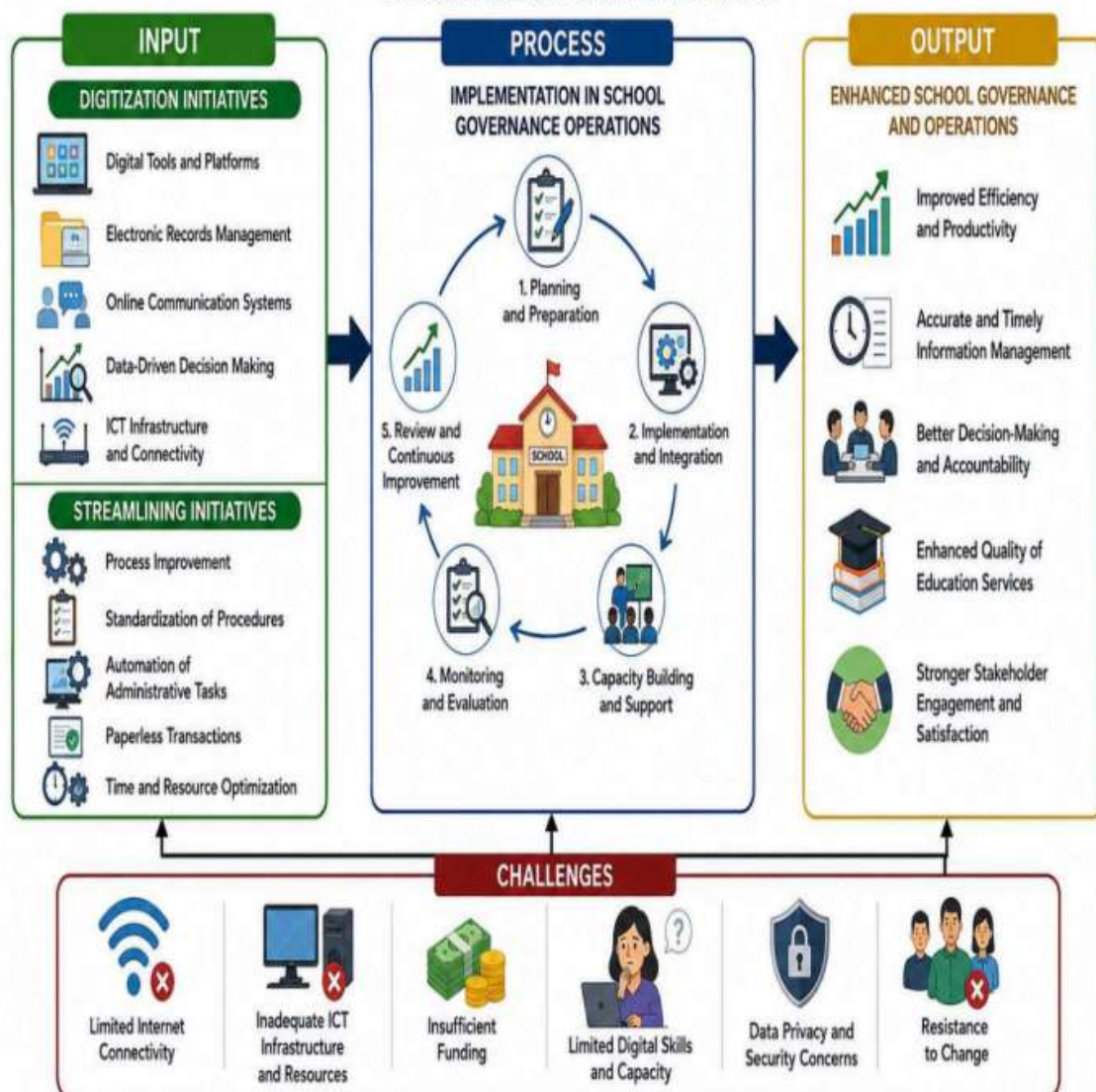
In addition, the model presents the interplay between the systems and the current limitations in facilitating the process of digitization and streamlining programs. This interconnection between the programs, and the difficulties that school heads experience in governing their operations within basic educational institutions in the CALABARZON Region, are revealed by the model.

It conceptualizes the integration process as being stage-oriented and conditional. The progress of the model depends on conditions like the state of the infrastructure, the capability of leadership, and the degree of support from the organization. In this context, the key role of school administrators is to ensure that digital practices coincide with existing conditions especially those set out by DepEd guidelines.

Also, the model shows that the process happens in stages and depends on certain conditions like infrastructure, leadership, and support. School heads play an important role in making sure that digital initiatives may fit the actual situation in schools while following the standards of the Department of Education (DepEd).

