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Technology Integration: Key to Strategic Success Among Public High School Administrators in Legazpi City Division

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Index Terms:

technology integration, strategic success, administrative efficiency, Legazpi City Division, project stride, data resilience.

Abstract. In the digital era, technology integration has become the primary means of achieving efficient administration. This paper aims to investigate how digital technologies are a vital key to successful strategies of school administrators in the Legazpi City Division. Objectives: The research seeks to assess the availability of technology, identify obstacles in managing records, property, and finances, evaluate differences in respondents' perceptual viewpoints, and formulate a sustainable strategy. The research covers Public High School Administrators and ICT Coordinators in the Legazpi City Division during the 2025-2026 school year. A descriptive-evaluative approach was used in conducting this study using Weighted Mean and Kendall's Coefficient of Concordance. It is found that there is extremely high technology saturation; however, a "Digital Skill Divide" exists among them as well. Whereas school administrators struggle with data entry and the mandatory use of information systems, ICT coordinators focus on data security. Nonetheless, the statistical assessment demonstrates the existence of a "Unified Problem Consciousness." To achieve strategic data resilience, one should abandon the current paradigm and move to more advanced solutions. With a proposed Project STRIDE, manual data entry will be replaced, benefiting institutions.

Introduction

A significant shift has occurred how schools are managed, facilitated by the rapid changes Information and Communication Technology. In this shifting educational paradigm, Technology has moved beyond its role as a novel introduction to become a critical requirement for institutional sustainability.

Efficiency of schools in the new shift in the paradigms of education, aside from the methods that was used, it has been impacted by the ability it shows integrating into the existing administrative framework.

At an international level, the management of schools stands at a tipping point because it responds rapidly to the demand for digital transformation. Extensive implementation of Artificial Intelligence, specifically in personalized education and administration analysis, has been observed, where institutions can accurately forecast how many students will enroll and optimize complex processes (Hurix Digital, 2025). However, at an international level, the systemic digital divide persists, particularly in developing nations. The participation gap has arisen based n systemic infrastructure that features access to power, fast connectivity, which simply does not exist and makes it impossible for cloud Technology implementation (DigitalDefynd, 2025).

According to the Southern Asian (ASEAN) region, despite a general awareness and initiatives to integrate Information and Communication Technologies (ICTs) in education, significant disparities exist among member countries (The HEAD Foundation, 2016). Key issues identified inconsistent policy implementation, inequitable access to appropriate ICT tools, inadequate training for teachers and school heads and weak monitoring and evaluation mechanisms for ICT in education program (UNESCO, 2023). The COVID-19 pandemic further worsens the digital divide, highlighting that a substantial percentage of school-age children in East Asia and the Pacific lack internet access at home, creating significant educational Disadvantages or causing substantial learning difficulties (ASEAN.org, 2022).

A presence of imbalance in ASEAN relation to the availability of information and communication Technology infrastructure and digital literacy, and initiatives that aim for a region-wide application of Technology in the administration of schools would sometimes run into varying levels of readiness and capacity.

The Philippines has adopted the idea of digitalization in the field of education through different initiatives, including Digital Rise initiative of DepEd, which was introduced in 2017, with the purpose of providing an ICT infrastructure and means of digitalization in education practices and automation procedures (DepEd Biñan City, 2024) based in DepEd Order No. 78, s., 2010 (The DepEd Computerization Program) reinforced by the Public Schools of the Future(PSOF) framework. In addition, the government has been working on developing digital competencies of the learners and equipping them with ICT facilities and even satellite connection within the Pay It Forward project (PNA, 2025). Nonetheless, a recent study highlighted the issues related to ICT adoption, namely, lack of sufficient internet and insufficient number of devices.

Socioeconomic inequities have also been pinpointed as factors which widen the gap in terms of Technology adoption and integration, especially among economically disadvantaged areas (ResearchGate, 2025a). The readiness of ICT Coordinators also varies greatly from region to region, most of whom lack the adequate digital literacy needed for the task (ResearchGate, 2025a;

Republic Act No. 1880, being the legal basis that is commonly used in the designation order on working hours and unloading of normal job functions such as teaching, in order to accommodate the ICT-related tasks.
A further basis is found in the DepEd Order No. 1, s.2007 which is entitled as the Strengthened ICT governance and it established the functions of Regional and Division ICT Coordinators.

Another one would be Republic Act No. 10173, where a specific study was conducted on Records and Information Management (RIM).

The Ease of Doing Business and Efficient Government Service Delivery Act of 2018 or otherwise known as Republic Act No. 11032, a legislation that mandates zero contact implementation of policies and automation of transactions by the government. This provides a legal framework that ensures the transition of the process from being manual to being automated.

The varying digital literacy skills of the teachers and administrators from the Philippines, especially the ones who have rendered years of service in the organization, pose direct threats in the successful adoption and application of recent administrative technologies (DepEd Biñan City, 2024).

The current state of Technology has become an absolute necessity, and is already considered as an important strategy for Public High School Administrators in the Legazpi City Division to cope with the increasing challenges posed of academic and administrative requirements. For public school administrators to succeed in their endeavors, they need to be efficient in using ICT, provide accurate information and maintain financial transparency.

It can hardly be argued that nowadays the process of management at schools stands on the verge of its transformation, primarily due to the requirement of its digitalization, which is now one of the most relevant topics worldwide, considering both efficiency and innovation issues, while at the same time, there is still an array of problems in question. Issues such as lack of infrastructure, low level of computer literacy among human resources of schools, and even lack of funds remain topical for the region being discussed, thus hindering the implementation of innovative solutions.

In the current educational context, rapid technological developments have turned school administration from a mere administrative activity into a key motivational factor for success. The demand for the implementation of simplified processes in record management, budget responsibility, and overall school maintenance in the Legazpi City Division has underlined the level of technological readiness of its school administrators. In a modern educational establishment, the way consists of the synchronization of the efforts of School Heads and ICT Coordinators in using the technological instruments at their disposal.

Thus, the purpose of this research, entitled Technology Integration: Key to Strategic Success among Public High School Administrators in Legazpi City Division, is aimed at obtaining more information about the current state of Technology integration at the studied public high schools in Legazpi City Division to identify the main problems that prevent reaching optimal results.

This means that conceptualizing this research as a descriptive-correlational study is going to enable us to know the current status of the use of Technology in the schools being studies. This study will be used as the foundation in designing strategies to solve the problem, especially since there is a huge gap between the technologies available and issues on record

management, inventory of properties and financial accounting in these institutions. This is because in order to design them, all these correlations must first be established.

One thing that needs to be taken into consideration, however, is the fact that while the government has made efforts towards digital transform deficiency exists at the school administration level of the division concerned. This is because while the physical means necessary for digitalization have been made available, there is lack of proper organization within the administrative function of schools.

Objectives of the Study

The study, Technology Integration: Key to strategic success among Public High School Administrators in Legazpi City Division, presents a diagnostic analysis of the technological environment in public high schools in a manner that cloud serve as a basis for digital roadmap within that particular location. Specifically, this study aims to achieve the following objectives:

1. Determine the available Technology used by Public High School Administrators and ICT Coordinators.
2. Identify the problems met by the respondents in the use of Technology along:
    a. Records and Information Management
    b. Property and Facilities Management
    c. Financial and Supply Management
3. Appraise if there is a significant difference among the two groups of respondents along the above variables.
4. Propose an Action Plan to provide sustainable solutions to the identified problems, ensuring enhanced administrative efficiency and institutional success.

Hypothesis

Based on the findings shown in Table 1, indicating the high level of similarity in the availability of technology tools between School Heads and ICT Coordinators in the Legazpi City Division, the following hypotheses are formulated for your research study.

As the frequency (f) for core hardware tools, connectivity, and communication tools is quite similar (mostly 10/10), it is expected that the hypotheses will be formulated around the differences in the perception and operation in using these tools, with emphasis made on the few specialized gaps revealed (such as LAN and local servers).

Null Hypotheses: (H_0)

- H_{01}: There is no significant difference in availability of core hardware tools and connectivity between Public High School Heads and ICT Coordinators in the Legazpi City Division_
- H_{02}**:** There is no significant difference in the identified problems encountered by School Heads and ICT Coordinators regarding the use of technology in Records, Property, and Financial Management.

Alternative/Research Hypotheses (H_0)

- H_{01}**:** Despite the similarity in availability of hardware, there is a significant difference in utilization frequency and level of technical competence between the two groups of respondents, especially when dealing with specialized software and particular network configurations such as LAN and HR software.

- H_{02} **:** Due to high percentage (100%) of use of smartphones and Wi-Fi connectivity but low percentage (0%) of use of LAN and computers at the same time, the lack of antivirus software among School Heads significantly impacts the security of the data and information managed by them.

- H_{03}**:** Not having library and payroll software causes an increased administrative task in FSM area for School Heads.

- H_{04}**:** The "Skip-Generation" transition to cloud-integrated tools after basic hardware availability causes a Significant Perceptual Gap in terms of system reliability.

Literature Review

These presents a synthesis of literature and studies form global, national, and local perspectives, organized thematically to provide a comprehensive foundation for the study. It examines technological inertia in the administration, probing into whether technological adopters are exhausted by change or if digital literacy inequity exists within the division.

Continuing from the model of the Sociotechnical Systems (STS) theory, the purpose of this review is that in addition to the technical components in terms of the technology used in managing the school, this review will also address another dimension of how well the school succeeds socially. With respect to the classification of the literature within a specific field, like RIM, PFM, and FSM, the review is able to emphasize the crucial operational challenges, which lie in the interaction between technology and human resistance.

The rapid evolution of Information and Communication Technology (ICT) has fundamentally, shifted the paradigm of school governance, transforming digital tools from optional enhancements into a strategic imperative for institutional survival. In the contemporary educational landscape, the efficacy of a school is no longer measured solely by pedagogical outcomes but also by the agility and precision of its administrative backbone. For Public High School Administrators in the Legazpi City Division, Technology integration serves as the primary mechanism for navigating the increasing complexities of 21st-century school management.

Available Technology used by Public High School Administrators and ICT Coordinators

Currently, the paradigm change in the modern educational sector revolves around ICT, which has transformed from merely enhancing learning to becoming a requirement for organizational survival (DigitalDefynd, 2025). Around the world, there has been a growing trend towards automated governance, with the application of predictive analytics to provide personalized support that addresses institution-specific needs (Selwyn, 2022; UNESCO, 2023). At the same time, an electronic divide persists among developing countries, where the lack of adequate infrastructure and unreliable electricity supply pose a strategic threat to the implementation of cloud technologies (Netragaonkar, 2015; Vore, 2020). For instance, in the Philippines, government projects aimed at eliminating the divide include the DepEd Digital Rise Program and the Pay IT Forward satellite project, yet there is still an evident gap between the technological resources of wealthy cities and impoverished provincial regions (Bituin et al., 2024; PNA, 2025).

In terms of recent research findings, the trap of accumulating hardware without proper planning is insufficient for the successful integration of technologies (Kalyani, 2024; Elpos, 2020). On the contrary, the statistical probability of success is associated with adopting a transformative digital leadership approach and making headmasters change their role from mere managers to leaders of innovation (Bass & Riggio, 2022; Ugur & Tugba, 2019; Kozloski, 2023). Such a change involves establishing a culture of digital leadership and demonstrating that commitment through personal use of digital tools to minimize administrative friction and introduce a top-down approach to integration (Hamzah et al., 2021; Karakose et al., 2022). In addition, the value of digital tools should be estimated according to the possibility of ensuring fiscal transparency and establishing the institution's credibility among community members (McCarthy et al., 2023; RSIS International, 2024). As recent research findings indicate, one of the primary conditions for technological success in the provincial setting is the synchronization of the roles and responsibilities of School Heads as decision-makers and ICT Coordinators as implementers (Irosin District Study, 2022). Nevertheless, despite the presence of advanced networking infrastructure and hardware, various factors such as Manual Burden, differing levels of digital skills in veterans, and the absence of specific software prevent the full-scale automation of activities (Cisco Systems, 2020; DepEd Biñan City, 2024; Caluza, 2017). Thus, it is necessary for professional development programs to move from purely pedagogical approaches to addressing other issues associated with the logistics of ICT application (Espilin et al., 2018). Finally, for an institution to succeed in units such as Legazpi City, the combination of physical infrastructure, human capital, and the institution's strategic direction is needed (Abas, 2014; Cakir, 2025; UNESCO, 2022; MDPI, 2023).

Problems met by the Administrators and ICT Coordinators in the use of Technology

Records and Information Management

The adoption of digital RIM systems in the academic environment is often affected by a variety of systemic, technical, and psychological obstacles. Among systemic barriers, the manual burden resulting from schools' inability to transition from manual logs to digital systems is a main problem noted in the literature (Aduwa-Ogiegbaen & Iyamu, 2025; Chen, 2024; O'Donoghue, 2024). Manual redundancy usually stems from the perceptual gap between school leadership and technical professionals since school heads usually face considerable stress associated with data entry and have trouble mastering student information system applications due to the steep learning curve, whereas ICT coordinators are mostly preoccupied

with the technical aspect of data security and gatekeeping (Bagarukayo & Kalema, 2015; Demir, 2023; Eren & Kurt, 2019; Ramos & Antonio, 2024).

Cyber vulnerability and the management of unencrypted administrative databases are among the major technical issues that call for compliance with international standards and national recommendations concerning the protection of personal data (DICT, 2026; ISO, 2024; Khan & Gupta, 2024; NPC, 2025). Technical apprehensions are commonly expressed through psychological barriers regarding perceptions of cloud-based information security and the risks of data loss among school heads (Al-Furaih & Al-Awidi, 2020; Gurr, 2023). Moreover, system interoperability problems create information silos and result in a lack of connectivity between students' information and overall office and finance management applications (Heidari & Alipanah, 2025; Tiamayu, 2022).

The effective operation of an RIM system also becomes problematic in light of the datafication of education. Namely, mandatory reporting becomes an additional task that school leaders perceive as a data burden and resist becoming data managers rather than instructional leaders (Jimerson & Wayman, 2022; Selwyn, 2024). It can be argued that the successful adoption of an RIM system is facilitated by addressing the above-described socio-technical issues and building up digital resilience (Levin & Schrum, 2020; UNESCO, 2025; Zhao & Frank, 2023). In general, the problem of digital RIM should be overcome through a concerted effort to create a cohesive system of information management.

Property and Facilities Management

Modern facility management is currently seen as a significant contributor to institutional efficiency and performance. Contemporary literature reveals the impact of the condition of infrastructure facilities and learning places on academic performance (Akomolafe & Adesua, 2020; Earthman, 2023; Uline & Tschannen-Moran, 2022). However, a considerable number of public institutions operate within a reactive framework and have to deal with an increasingly critical state of school structures. Budget cuts and worn-out buildings force administrators to prioritize reactive maintenance rather than developing long-term strategies to prevent structural failure (FacilityONE, 2026; Filardo, 2021; Ghani, 2024). Consequently, administrators are likely to experience the disconnect between maintenance and inventory: while one department keeps track of equipment availability, another suffers from constant malfunctions. In particular, the situation in Philippine schools is becoming even more challenging due to rapid technological development driven by the DepEd Computerization Program. The increased inflow of computers may exceed available storage capacity, causing numerous difficulties with safe storage and protection against natural disasters (Netragaonkar, 2025; PIDS, 2024; APEC, 2024).

In addition, expensive ICT hardware needs to be protected from dust and overheating. The literature suggests a shift from the current reactive maintenance practice to Predictive Maintenance based on the Internet of Things (IoT) and digital twins. With these technologies, the administrator will be able to predict potential equipment failures. As a result, the administrator will avoid numerous headaches related to the equipment breakdown. To become an efficient school head, the manager should be ready to shift from the accumulation of computer parts to asset management. In other words, the head of the institution must understand how to professionally manage equipment throughout its life cycle, from procurement to decommissioning (DepEd, 2025; Jose et al., 2021; Kandayam, 2024; Perdana et al., 2023). In this case, the manager is likely to avoid purchasing depreciating equipment, thereby contributing to the effective use of available space. A true, effective learning place requires careful elaboration of a holistic strategy that combines efficient financial management with the management of infrastructure and furniture assets (Lackney & Picus, 2023; Santika et al., 2021). Otherwise, a large number of high-tech devices will be stored in invisible infrastructure where a wired power supply is missing. From this perspective, a school requires a more holistic approach, as the modern institution must become a smart learning place (UNESCO, 2024).

Financial and Supply Management

As FSM evolves, there is a growing consensus that digital governance cannot be viewed simply as bookkeeping but must incorporate more elaborate strategies of digitalization and accountability. According to the current literature, effective use of ICT can help reduce clerical workload, freeing up time for instructional tasks (MDPI, 2023; Twizeyimana & Andersson, 2019). Globally, a trend towards automation in school budgeting has been observed, as the use of digital platforms increases transparency and reduces the information vacuum in communities (Ahmad et al., 2024; RSIS International, 2024). Nevertheless, the implementation of FSM can also be hindered by the Top-Down Satisfaction Gap, in which heads of schools may be satisfied with completed reports, whereas ICT managers experience problems with the friction of online procurement and supply ordering (Pornel, 2025; Owusu, 2020).

Research shows that the successful implementation of FSM presupposes the synchronization between the administrative and technical sides of governance. Namely, school leaders need to have fully functional accounting software (Irfan, 2024; Siddique, 2022). Moreover, interactive budget discussion platforms can enable community participation in plan development, which is necessary to ensure they reflect the interests of parents and students (Haleem et al., 2022; Yeo &

Salwana, 2021). Finally, scholars underline the importance of evidence-based accounting in the context of school liquidation (Cabas, 2021; McCarthy et al., 2023). Blockchain technology can be applied to prevent procurement leaks and strengthen audit trails (Chen & Zhang, 2025; Baporikar, 2023).

At present, school divisions in remote areas still face procurement challenges, as well as difficulties with the delayed processing of financial documents (ADB, 2025; Macedo, 2024). The process of digitalization demands considerable board-level commitment, along with the elaboration of a strategy to avoid wasting money on depreciating assets (OECD, 2024; Knight, 2023). In future, the introduction of mobile applications and high-density networks will facilitate the work of school logistics departments (Karakose et al., 2022; DBM, 2026). Overall, it is expected that integrating technological tools will facilitate the linkage between property inventories, students' academic data, and financial information. School heads will have the necessary data to implement personalized interventions in each case (Selwyn, 2022; Gamage, 2022).

Significant differences in School Heads and ICT Coordinators along these variables RIM, PFM, and FSM

A major "Perceptual Gap" identified in the literature concerns the way the school hierarchy shapes the perceptual experience of technologies. According to recent studies, School Heads or Strategic Decision Makers evaluate technology through the lens of Administrative Utility and report high levels of satisfaction with digital tools only when they enable fulfilling national reporting requirements and achieving the goal of financial liquidation (Gurr, 2023; Jimerson & Wayman, 2022). On the other hand, ICT Coordinators perceive technology using a lens of Technical Maintenance and Integrity and feel more operational exhaustion than others since they bear "invisible" costs of troubleshooting, risks related to the privacy of the collected data, and problems associated with back-end work (Bagarukayo & Kalema, 2015; Ramos & Antonio, 2024). When it comes to Records and Information Management (RIM), there is a significant gap between what administrators expect and what coordinators can actually deliver. While the former focus only on getting the desired output of the Learner Information System to meet division deadlines, the latter have to spend much time on the technical side of things such as encryption, ensuring the stability of the server, or correcting mistakes made manually (Khan & Gupta, 2024; Chen, 2024; Aduwa-Ogiegbaen & Iyamu, 2025; Demir, 2023). Also, issues arising from information silos created by the lack of interoperability among technologies often go unnoticed by school heads, despite being critical to coordinators' work (Heidari & Alipanah, 2025; Tiamayu, 2022).

In regard to Property and Facilities Management (PFM), there is a gap between the focus on the physical accountability of facilities by school heads and the focus on their functional life cycle by ICT Coordinators. For example, one may report on successes if they see appropriate hardware in the inventory, while another person would see the situation as a failure since hardware decays over time and does not demonstrate energy resilience (Netragaonkar, 2025; PIDS, 2024; Bakhary et al., 2025). This problem is reinforced by the reactive nature of facility maintenance because of budget constraints, which are important only for administrators who care about quick repairs (Ghani, 2024; Facility ONE, 2026; Filardo, 2021).

As regards Financial and Supply Management (FSM), the mentioned gaps become evident in the form of the "Top-Down Satisfaction Gap." Thus, the ease of generating digital financial reports seems satisfactory to administrators; however, technical difficulties with e-procurement and supply ordering pose many challenges for ICT Coordinators (Pornel, 2025; Owusu, 2020). The importance of this distinction lies in the fact that the differences between the two perceptions make it necessary to adopt a strategy of Role Synchronization due to the inability of a "digitally optimistic" administration and "operationally exhausted" technical team to function properly (Irosin District Study, 2022; Yeo & Salwana, 2021).

However, the literature also points out a systemic electronic divide that lingers, in that emerging countries are still challenged with a participation gap resulting from a lack of underlying infrastructure, like access to power and connectivity. This creates a big barrier for the uptake of the same cloud technologies that will become a standard in well-developed countries. In this case, there would be a magnified global concern regarding the susceptibility of institutional data that demands effective cybersecurity measures for data privacy and corresponding compliance in this globalized world due to the transition of institutional information into digital media.

This literature review explores the multi-dimensional facets of digital transformation in education, focusing on hoe Technology acts as a catalyst for strategic success. To provide a comprehensive foundation for this study, the review is structured around three critical domains of school operations: records and Information Management (RIM), Property and Facilities Management (PFM), and Financial and Supply Management (FSM).

Globally, the literature highlights a significant shift toward automated governance and data-driven decision-making. However, as the focus narrows to the Philippine context and specifically to the Bicol Region, the narrative shifts toward the digital divide-a persistent gap characterized by infrastructure limitations, varying levels of digital literacy among school heads, and the friction between mandated national systems and local operational realities.