The developed process model based on the findings of the study in digitization and streamlining initiatives, and c among school heads in governance and operations in basic education institutions in CALABARZON Region

### PROCESS MODEL OF DIGITIZATION AND STREAMLINING INITIATIVES, AND CHALLENGES FOR SCHOOL GOVERNANCE OPERATIONS IN BASIC EDUCATION INSTITUTIONS





### Summary of Findings

This study examined the implementation of digitization and streamlining initiatives in school governance and operations. The dynamic challenges encountered among school heads, and the profile variables in different provinces in CALABARZON.

The results of the study indicate that both digitization and streamlining initiatives are generally well implemented in CALABARZON, the schools have already adopted the digital systems that support the administrative processes, communication, record management, and instruction. The researcher conclude that the compliance with ICT policies emerged as a strong area and it may reflect the influence of institutional directives but the digital academic resources such as e-libraries and research repositories remain less developed in some schools.

The study found ou that the administrative streamlining initiatives of school heads are also showed a high level of implementation in their school. In CALABARZON, the schools has increasingly adopted the automated workflows and online enrollment systems

to improve their operational efficiency and reduce manual processes. But, the moderate management platforms in their schoool are suggests that full system has yet to be achieved in many schools in CALABARZON.

Despite of these positive developments, school heads reported in terms of experienced in implementing the initiatives result as moderate challenges in sustaining digital transformation efforts in school operations. The challenges are limited funding, software costs, inadequate technical personnel, outdated equipment, unstable internet connectivity, and weak system integration.

The study consistently revealed that there is no significant differences in the implementation of digitization and streamlining initiatives of the school heads or in the challenges their encountered when respondents were grouped according to profile and province. The researcher concludes that schools in CALABARZON are operate under similar policy environments, implementation conditions, and institutional constraints.

In terms of streamlining initiatives with the indicators of automated workflows and online enrollment, have already improved the efficiency and reduced manual work. Despite this, only moderately implemented are the digital payment systems and integrated platforms.

School heads found that they have moderate challenges in terms of the limited funding, insufficient ICT personnel, outdated equipment, unstable internet, and system integration issues. Also, the result of study indicate that there is no significant differences were found in respondent profiles or provinces so the resreacher suggesting that challenges in implemeting the digitization and streamlining are systemic in CALABARZON Region.

The summary of findings in digitization and streamlining are already established practices in public stand-alone senior high school led bye their school heads. Their long-term sustainability in schll governance and opertaions depends on addressing infrastructure, funding, technical support, and integration issues in basic education.

### Conclusions

The digital education system in basic education have become integral part of school governance and operations. The widespread use of digital tools reflects the initiative in digitization and streamlining as a growing role of technology in administrative and instructional functions into everyday school practices and reflects the influence of DepEd policies and standard to promote digital transformation.

Based on the findings of the study the digital transformation remains ongoing but moderate implementation in some areas in CALABARZON such as system integration and digital academic resources indicates that schools in different divisions are still operate in traditional and digital processes as hybrid environment.

The sustainability of resource availability and technical capacity can influence the challenges in digitization and streamlining initiatives to continue affect the implementation of the school heads in terms of financial constraints, infrastructure limitations, and lack of technical support.

The differences of across profiles of the respondents and provinces in CALABARZON confirms that these issues are systemic because it shaped by common institutional conditions. The researcher conclude that these challenges depends not only on policy and standard but also on the capacity of schools in terms of technology. It also demonstrate the effectiveness of digital transformation in their institutions.

In conclusion of the study found that the progress has been achieved in CALABARZON but the researcher conclude that the DepEd needs to continue the

implementation of these initiatives and increase the improvement in ICT infrastructure, technical support, digital competencies, and system integration.

### Recommendations

From the findings and conclusions of the study, the following recommendations are suggested:

1. The Department of Education (DepEd) should strengthen the support for school digitization initiatives through sustained the ICT infrastructure. Also the internet connectivity, hardware upgrades, software licensing, and integrated digital systems and improve coordination across administrative functions. The DepEd should also promote the Digital Training for school heads, administrative personnel and teachers.



2. Schools Division Offices (SDOs) should enhance technical assistance support in terms of digital programs through regular monitoring, ICT services, and capacity-building programs for school personnel. The SDO should support and help to address these challenges related in implementation of digitization and streamlining initiatives.
3. School heads should promote data-driven decision-making and expand the use of digital tools for planning, monitoring, reporting, and instruction. They should also have initiative in using of e-libraries for students and research platforms in their schools.
4. Teachers and school personnel should continuous in actively participating and engaging of their professional development to improve digital literacy skills and ICT integration skills. They should also attend the training in terms of utilizing digital tools for both instructional and administrative purposes.
5. Future researcher should conduct similar studies in terms of digitization and streamlining in other regions and use the qualitative or mixed-method approaches to gain deeper insights, investigation and explore the effectiveness of digital platforms, school practices into digital transformation in education.

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