By combining global trends, regional ASEAN initiatives, and local research within the Department of Education (DepEd) framework, the current study seeks to determine the state-of-the-art on the field of administrative Technology. In the, Southeast Asian region there exists significant disparity when it comes to ICT readiness. While Singapore boasts its advanced ICT infrastructure, other countries such as the Philippines, have been lagging behind in terms of implementing policy property (The Head Foundation, 2016). In terms of Practice-Policy gap, according to UNSECO (2023), despite having policies related to ICT, many ASEAN countries are yet to develop proper monitoring and evaluation mechanism, resulting in their ICT offices being underused. Practices during the COVID-19 pandemic, the world saw how technology could revolutionize education. However, it became apparent that there were significant disparities in East Asia and Pacific region (ASEAN.org,2022).

Upon review in ASEAN research there was a Professional Development Misalignment that the professional development for school heads is often generic rather than context – specific, failing to address the actual administrative tools used in daily school operations.

Digital transformation of school governance in the Philippines is characterized by a complex interplay between systemic innovation and deep-seated socio-economic disparities. While national initiatives such as the Pay IT Forward program seek to bridge the digital divide through satellite connectivity (PNA, 2025), a significant imbalance persists between high-income municipalities and resource-constrained rural settings. This uneven landscape often results in the formation of information silos, where fragmented Records and Information Management (RIM) systems disconnect student data from broader administrative workflows, leading to critical delays in reporting and decision-making.

Moving towards a unified Learner Information System (LIS) is a national priority, the integrity of this data is frequently compromised by technical proficiency gaps among school heads. Beyond records, Technology is cited as a vital instrument for achieving financial transparency and real-time inventory tracking for Property and facilities Management (PFM); however, persistent budgetary constraints often force administrators to deprioritize hardware upgrades in favor of immediate operational survival (Cognizance Journal, 2024).

Kalyani (2024) explained that for Technology to lead to success, administrators must move beyond buying tools to strategic investment, ensuring infrastructure aligns with long – term institutional goals. He also argues that many educational leaders fall into the trap of hardware accumulation. They believe that having a room with desktop computers or providing every teacher with a laptop continues Technology integration. However, upon his study it explains that Strategic Investment requires a three-tiered alignment. Physical Infrastructure, Human Capital, and Institutional Vision. A key takeaway from Kalyani is that Technology must be future-proof.

For school administrators, this means: Instead of buying a standalone software that only manages grades, a strategic administrator invests in an integrated system that link student records, property inventory and financial data. Also, the study suggests that without a long-term roadmap, Technology become a depreciating asset rather than a strategic key.

Hamzah, Nasir, and Wahab (2021) addressing Human Factor in Technology integration. He suggested that administrators achieve strategic success only when they personally use digital tools for daily tasks, setting a top-down culture of tech integration. It means that Technology integration is a cultural shift, not just a technical one. On his study, he argues that if a School Head mandates the sue of a Student Information System (SIS) but continues to rely on paper-based logs or manual approvals for their own tasks, the staff will perceive the Technology as a burden rather than a priority. Strategic success occurs when the administrator leads by example, using digital tools for their own scheduling, communication, and data analysis.

Kozloski (2006/Updated 2023), mentioned on his study that shifting role of the school head from traditional manager to Technology leader is essential for the 21st century school efficiency.

From the study of Transformational Digital Leadership of Bass & Riggio (2022), it connects transformational leadership theory to ICT integration points that showing leaders who inspire innovation through digital tools see higher staff retention and better audits.

In a study of data analysis within higher education, Selwyn (2022) provides a structural approach for school administrators to utilize predictive analytics in tailoring support for individual student needs.

Bituin et al. (2024) explore the regional realities of the Philippines, posting that school administrators leverage ICT as a critical mechanism to bridge the gap of rural isolation and foster inclusive education within provincial sectors.

As for DepEd Biñan City (2024), the "Literacy – Age Gap" it investigates resistance to Technology among veteran school administrators in the Philippine and how this affects the implementation of national mandates.

The Camarines Norte SDO Case study (2025) highlights a critical finding for regional leadership: school heads who focus on institutional capacity building are more likely to achieve strategic success in their digital governance interventions.

Elpos (2014/Updated 2020) highlights a paradox in Bicol schools where hardware such as scanners and projectors are physically present, yet remain functionally inaccessibly due to the weight of bureaucratic requirements-representing a strategic failure in resource allocation.

Journal of Cognizance (2024) Budgetary Constraints at the Level of Local School. In what way do high maintenance costs in Philippine public schools conceptualize Technology as a low priority area.

According to PNA (2025): The *Pay IT Forward Initiative* exemplifies how government-led satellite connectivity projects are being leverage to bridge the digital divide in marginalized schools, positioning technological access as a cornerstone of equitable governance.

As far as governance-related benefits of implementing ICT are concerned, one must consider that the latter is instrumental in facilitating digital governance, which is essential in terms of efficiency and fiscal accountability. A scoping review by MDPI (2023) confirms the potential benefits of utilizing digital solutions in order to reduce clerical loads by 40%, freeing valuable time for the administration to pursue their instructional duties. Additionally, based on the research by McCarthy et al. (2023), it would be imperative to employ the use of digital tools to provide evidence-based accounting in case of school liquidation processes in order to increase fiscal transparency and prevent audit-related issues.

Finally, the strategic implementation of ICT can be instrumental providing equitable and efficient education to all students regardless of their geographic location in the provincial setting of the Philippines. Based on recent studies by Bituin et al. (2024), as well as the Pay It Forward initiative 2025, one must realize that such technologies as data analysis and satellite internet connectivity have already started transforming provincial education. Following the framework suggested by Selwyn (2022), school heads can rely on data insights to develop personalized interventions aimed at assisting students in their learning.

The present analysis will outline the importance of ICT as a part of modern educational leadership. From the positive outcomes of the community engagement strategy to potential obstacles, this section provides insight into the complex process of utilizing ICT to ensure strategic success.

ICT offers a way to establish institutional transparency and trust with the community. According to RSIS International (2024), an important step toward building effective relations involves introducing the use of digital portals for information exchange. This move eliminates the so-called information vacuum in the lives of the community members who doubt the integrity of the school head. By making financial liquidations, project updates and information about overall school performance available via the portal, one establishes credibility and becomes a transparent leader. Digital governance allows for fostering social capital in the local community.

The use of digital tools in school management contributes to public value by providing security and accessibility. Twizeyimana & Anderson (2019) argue that digitization of student records is a great way to provide secure and fast access to information needed for validation. Within the framework of the Learner Information System (LIS), such a move allows one to prevent the loss of valuable data at any time while maintaining its accessibility. The mentioned change indicates an effective use of ICT and thus marks one as an effective administrator since it protects the privacy of students and facilitate the work with records.

While the implementation of innovative solutions usually faces obstacles in the form of low funding, sometimes there might be other structural impediments. Yeo & Salwana (2021) mention the problem of a lack of commitment on the part of the board members as one of the major barriers. In other words, while there are programs like Pay It Forward which provide one with infrastructure, the actual implementation of digital strategies might prove challenging due to lack of commitment among school governors. The lack of support of those holding positions of power might become another obstacle in utilizing ICT strategically.

The most significant issue associated with the implementation of ICT strategies remains psychological. In accordance with Rossafri & Balakrishnan 92017), school heads often do not feel comfortable enough leading digital transitions due to fear of incompetence in front of more tech-savvy employees. For example, the fear of looking outdated or not having a clear understanding of digital governance prevents one from being a good leader.

The successful adoption of information and Communication Technology (ICT) in the school setting would depend to a great extent on the evolution of administrative training and the acceptance of technology as a logistical tool. According to Espilin, Stewart, and Thurston (2018) there is apparent gap in the traditional principal preparation programs that tend to focus more on pedagogical aspects of leadership and overlooks the logistical aspect of technology use. Being a school head means that one needs to have an understanding of how to operate certain technological products and services rather than just knowing how a teacher will apply a tablet in the classroom. It would require the skills to manage technological resources, procurement, and maintenance cycles.

Another crucial aspect of technology adoption and integration should be the perception of technology as something that cannot be achieved once and for all. Young (2003/2004) points out that many administrators feel exhausted after purchasing some hardware and regard it as the end goal of the whole process. In fact, it should be seen as a continuous process that requires continuous budget allocation, software updating, and changing cybersecurity measures. Thus, strategic success in ICT implementation lies in a school head's ability to continue working on technology after the launch stage.

However, no matter how innovative systems a school head manages to adopt and how well-developed the hardware or the software used are, a negative organizational climate would render it ineffective. According to Cakir (2012/2025), the successful adoption and integration of technology would be impossible in the school settings that do not encourage change. Building the learning culture is what allows the school to develop psychologically, especially regarding ICT. When a school head provides for psychological comfort and encourages the experimentation with technology, a barrier of incompetence could be removed.

The literature shows that there is an emphasis on infrastructure, hardware, but there is less knowledge about operational frictions, or the specific problems in RIM, PFM, and FSM in rural units such as Legazpi City.

Ultimately, this body of literature provides the theoretical and empirical justification for an Intervention Plan designed to synchronize the efforts of School Heads and ICT Coordinators, ensuring that Technology integration leads to sustainable institutional success in Legazpi City.

Theoretical Framework

The study is primary anchored on the Sociotechnical Systems (STS) Theory because it views organizational work design as the combination of the social and technical systems that work together simultaneously. The researcher adopts a specific theoretical paradigm to provide a logical structure for investigating how Technology Integration acts as a catalyst for Strategic Success among public high school administrators.

Figure 1 provides the theoretical paradigm of the study in which the theory was used by the researcher as the basis for his own theory. The researcher admits that administrative efficiency is not a solitary concept but rather is intrinsically related with the Sociotechnical Systems (STS) of the school setting.

As per the STS Theory, it can be seen that the performance of an organization is optimized only if the organization is complemented by itself socially and technological. In regards to the case at hand, the technical Subsystem consists of the DepEd system, hardware, and the Internet system for performing RIM, PFM, and FSM operations. On the other hand, the Social Subsystem will consist of the public high school's administrators, their ICT coordinators, their online literacy, and their receptiveness towards technology adoption, besides their collaborative leadership skills.

With the foundation that the theories of Sociotechnical Systems (STS), Unified Theory of Acceptance and Use of Technology (UTAUT), and Activity Theory have already established, there will now be a proposal for a new theoretical framework, which will be called the Theory of Administrative Digital Synchronization (TADS). The primary aim of the new theory is to integrate all the key ideas of the said theories into a cohesive whole.

In today's educational environment requires overcoming technological determinism – the simple possession of state-of-the-art computers cannot ensure successful institutional operation anymore. According to this logic, strategic success of today's educational units can be viewed in terms of synchronization of the technical equipment used within schools and the digital abilities of their administrative staffs. Thus, it becomes clear that Technology is not something independent of organizations but rather a part of the organization's system. Consequently, the success of school governance should be understood in terms of the integration of technical assets into the daily professional activities of its administrative staff and its cognitive readiness for dealing with this integration.

From the point of view of the above-mentioned theoretical considerations, Sociotechnical Systems (STS) Theory seems to be an appropriate structural basis for this paper. The very theory implies that organizational performance can be achieved only through the optimization of both technical and social subsystems. Based on this understanding, the researchers' study does not limit itself to a descriptive listing of ICTs available at the target organizations but beyond it towards a deep analysis of systemic transformations that can facilitate the adoption of new technologies by schools and make their use more effective.

A Sociotechnical perspective on the problem provides a strong theoretical basis for the relationship between the study's independent and dependent variables as well as between this relationship and the reality of school governance. In this regard, it can be concluded that the phenomenon under consideration should not be analyzed from the point of view of its final outcome but rather as a process of systemic alignment. In other words, strategic success can be seen only in terms of synchronization of technology and the activities of administrative staff of a school.

The TADS also defines the notion of dynamic equilibrium between human intervention and digital devices. In the context of such a theory, strategic success is not seen as an end result that has been attained once the equipment has been bought. It entails achieving a continuous balance in operations. This balance is achieved through aligning the school administrator's vision for Records (RIM), Property (PFM), and Financial (FSM) Management with that of the ICT Coordinator's technical execution.

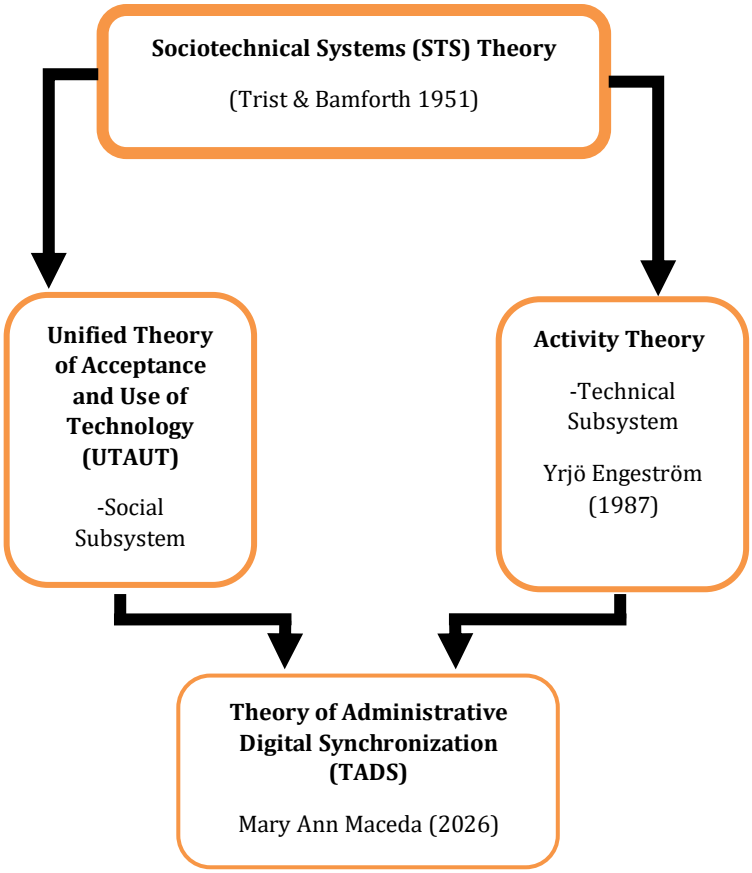

Figure 1. Theoretical Paradigm

Conceptual Framework

The present research is based upon the combination of the existing models of organizations and synthesis of the ideas of the researchers concerning the digital transformation within the Legazpi City Division of schools and in the educational system as a whole in relation to the fact that due to the fast-paced development of Technology the effective management of the school had been subordinated to the optimal placement of the administrative apparatus in terms of technological innovation, thus, making the main emphasis of the present research on the use of the Sociotechnical Systems (STS) Theory

in the concept of combining the Technical Subsystem, identified according to the demands of DepEd in terms of digital transformation, and the Social Subsystem of the School Head and ICT Coordinators regarding the aspect of cooperation.

The framework was formed with the use of the Theory of Administrative Digital Synchronization formulated by the present researchers and denoted by the acronym TADS. The theory, therefore, may be referred to as the bridge or connection between the application and use of digital sources and the result to be achieved or issue to be solved. In its essence, the theory states that the successful achievement of strategic goals and objectives depends upon the synchronization of the following three aspects: records and information management, property and facilities management, and financial and supply management.

The present study is descriptive correlational research that makes use of the survey method. The study was performed during the school year 2025-2026 involving the School Heads and ICT Coordinators of public secondary schools in Legazpi City Division. This research is entitled Technology Integration: Key to Strategic Success among Public High Schools Administrators in Legazpi City Division.

The study determines the type of Technology employed by the Public High School Administrators and the problems encountered by the respondents in their utilization of Technology in regards to: Records and Information Management (RIM), Property and Facilities Management (FM), and Financial and Supply Management (FSM). Additionally, the study evaluates whether there is a significant difference between the two sets of respondents. The data were subjected to relevant statistical analyses to find out the respondents' reactions to the survey questions. The study provides for a strategic intervention plan to address the recognized issues and pave the way for success. In this perspective, Input means the latest advances in Technology and human resources in Legazpi City. However, Process means the diagnosis to pinpoint exactly what the obstacles are, the silos and bottlenecks that you mentioned. Output is the actual implementation of your TADS approach: a shift from hardware acquisition to coordinated data administration.

The conceptual framework of this study rests upon the concepts, ideas, and principles expounded by the researcher. Figure 2 presents the conceptual framework of the study

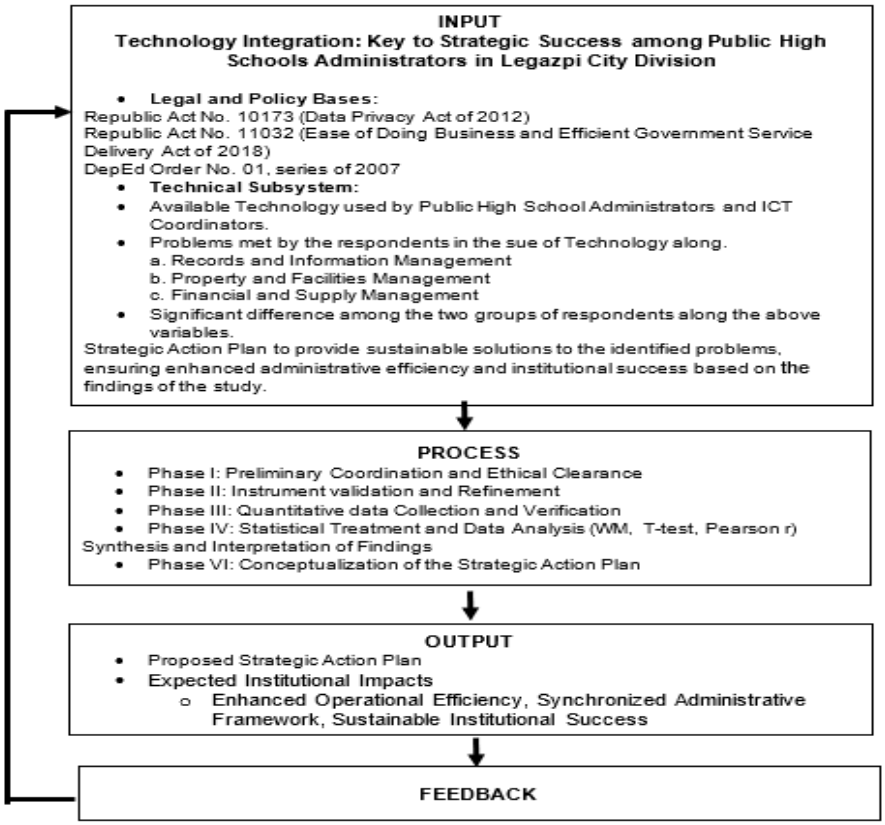

Figure 2. Conceptual Paradigm

Scope and Limitations of Study

This study mainly focuses on evaluating the role of Technology integration as a strategic catalyst for successful administrators of public high schools within the Legazpi City Division during the Second Semester of the School Year 2025 – 2026. This period is selected as it coincides with the mid-year and year-end administrative reporting cycles for Records, Property, and Financial Management, providing a high-activity window to observe Technology integration in real-time administrative practice.

The participants of the study include only the School Heads and ICT Coordinators, since these roles are primarily responsible for the decision-making process and implementation of the Technology in the administrative domain. Hence, School Heads act as strategic leaders who govern and control the three important domains (RIM, PFM, and FSM). While ICT Coordinators act as the technical experts who make sure that the Technology system works well. The inclusion of only these respondents enables the researcher to conduct an assessment on how strategic the implementation of the Technology is achieved without other confounding variables such as using the Technology in their classes.

The study adopts the theoretical framework of Sociotechnical Systems (STS) Theory, Unified Theory of Acceptance and Use of Technology, and the researcher formulated Theory of Administrative Digital Synchronization (TADS). Within the study, the research problem focuses on analyzing the three critical domains which are RIM, PFM, and FSM. Therefore, the objective of the study seeks to find out the availability of the Technology used in the three domains. Besides, the study aims to evaluate whether or not there is any significant difference between the two groups of respondents based on these variables.

Concerning the scope of the study, it is limited to ten (10) selected public high schools, ten school heads, and ten ICT coordinators in the Legazpi City Division. The selected schools belong to the large secondary school's category because the administrative domains handle huge volumes of information and facilities. Hence, these ten public high schools adequately represent the division. The descriptive correlational type of research design is used in this study using the survey technique to gather data. The data analysis is also limited to the parameters of weighted mean formula on determining the degree of the problem faced in the administration domains as well as the t-test formula in finding the degree of significance on the difference among the two groups of respondents based on data from the respondents. It should be noted that this research is limited to the parameters of the development of the strategic intervention plan.

In contrast, it will not consider private educational institutions because of the different administration procedures and funding sources. Furthermore, it excludes other school levels including the elementary and tertiary level because the administration procedure of the former differs from the high schools, while the latter operates according to the rules of the Commission on Higher Education (CHED). Moreover, the researcher excludes other schools beyond the Legazpi City Division to avoid any environmental variable differences.

Finally, this study will not analyze the Technology implementation process concerning the utilization of the faculty and students within the Technology governance process. However, the paradigm shift towards cloud analytics and artificial intelligence Technology is incorporated within the study based on the description of its readiness process of the Technology implementation within the Bicol Region in accordance with the Technology Governance Framework within the Philippines.

Significance of the Study

The study employs the Theory of Administrative Digital Synchronization, together with the theory on Sociotechnical Systems, to improve the administration of the schools in LGU Legazpi. The study will also assess the level of synching between the ICT infrastructure level and the level of digital literacy to realize effective and efficient administration for success.

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Specifically, the findings of this study will be beneficial to the following stakeholders:

School Administrators. The study will give School Heads a clear assessment of their current digital literacy level and the efficiency of their ICT infrastructure. The findings will serve as a guide in optimizing the process of administration in Records, Property, and Financial Management to ensure data-driven decisions.

ICT Coordinators. Being the implementers of the ICT system, ICT Coordinators will be able to know the gap between the availability of the hardware and its utilization as per the actual situation. With this, the technical training and infrastructure upgrades needed within their schools will become more justified.

Department of Education (DepEd) – Legazpi City Division. The research will provide the division office a situational analysis in Technology integration of the schools in the division. Thus, the Strategic Intervention Plan created by the researcher in this study may be adopted/adapted by DepEd-Legazpi City Division for other public high schools in the division.

Department of Education – Regional Office V. Given the incorporation of the readiness process of ICT implementation within the Bicol Region, the regional policymakers can use the findings to match their ICT framework with the real needs of the school administrators in the frontline.

Future Researchers. The study contributes to the emerging body of literature on the application of the STS theory in the Philippine education system. Specifically, this study becomes a foundation to conduct further research on the influence of AI on the local school administration. Additionally, this study serves as an essential foundation for future scholars conducting further studies on the digital divide within the Bicol Region.

Community and Stakeholders. Effective school administration results in the provision of good services by the school to their clients-the students and parents. With efficient financial and record management, the school ensures prompt delivery of services to the community.

Definition of Terms

To provide a clear, proper, and formal background for this study, the following terms are defined according to their operational and conceptual applications within the research. These definitions, therefore, as above considerations are relevant, the present study may be seen as filling the gaps among the various application within the research.

To ensure a comprehensive understanding of the specialized concepts and variables explored in this research, the following terms are defined both conceptually and operationally. While these terms generally have broad definitions within their respective academic disciplines, they are hereby redefined for the purposes of this particular research study. They are particularly relevant to the researcher formulated Theory of Administrative Digital Synchronization (TADS).

*Technology Integration***.** It refers to the incorporation of Technology resources and Technology-based practices in the routines of work within an organization in order to facilitate the achievement of organizational goals and improve productivity. It is the intersection of the social and technical components within the Sociotechnical framework. It is a combination of the utilization of hardware (such as laptops, servers, and biometric systems) and software (LIS, e-SIS, PMS) by the School Heads and ICT Coordinators in managing Records and Information, Property and Facilities Management, and Financial and Supply Management during SY 2025-2026.

Strategic Success. It refers to the attainment of the maximum performance of an organization in line with its long-term goals. It entails having an ability of an organization to adapt and perform productively even when there are changes in the organizational environment in the wake of Technology innovations. It specifically refers to the realization of the objectives of an organization with regard to high-level of institutional objectives such as data accuracy, transparency, and timely filing of the required reports in RIM, PFM, and FSM.

Records and Information Management (RIM). It refers to a professional management practice of supervising all records/information generated by an organization from its creation or receipt up to its disposition stage. The aim of RIM is to keep the information of an organization well-organized, controlled, secured and accessible in order to assist in making decisions. It is particularly the digital management/handling of information/records about learners/students and personnel in the public high schools of the Legazpi City Division. It entails the utilization of the Learner Information System (LIS) and the Enhanced Basic Education Information System (EBEIS) to generate accurate records of learner/student enrollment details, profiles and personnel details for SY 2025-2026.

Property and Facilities and Management (PFM). It refers to an integrative approach that involves the maintenance, improvement, and adaptation of buildings/facilities and other properties owned by an organization in relation to its primary goals. It involves the utilization of Technology such as digital inventory systems, the Property Management Information System (PMIS) to monitor and track the school equipment and infrastructure in order to ensure their proper management.

Financial and Supply Management (FSM). It refers to a management practice of planning, directing, controlling the financial resources and supply inventories of an organization in order to promote institutional stability and transparency. It involves the digital process of managing the school funds especially Maintenance and Other Operating Expenses (MOOE), and the tracking of school supplies using electronic spreadsheets, financial reports, and financial reporting software.

Sociotechnical System (STS). It is a framework of organization design which views organization performance as a result of the interactions between the social subsystem (made of people and their relationships and skills) and technical subsystem (tools, hardware, and software used in performing the work). According to this framework, the best performance of an organization is achieved when there is a balance between the two subsystems, rather than prioritizing the other. The Sociotechnical System is used as the main theoretical lens in studying the interactions between School Heads/ ICT Coordinators as the social component and the mandated Department of Education ICT tools as the technical component.

Strategic Action Plan. It is a management tool which helps an organization in transitioning from its present state into a state of excellence. It contains all the specifics concerning the process of the transition, and acts as the bridge between theoretical findings and practical application of those findings through setting of Key Performance Indicators (KPIs) for specific tasks. The Strategic Action Plan is a result of analyzing data obtained from the study conducted among the schools in the Legazpi City Division. This plan will be contained in the final report in reference to the findings of the study. This strategy report should provide useful functionality in a number of areas in order for it to be of help to someone.

Methodology

This section highlights the systematic process and methodology adopted to examine the effectiveness of applying Technology as the trigger to the attainment of success in administration in the Legazpi City Division. The methodology describes all the processes adopted during the conduct of this research starting from the choice of the research design that is descriptive correlational, the geographical and organizational environment in which this research will be conducted, up to the selection criteria of the main respondents. Furthermore, the methodology will cover the process of designing, developing and validating the instruments and statistical tools adopted in conducting this study.

Based on the TADS methodology, the procedure through which the level of congruence of both the technical infrastructure and the human capital of school leaders will be diagnosed is highlighted here. Following this methodology, it will be expected that both the frequency of Technology use and the degree of synching of both the digital tools and the administrative skills of school heads and ICT coordinators will be established. Hence, the study is not only aimed at revealing the available ICT resource but will further reveal the impact of STS on effective management in terms of Record management, property and financial matters. As a result, it will be possible to formulate a strategic action plan that will reflect the real administrative situations in the participating schools in the Legazpi City Division.

With a view to addressing the complexity of administrating technology in school institutions, the research design adopted in this study is a descriptive-correlation type of research. With such a research design, it will not only be possible to observe the presence of technology but to compare the perspectives of school heads and ICT coordinators to establish the administrative health of each organization. Such an approach is important for the current study since it will be instrumental in determining the presence of sufficient technological infrastructure and social readiness of individuals. Furthermore, this study will test the theory of TADS by observing the difference, if any, in perception between leadership and technical personnel on the degree of synching of technologies in their organizations.

Additionally, the design of methodology provides for proper validation of the research instruments. Survey questionnaires and guide questions used in interviews will be verified through expert review and piloting to ensure that the indicators of Record Management, Property and Financial Management correspond to the mandates of the Department of Education in the Legazpi City Division. Ethical considerations are ensured through each step by making the participation of ten (10) public high schools to be contingent upon the informed consent from the participants. The above efforts are meant to lay the foundations for subsequent analysis that will include computing weighted means, t-test and formulating the Strategic Action Plan.

Research Design

The method of research in this study entails descriptive and correlational research design with quantitative approach. This method assesses the status of existing Technology integrations and the difficulties experienced in integrating them among the respondents. It makes an evaluation on the important differences between the perception of School Heads and ICT Coordinators through statistics testing.

Through the employment of this design, the descriptive component will be put into use in getting the status of the current technology integrations existing in the ten selected public high schools as accurate as possible.

Hardware and the related software components being used by DepEd in relation to the software programs employed in the implementation of the LIS program, together with the other software utilized by the department. General estimation of the rough points connected to the RIM, Property (PFM), and Financial Management (FSM). Analysis of digital literacy skill level of the respondents.

Correlation in this aspect will emphasize the emphasis of the current or the proposed level of correlation which may exist between the independent variable (Technology integration) and dependent variable (Strategic Success), with an intention of establishing the extent of Administrative Digital Synchronization.

While in essence, the design is basically correlational, the differential component forms the other part. Significant difference between the views of School Heads and ICT Coordinators is valued in this design through the Job Role of each person which acts as a classification variable in this study. In other words, the design will help the researcher understand if the social subsystem is fractured-whether individuals holding visions, heads share similar perspectives on matters concerning technology with the individuals holding the tools, i.e., ICT Coordinators. The design is built around three variables; RIM, PFM, and FSM. Through this, the researcher will establish if there is any significance between the respondents.

Hence, the hypothesis means that it will be established if strategic success is achievable in relation to the use of Technology integration tools because of Administrative Digital Synchronization, which exists because of Collaboration Proficiency.

In conclusion, the choice of the design on description and correlation proves relevant in this study considering it incorporates the blueprint of action, which helps in making sense of the complex Legazpi City Division Administration. Description, among other aspects, ensures the strict adherence of gap analysis, not only identifying the hardware but also facilitating the real differences between the necessary DepEd systems and its capability in the identification of locations where technical and human difficulties will lead to the creation of information silos. At the same time, this design remains highly relevant in this study considering it will facilitate the proof of the crucial perception gap of School Heads and ICT Coordinators concerning the Lead-tech dyad. Proving its existence will pinpoint the arrow directly at its inefficiency in the concerned administration.

Thus, the two-fold approach significantly contributes in the effective gap filling with regard to the relationship between location and administrative efficiency, leading to the creation of the intervention plan for the locality. Finally, the two-fold approach significantly contributes in ensuring that the Digital roadmap becomes an imperative in Schools Division Office rather than an affirmative recommendation by data.

Research Instruments

This study uses three-part structured questionnaire as the primary research instruments to provide an in-depth diagnosis of the prevailing administrative environment in the selected school. Each section of the instrument is strategically crafted to measure specific variables within the sociotechnical framework, ensuring that the data gathered is both comprehensive and aligned with the study's objectives.

On the first part of the instrument is called Technology Checklist and was intended to technical audit, identify intensity and priority in relation to the availability of hardware and software as well as internet connection. By objectively quantifying the degree of technical support available for school management, this part measures the Technical Subsystem of the school, identifying the physical tools that facilitate administrative synchronization.

The second part evaluates the operational bottlenecks and friction encountered within the three critical domains: Records and Information Management (RIM), Property and Facilities Management (PFM), and Financial and Supply Management (FSM). This part represents the Social Subsystem, assessing how human personnel interact with their current systems, to ensure a nuanced measurement of these administrative challenges, a 4-Point Likert Scale is employed. The scoring and interpretation of this scale are presented in Table 1.

It would, however, lead to the use of the Scale of Problems, which would have been prepared taking into consideration the success that had been achieved as a result of using the 4-Scale Likert Scale. Again, the appropriate place to mention this would be here, that the above-mentioned scale was the reason for solving the so-called work problems, as well as the problems of friction, relating to RIM/PFM as well as FSM.

Scoring and Adjectival Interpretation of the Problem Scale

Scale	Quantification	Adjectival Interpretation
1	3.25 – 4.00	Strongly Agree (SA)
2	2.50 – 3.24	Agree (A)
3	1.75 – 2.49	Disagree (D)
4	1.00 – 1.74	Strongly Disagree (SD)

Finally, the last section of the instrument will be geared towards linking Part I and Part II in order to conduct gap analysis. In this regard, through this part of the tool, the application of the Sociotechnical System Theory can be possible through identifying the level of Technical Subsystem through the utilization of the checklist as well as the level of the Social Subsystem through assessment of the administrative bottlenecks. However, on the other hand, it can be argued that the tool can actually serve as means for testing the Theory of Administrative Digital Synchronization due to the fact that the addressed tool will identify whether or not Technology can indeed act as predictor Part I for operating problems Part II under the DepEd Digital Rise Program.

In order to preserve the academic integrity of results obtained, the measure passed through stringent content validation conducted by experts in Educational Management and ICT. The experts evaluated the items according to their relevance in terms of culture and technology and made sure that the language used was indeed relevant to the context of management at the schools in Legazpi City Division. After making some changes as recommended by the experts, the measure was considered suitable for use in the region.

Data Gathering Procedure

In order to gather data in a systematic and ethical manner as well as follow due processes on administrative side of the research, a particular sequence that would be consistent with the sociotechnical approach was followed. This is discussed below in more detail.

Data collection Procedure commenced with the process of Securing Permission wherein a letter, bearing signatures from both the researcher and his/her thesis supervisor, was sent to the Schools Division Superintendent of Legazpi City in order to obtain legal and ethical administrative permission for conducting this study among the public secondary schools under the division administration. Following that, the stage of Distribution of instruments was completed by employing a mixed or combined approach, such as distributing online analytical survey questionnaires online and giving out hard copies to some School Heads and ICT Coordinators, specifically constructed here in order to tackle digital divide and even radical internet connection problems common around the regions in Bicol, Philippines.

Finally, the stage of Retrieval and tabulation involved thorough examination of each set of responses provided by the Lead-Tech Dyads for completeness, after which compiling them into a master database. This was intended to provide sufficient reliability to test the Theory of Administrative Digital Synchronization (TADS).

Respondents of the Study

For this research study, the respondents may thus be viewed as the key administrative personnel working in the government secondary schools located in the Legazpi City Division. In defining the participants within the parameters of the Social Subsystem, it becomes clear that these respondents are not mere users of the technology but rather the gears of synchronization whose movement determines institutional momentum. The Social Subsystem comprises two distinct yet complementary cohorts; first, there are the School Heads whose visionary leadership drives the initiative, and secondly, the ICT Coordinators who have the requisite technical know-how to implement the vision of their superiors. It is the collaboration between these two cohorts which will decide whether the school will remain in a fragmented, manual system or move towards becoming an integrated digital unit.

In relation to the Sociotechnical Systems (STS) theory, it is clear that the respondents discussed above act as the primary link between the school's technical capabilities and governance objectives. Through examining these two unique groups, it is possible to determine the existence of a perception gap in regard to the implementation of such systems as the LIS or FSM. The importance of this classification lies in the fact that even if all schools within a division have similar technical resources available to them, it is clear that the Collaboration Proficiency of the two identified groups changes significantly. Therefore, the research takes into consideration the human aspect of this process and examines not only the amount of hardware that the school possesses but rather the ability of administration to synchronize its use effectively.

First group of respondents consists of ten (10) School Heads, who might be the Principals or Assistant Principals or Officer-In-Charge (OICs) of secondary schools. The second group of respondents consists of ten (10) ICT Coordinators. The individuals have been nominated by division as well as the head of the school for the role of overseeing the information Technology structure within the school.

By using purposive sampling technique, there will be no occurrence of the result of this study in both the Outcome/Research and Study, since there will be no presence of the result of this study in the network, as a function of the noise category based on the application of Random Sampling Technique as a function of their apprehensions in order not to create any connection between RIM, PFM, and FSM.

The reason behind selecting these particular respondents lie in their position as guardians of institutional information and property. Insofar as the School Heads are concerned with budget transparency and the institution's inventories, the ICT Coordinators serve as the link between the former's duties and the technology available through the Department of Education. By including these two groups, the research does not remain at the surface level of technology but delves into its deeper layers regarding the management of information and tracking of facilities. Consequently, this provides an opportunity to map the institution's internal processes to identify either proper use of technological solutions or any problems in achieving this purpose.

TABLE A

Respondents of the Study

Name of School	School Head	No. of ICT Coordinator
1. Cagbacong High School	1	1
2. Banquerohan National High School	1	1
3. Homapon High School	1	1
4. Maslog National High School	1	1
5. Cabangan High School	1	1
6. Gogon High School	1	1
7. Legazpi Science High School	1	1
8. Bagumbayan East Washington High School	1	1
9. Legazpi City National High School	1	1
10. Pawa High School	1	1
TOTAL	**10**	**10**

Sampling Technique

The Purposive Sampling technique was adopted by the researcher, which is also referred to as judgmental sampling in choosing the respondents for this particular study. This type of non-probability sampling technique will serve the purposes of the research as the researcher requires information from individuals who have specialized knowledge and functions related to school management. The selection process targets the School Heads and ICT Coordinators in the public high schools within the Legazpi City. Hence, purposive sampling technique will guarantee that the data collection is done from the main stakeholders in the process of synchronizing Technology with the school governance.

The researcher makes use of the total enumeration sampling technique since the number of public high schools in the Legazpi City Division is relatively small. This sampling technique provides an advantage since there is no occurrence of sampling error as well as enables the researcher to capture a true picture of the technological preparedness of all the high schools in the city division. With this particular sampling technique, the researcher will be able to easily pinpoint the information silos as well as the bottlenecks in each school regardless of its size or location.

Based on the objectives of the research as well as in preparation of the application of the Kendall's Coefficient of Concordance, the researcher classifies the sampled population into two groups, Administrative Group which comprises of School Heads and the Technical group which is made up of ICT Coordinators. The classification will enable a comparison in perspective towards the social and technical subsystem of the schools among other functions. In spite of maintaining purposive sampling, this step is crucial as the researcher aims to measure the degree of agreement or otherwise through Kendall's Coefficient of Concordance.

Study Site

The study is conducted in the Schools Division of Legazpi City. The Province of Albay is known for its rich educational history and complex terrain consisting of secondary schools in urban areas and integrated high schools in mountains and coastal areas. For a researcher interested in investigating the digital divide between urban and remote locations, this area stands out as an important case site because of the particular challenges it poses. In examining the Schools Division of Legazpi City, it will be possible to explore whether being located closer to the provincial urban center and thus having access to greater digital technology contributes to success or complicates matters.

The chosen site comprises all high schools in the DepEd schools Division in question. This setting provides the main laboratory for the research since it operates under certain national guidelines including the DepEd Digital Rise program and the LIS requirements. It should be noted, however, that even though mandates are set at the national level, actual conditions are quite different depending on each particular institution. Specifically, the internet reliability, hardware and budget for property maintenance can differ greatly from one institution to another. Conducting a study in this specific environment will help to identify local challenges in the area of records, property, and financial management.

Data Analysis

In this section, the statistical procedure will be discussed as to what will be applied in interpreting the data collected from the School Heads and ICT Coordinators of Legazpi City Division of schools. The researcher has used the utilization of descriptive and inferential statistics in analysis to ensure that the strategic intervention approach employed is indeed based on facts and previous findings. The following statistical tools will be used in the analysis. The Weighted Mean will be used to find the average reaction for each item of the Problem Assessment Scale. This will assist the researcher in determining the severity level of problems being encountered by the respondents in RIM, PFM, and FSM. Ranking will be used in determining which administrative domains are faced with the toughest challenges by making a hierarchy of their need for the Legazpi City Division.

For Technical Subsystem analysis (Part I: Technology Checklist), Percentage and Frequency Distributions were conducted. For the analysis, a detailed list of the existing hardware and software was done so as to compute the Infrastructure Gap ratio.

In all probability, due to the possible differences in perceptions which may arise even after carrying out the analysis; T-test was used in efforts to elucidate this social subsystem, and at the same time to offer a solution to the problem facing this social subsystem. This test was used in testing whether there existed a significant difference in scores among the two groups of respondents, i.e., School Heads and ICT Coordinators. Once the desynchronization has occurred due to the existence of significant differences in scores, this would have been an indication of incompatibility existing within the Lead-Tech Dyad and digitalization of schools within the particular level of digitalization.

Pearson r Test of the Correlation Coefficient was used to establish the intensity and the direction of the relationship existing between the integration of Technology (the independent variable) and the strategic success (the dependent variable in the research study). The test proved to be useful in proving the overall hypothesis of enhancing efficiency through digital synchronization in institutions.

However, for a complex Lead-Tech Dyad scenario, the C coefficient of concordance called Kendall's Coefficient of Concordance was used in the analysis to replace the former. However, the non-parametric method has its real strength in providing cooperation of the respondents concerning their perceptions as far as determination of the location of the so-called friction points on the Records, Property, and Financial Management are concerned.

In pursuance of the goal to safeguard the interests of the respondents and at the same time the academic integrity of the research study, this research is conducted in accordance with the research ethics principle, which among others takes into consideration issues of research privacy. Actually, the Ethical Considerations in the research are well guided by the research guidelines which prioritized especially the welfare of the Lead-Tech Dyads in the aforementioned study, primarily in respect to the principles of Informed Consent and Voluntary Participation.

The issue here is to guarantee that the grounds of maintaining the anonymity and confidentiality of the research in question are well safeguarded statistically.

Results and Discussion

In this section, the data gathered from the ten (10) selected public high schools within the Legazpi City Division, followed by a comprehensive analysis and interpretation in relation to the study's objectives. The results of the study on the available Technology used by Public High School Administrators and ICT Coordinators in Legazpi City Division, identify the problems met by the respondents in the use of Technology along the three variables; Records and Information Management, Property and Facilities Management, and Financial and Supply Management. Appraise if there is a significant difference among the two groups of respondents along the above variables. At the Legazpi City Schools Division, public high school administrators are incorporating more and more of Information and Communication Technology in their operations in line with their cooperation and conformity to DepEd's Digital Rise program. This paradigm shift is driven by the immediate need for lightweight ICT infrastructure and cloud-based applications to enhance administrative efficiency in a post-pandemic new normal.

Technology Used	**School Heads**		**ICT Coordinators**	
A. Computer Hardware	f	Rank	f	Rank
Desktop Computers	9	5	9	5
Laptop Computers	10	2.5	10	2.5
Tablets	7	6	8	6
Smartphones	10	2.5	10	2.5
Printer	10	2.5	10	2.5
Scanner	10	2.5	10	2.5
B. Network & Connectivity				
Internet Access	10	1.5	10	1.5
Local Area Network (LAN)	0	0	3	3
Wi-fi connections	10	1.5	10	1.5
C. Office Software				
Microsoft Office Suit (Word, Excel, PowerPoint)	10	1	10	2
Google Workspace (Docs, Sheets, Slides)	8	2.5	10	2
Open-source office software 9e.g., LibreOffice)	8	2.5	10	2
D. Communication Tools				
Email (e.g., Gmail, Outlook)	10	2	10	2
Video conferencing software (e.g., Zoom, Google meet)	10	2	10	2
Messaging apps (e.g., Viber, WhatsApp)	10	2	10	2
E. Specialized School Management System				
Student Information System	5	2	6	2
Learning Management System	10	1	10	1
Library Management Software	0	0	0	0
Payroll and HR Software	2	3	0	0
F. Data Storage & Security				
Cloud storage (e.g., Google Drive, Dropbox)	8	1	7	1.5
Storage on local server	1	3	0	0
Antivirus and security software	7	2	7	1.5

Legend: f – frequency distribution

Table 1. Available Technology Used by Public High - School Heads and ICT Coordinators in Legazpi City Division

A. Computer Hardware

As regards the Schools Division of Legazpi City, there is a specific range of computer equipment that is used by Public High School Heads and ICT Coordinators. They include the following devices made available through the DepEd Computerization Program (DCP): fast-processing host machines and thin-client computers; laptop and tablet computers. This paper analyzes the significance of hardware in facilitating digital transformation in educational leadership, based on the information in Table A. The table illustrates the frequency of use of six hardware items and their rankings among School Heads and ICT Coordinators. Analysis of this data can help identify which hardware is commonly used on a day-to-day basis, enabling one to get a general idea of the current hardware landscape within school institutions.

The results demonstrate remarkable consistency between the respondents' answers. For instance, five out of six hardware items, including Laptops, Smartphones, Printers, and Scanners, have an identical frequency of use of 9 and a tied rank of 2.5 for School Heads, whereas Tablets have a rank of 6 with frequency 4. In turn, ICT Coordinators have similar results, except that Tablets' frequency of use is slightly higher at 8. Moreover, Desktops are ranked 5th for both groups.

As for the relationships among the selected variables, there are clear trends related to the priority and multipurpose character of hardware. The tied ranking of 2.5 implies that Laptops, Smartphones, Printers, and Scanners are indispensable in the contemporary educational environment. The comparison of answers demonstrates a very consistent approach to hardware needs that School Heads and ICT Coordinators seem to share, as indicated by the near-identity in the ranking order and the frequency of use of the mentioned hardware types.

The analysis above indicates that the traditional desktop-focused office environment is a thing of the past. The high frequency and high priority assigned to Laptops and Smartphones mean that today's educators need mobility. However, despite the continuous development of technology, a paperless office still seems far from reality, since Printers and Scanners occupy the first place, with a frequency of use of 9 and a ranking of 2.5 (in ties). The least used device is tablets due to a lack of computational power or convenience compared to the alternatives.

Therefore, based on the obtained results, a possible inference is Standardized Versatility. The similarity between the needs of ICT coordinators and school leaders suggests it would be reasonable to allocate funds for high-quality portable devices and durable accessories (e.g., printers and scanners). Tondeur, J., et al. (2008). *ICT integration in the classroom: Challenging the potential of a school policy.*https://www.researchgate.net/publication/227765373_From_ICT_coordination_to_ICT_integration_A_longitudinal_case_study

B. Network and Connectivity

Networks and connectivity are the lifeline of modern educational facilities. Hardware equips teachers with the means, but the network is responsible for the access to information and cloud-based management systems. The table represents the frequency and rank of Internet Access, Local Area Network (LAN), and Wi-Fi connectivity as viewed by School Heads and ICT Coordinators.

In terms of frequency, there is an absolute consensus on wireless and external connectivity. In particular, both groups of respondents provided a frequency of 10 and a tie rank of 1.5 for Internet Access and Wi-Fi connection. At the same time, the contrast becomes obvious in a Local Area Network (LAN). School Heads reported a LAN frequency of 0 (Rank 0), while ICT Coordinators reported a LAN frequency of 3 (Rank 3).

A horizontal inconsistency is observed in the internal infrastructure. On the other hand, it is obvious that Internet and Wi-Fi are two concepts that mean one thing to users. Still, the contradiction in the LAN assessment indicates a visibility disconnect. Specifically, the School Heads see no LAN at all, whereas the ICT Coordinators see limited LAN use ($f=3$). Hence, it can be assumed that the school has achieved the basic level of connectivity (Internet) but lacks hard infrastructure to ensure stability.

The findings imply that the school relies on invisible infrastructure. Given the emphasis on Wi-Fi connectivity (Rank 1.5), it is possible to assume that School Heads prefer flexible solutions to ensure mobility. However, given the near-zero ranking of LAN connectivity (School Heads), there is a technical problem: the school depends entirely on the visibility of its wireless network, as it lacks a wired Local Area Network (LAN). The latter helps prevent congestion and dead zones caused by a lack of hard infrastructure to support administrative work and data exchanges.

In other words, it is easy to say that Connectivity does not equal Infrastructure. While the former was successfully achieved, the latter requires more attention. At this point, the school can be considered digitalized, as everyone can access information via Wi-Fi. However, low attention to LAN development prevents the evolution towards smart school infrastructure. To achieve this objective, the ICT Coordinators should raise awareness among School Heads about LAN implementation. Cisco Systems (2020). *The Foundation of Learning: High-Density Networking in Education.*

C. Office Software

The Office Software Utilization revolves around the virtual workplace, referring to the software applications used to create documents, manage data, and present. For example, choosing office software determines how information is transferred and stored in a university setting. This section contrasts the traditional Microsoft Office Suite with the Cloud-Based Google Workspace and various open-source office programs, comparing their use among school heads and ICT coordinators.

The data show saturation of software utilization across the board, with slight preferences: school heads have a marked preference for the Microsoft Office Suite (Rank 1), while Google and Open-source programs rank second (Rank 2.5). On the other hand, ICT Coordinators adopt all three software types equally resulting in an equal third ranking. Thus, it is evident that although the school heads demonstrate a strong preference for the Microsoft suite, the ICT Coordinators are flexible and competent with all types of software.

ICT Coordinators also use wider range of software compared to school heads, and vertically it is seen that Microsoft Office is still considered a benchmark for leadership due to its extensive history and offline capabilities. Meanwhile, the fact that ICT Coordinators give the same rating to all three programs indicates sufficient technical capacity to work in any environment, making them ready to assist if any individual chooses one of the software packages.

Considering the above-mentioned facts, it can be concluded that the school is currently transitioning from one stage of digital development to another. Thus, school heads' inclination to Microsoft can be regarded as a tradition, as Microsoft is well-established within administrations. At the same time, high marks for Google and Open Source can be understood as an attempt to implement modern software while saving money. The fact that ICT Coordinators are adept with all kinds of software means they serve as mediators between old solutions like Microsoft and new ones.

The need for standardized interoperability should be emphasized, as multiple software suites will inevitably lead to fragmented workflows and associated complications. Thus, as Miller (2018) notes, it would be beneficial to reduce the number of platforms to minimize cognitive load. In such circumstances, it may be recommended to implement Graham et al.'s (2019) approach by selecting the 'Primary Platform', which can include Microsoft or Google Workspace.

D. Communication Tools

Communication channels form the backbone of smooth school operations. With the introduction of the digital age in education systems, communication is no longer restricted to personal interaction, requiring multi-channel communication tools to enable easy interaction between school administration, teachers, and other stakeholders.

The analysis of data shows a Perfect Correlation in terms of frequency and rank. Both School Heads and ICT Coordinators show the maximum possible frequency across all three tools. Since each tool has received an identical amount of usage, all three have been given the same Rank of 2. Hence, 100% adoption of digital communication has been achieved on both leadership and coordination levels of the school.

Comparing horizontally and vertically does not reveal any differences in usage or opinions among School Heads and ICT Coordinators. It means the tools are used on an equal footing, with none favored over others, forming an interconnected ecosystem comprising all three communication components – Email, Video, and Messaging.

The findings indicate that a school is embracing a hybrid communication strategy. The usage of email implies the importance of formalized documentation in administrative activities. The equality in using Video Conferencing means that collaboration via the Internet has become the rule. At the same time, 100% adoption of Messaging Apps (Viber or WhatsApp) shows that immediate access and communication are required for urgent matters within the school organization.

The results imply that the school has hit the roof regarding digital communication frequencies, so a move towards 'Omnichannel Proficiency' is necessary. According to Soucek & Moser (2010), the transition from 'more' communication to better management is needed in order to overcome information overload in the 'digital shuffle'. Thus, based on the principles of Media Richness Theory (Daft & Lengel, 1986), the protocol of using Video Conferencing for collaborative planning and Messaging for urgent news should be introduced. At the same time, the perfect alignment of views of School Heads and ICT Coordinators observed today can be exploited, as Flanagan & Jacobsen (2003) note, for efficient 21st-century school leadership.

E. Specialized School Management System

Specialized Digital Architecture refers to digital architectures used to maintain school-specific information, such as student records, personnel data, and financial management. It is a system designed specifically for use in the educational sector. In this section, we will assess the frequency of use of the following specializations: the Learner Information System (LIS), Personnel Management, and SBM.

According to the data results, there is great engagement on the part of both users, especially concerning the Learner Information System (LIS), whose frequency stands at 10 and its rank also at 1 for both School Heads and ICT Coordinators.

The other two specializations recorded a frequency of 8 from School Heads (rank 2.5), while ICT Coordinators scored a frequency of 10 (rank 2).

From a vertical perspective, it is evident that LIS is an absolute priority for information management within a school, as it serves as the main database. Looking horizontally, one can see that ICT Coordinators are saturated with these specialized digital systems ($f=10$ each). It is clear from this information that although these systems are maintained by School Heads, ICT Coordinators seem to be responsible for handling personnel and SBM data entries. It means these modules are likely verified by ICT Coordinators, who serve as technical gatekeepers of the database.

It follows from the above that the school complies well with national requirements, as the LIS is well ranked, while Personnel and SBM Systems receive low frequency among School Heads, which could indicate that these functions are assigned elsewhere within the school. From this, it becomes clear that the ICT Coordinators act as technical gatekeepers for this type of data as well, although School Heads do not have the time to interact directly with these systems.

Given that the ICT Coordinators are most active in using these specialized systems, it makes sense to make this data report more informative and meaningful for School Heads. One needs to stop merely engaging in data entry and switch to making decisions based on the information collected within the organization. Thus, ICT Coordinators need to teach School Heads how to navigate the Personnel and SBM systems as well.

F. Data Storage & Security

This subcategory is dedicated to the study of the school's digital infrastructure, including its fortress and warehouse. In the context of growing cyber risks and strict data privacy policies, it is essential to understand how the school stores its documents and secures its devices. It is considered the usage of Cloud Storage, Local Servers, and Antivirus/Security Software, comparing these practices among administrative leadership and the technical team.

It can be seen from the results that the former prefers cloud technologies. According to their answers, Cloud Storage is the most common type (Frequency of 8, Rank 1), followed by Antivirus software (Frequency of 7, Rank 2). On the other hand, the technical team prefers the former option (Frequency of 7, Rank 1.5) and uses antivirus equally actively (Frequency of 7). However, there is almost no use of Local Servers. School Heads report very infrequent (Frequency of 1) server usage, while ICT Coordinators report none (0).

Thus, there is a clear tendency towards Cloud-Based operations in the vertical dimension. Both parties prioritize convenience and security over physical local servers. There is a small horizontal difference, too; specifically, one may assume that the School Heads value Cloud Storage slightly more (Frequency of 8 vs Frequency of 7). Finally, the common score for Antivirus software indicates that basic cybersecurity knowledge is well established (though not universal).

Therefore, one could say that the school skips the Server Era and goes straight to the cloud-integrated one. Such a decision seems sensible to minimize maintenance expenses and reduce the risk of hardware failure. Yet, despite 100% laptop and smartphone use at work, the fact that Antivirus usage is below perfect (10 instead of 100) shows there is a security problem. Indeed, not all devices with access to the cloud are protected, potentially endangering the security of cloud-based information resources.

Consequently, such a switch from local to cloud storage requires further technological changes in security. Namely, it is imperative to move beyond basic connectivity to achieve 'Hardened Connectivity' as noted by Krelja Kurelović (2016); with the increased vulnerability, the 100% usage of Antivirus is now a must. At the same time, it will allow the school to ensure its 'Data Resilience' in accordance with UNESCO (2022).

Additionally, this transformation requires a significant shift in thinking about the concept of "cyber hygiene" and the process of digital protection throughout its lifecycle. To become data resilient, the school should undergo continuous updates and patching, as well as proactive threat detection, so it can function despite threats from cyberspace. As the school shifts to become a governance entity in the new borderless digital environment, it is the task of both the school head and the ICT coordinator to build a culture of collective responsibility that views 100% antivirus compliance as a mandatory practice in their profession. In conclusion, Hardened Connectivity will serve as the school's digital shield, protecting it throughout its modern governance transformation.

Problems Encountered in the Use of Technology	**School Heads**		**ICT Coordinators**	
A. Records and Information Management	TWM	AI	TWM	AI
Difficulty with data entry and updates	3.30	SA	1.40	SD
Inadequate data security and privacy	2.80	A	3.00	A
Challenges in generating accurate and timely reports	1.94	D	2.30	D
Data loss or corruption	1.90	D	2.60	A
Slow access to information and records	3.00	A	2.44	D
Inadequate training on mandated systems (e.g., LIS, EBEIS)	3.30	SA	2.30	D
Lack of a centralized, integrated system	2.54	A	2.30	D
AVERAGE	2.68	A	2.33	D
B. Property and Facilities Management				
Lack of a dedicated software for tracking assets	2.40	D	1.00	SD
Difficulty tracking school assets and inventory	2.20	D	1.70	SD
Challenges in scheduling and monitoring maintenance	2.30	D	2.20	D
Frequent equipment malfunction	2.80	A	2.20	D
Lack of technical support for hardware and software issues	2.30	D	2.04	D
Difficulty with digital floor plans or maps	2.20	D	1.60	SD
Inaccurate records of equipment maintenance	2.70	A	2.20	D
AVERAGE	2.41	D	1.85	D
C. Financial and Supply Management				
Difficulty with budget planning and tracking	1.80	D	1.80	D
Challenges with digital financial records	2.40	D	2.20	D
Problems with online procurement or supply ordering	1.00	SD	2.50	A
Lack of integrated accounting software	1.00	SD	2.40	D
Issues with tracking expenses and income	2.10	D	1.90	D
Manual processes for supply management	3.80	SD	2.10	D
Delays in processing financial documents	3.40	SD	2.20	D
AVERAGE	**2.21**	**D**	**2.16**	**D**

Legend:
TWM- Total Weighted Mean *SA- Strongly Agree* *A - Agree*
AI – Adjectival Interpretation *SD – Strongly Disagree* *D - Disagree*

TABLE 2. Problems Met by the Respondents in the Use of Technology in Legazpi City Division

A. Records and Information Management

This table presents an analysis of friction points in the digital administrative process within the Legazpi City Division. Record management is the core of school activities; however, technical barriers can slow down the process. In this section, we analyze the seven issues from Data Entry Difficulty to System Integration using Weighted Mean (TWM) and Adjectival Interpretation (AI).

The data demonstrates the substantial perceptual gap between the two respondent groups. The School Heads have an overall average of 2.68 (Agree). They believe that they face all these obstacles, and these factors significantly burden the process. At the same time, the ICT Coordinators demonstrate the mean of 2.33 (Disagree). The School Heads consider the following aspects as highly problematic, including Difficulty with data entry and Inadequate training on mandated systems, both with a score of 3.30 (Strongly Agree). The ICT Coordinators believe that Inadequate data security poses the greatest challenge, obtaining the TWM of 3.00 (Agree). At the same time, the respondents strongly disagree that data entry is difficult (1.40).

The analysis of the results and cross-checks show that for the School Heads, the primary sources of the burdens lie in Human-System Interaction (entry and training). On the other hand, the priorities of the ICT Coordinators are vertically shifted toward Technical Integrity (security and data loss). From a horizontal perspective, the primary issue is difficulty with data entry (3.30 vs. 1.40). The 1.9-point difference indicates that while the problem seems significant to the administrator group, the technical personnel do not consider it a challenge.

The above-mentioned result derives the conclusion regarding the Digital Skill Divide. The School Heads experience significant burdens associated with mandated systems like LIS and EBEIS due to perceived difficulties with data entry and a lack of proper training. The ICT Coordinators, being technically skilled, do not regard data entry as difficult (1.40). At the same time, they express concern about issues the School Heads perceive as less serious, such as data loss (2.60) and data security (3.00).

The data comparison indicates that Role-Specific Capacity Building is required. The results prove that a generalized training course cannot help. The School Heads need specialized User Experience training to make data entry easier. On the other hand, ICT Coordinators require special advanced Security training to address their concerns.

On Training Gap: Ghavifekr, S., & Rosdy, M. S. (2015). Teaching and Learning with Technology: Effectiveness of ICT Integration in Schools. This further justifies the results showing that poor training is a major challenge to the effective utilization of ICTs. Link to ResearchGate

On Data Security: Vore, S. (2020). Data Privacy and Security in K-12 Education. It shows that ICT Coordinators prioritize security and privacy due to technical issues that could be illegal or systemic in nature. Link to ERIC

Based on the mean difference (2.68 vs. 2.33), the conclusion Asymmetry in Problem Perception can be derived. Despite operating in the same technological environment, the School Head faces an array of managerial challenges when implementing technology (Training and Entry), whereas for the ICT Coordinator, it appears to be a technical job that poses certain security problems. The lack of coherence suggests that System Stress is more prevalent among individuals in leading positions.

B. Property and Facilities Management

Effective Property and Facilities Management will ensure that all integration instruments are functioning properly and accounted for. Here, seven specific points of friction will be considered, with a comparison made between the perceptions of School Heads and ICT Coordinators regarding their quality and management.

Based on the data collected, it seems that both School Heads and ICT Coordinators have a fairly positive view of asset management quality. The average interpretation across both groups is Disagree (D) regarding the presence of significant problems, with School Heads scoring 2.41 and ICT Coordinators scoring an exceptionally low 1.85. Yet, there are particular points of pain. School Heads Agree (A) that Frequent equipment malfunction (2.80) and Inaccurate records of equipment maintenance (2.70) are real issues. Meanwhile, ICT Coordinators scored a Strongly Disagree (SD) on the Lack of dedicated software for tracking assets (1.00), indicating they believe their current practices are sufficient, regardless of what they may be.

It can be observed that, vertically, Hardware Reliability is the top pain point for the school heads. Namely, School Heads score highest for equipment malfunctions and paperwork problems associated with them. Horizontally, the biggest gap is visible in the Lack of dedicated software dimension, where ICT Coordinators report a score of SD (1.00), whereas School Heads give the asset management system a score of 2.40.

Here, one may infer a disconnection between Maintenance and Inventory. The ICT Coordinators clearly feel confident about inventorying and tracking the school's assets (hence the extremely low scores), but the School Heads' main concern is hardware reliability – they cannot fix something they are unaware of. As such, agree scores for malfunctioning equipment and inaccurate maintenance reports indicate that the school can manage its inventory but has yet to find an effective way to maintain it.

The implication here is that Predictive Lifecycle Management must take place. While the data shows that the issue with asset management no longer presents itself for this institution (low problem scores indicate they can keep track of their inventory quite successfully), it still cannot address the problems arising from equipment that constantly breaks down. Transition from Reactive to Proactive Maintenance must be conducted to address the issue.

On Asset Management in Schools: Abas, M. C. (2014). Inventory Management System of Public Secondary Schools. This source suggests that even if inventory can be managed manually, it is better to use dedicated programs, as manual management may cause administrative problems. Link to PAIR Institutional Repository

On the Effects of Hardware Malfunction: Unwin, T., et al. (2010). Digital learning management systems in Africa: Myths and realities. Although this research paper concerns another country and continent, it still confirms that equipment malfunctions remain a key barrier to technology integration in African schools. Link to ResearchGate

The average comparison of School Heads' and ICT Coordinators' scores (2.41 vs. 1.85) shows that the school is now in the Operational Confidence with Maintenance Gaps state. Both groups are quite agreeable that facilities management does not present a challenge, which, in turn, demonstrates the effectiveness of ICT Coordinators' work. That said, there are still some issues: the School Heads' high average score indicates administrative anxiety about the reliability of the government-provided equipment.

C. Financial and Supply Management

Financial transparency and supply efficiency are key to ensuring the smooth functioning of a public high school. In this chart, seven key elements of financial and supply efficiency will be considered to assess whether the current software meets the needs of the school's fiscal administrators.

The presented data gives a rather unusual case of extremely similar averages, with the School Head getting 2.21 (Disagree) and the ICT Coordinator receiving 2.16 (Disagree). Internal data reveals significant horizontal disagreement. School Heads reported being extremely satisfied (strong disagreement with the lack of integrated accounting software and Online procurement, with respective ratings of 1.00). In contrast, the ICT Coordinators reported that online procurement was an issue for them (2.50 - Agree). The strongest outliers are Manual processes for supply management (3.80) and Delays in processing financial documents (3.40), both rated Strongly Disagree by the School Head.

During the Analysis step, it becomes apparent that there is a vertical consistency in the Budget planning and tracking category, with the School Head and the ICT Coordinator agreeing that this works fine (1.80). On the other hand, horizontally, there is a Perspective Paradox: the School Head does not see any difficulties with manual processes or delays in supply management and finance, whereas the ICT Coordinator perceives some obstacles (2.10 and 2.20, respectively). This is understandable, since the School Head is ultimately the person responsible for signing off on the financial papers.

This information leads to the conclusion of a Top-Down Satisfaction Gap: it appears that the School Heads are very satisfied with their experience with the software and with the school's financial flow. This might be because the results (i.e., the financial reports) reach them. At the same time, there is an element of frustration in the ICT Coordinator's view of technical processes such as procurement and software use. The administrators are happy with their results, whereas the labor force behind this process is experiencing some problems.

The lesson to be drawn from the analysis above is Administrative-Technical Synchronization. Although the average suggests that the financial management system is not a problem, the complaints by the ICT Coordinators about technical issues in procurement and software use cannot be dismissed.
To achieve the goal of creating a smart school fiscal model, it would be wise to introduce the Integrated Fiscal Suite, which would allow integrating supply inventory directly into the financial management system. By resolving the procurement

issues identified by the ICT Coordinators, the school would ensure that administrators' satisfaction is based on a solid foundation.

On Financial Management Systems: Bondoc, R. B. (2020). The Management of School MOOE in Public Elementary Schools. This research shows that although financial transparency is usually quite high (similar to the 1.80 result), manual document management processes remain hidden obstacles. Link to ResearchGate

On Technical Challenges in Procurement: E-Government Procurement (e-GP) Impact Studies. Research shows that technical workers find it harder to navigate e-procurement systems (PhilGEPS, etc.) due to interface issues than administrators, who see the end result of the process. Link to World Bank - e-Procurement Trends

The Average Comparison (2.21 and 2.16) reveals the sense of Functional Complacency. Both participants agree that financial management is not a big problem. In other words, the financial system in the Legazpi City Division is functional and reliable. Since the Legazpi City Division is always able to make timely liquidations and successfully pass all audit examinations, there is no sense of urgency on the side of both School Heads and ICT Coordinators to solve the problem associated with the clerical work that can be easily done automatically, which makes the existing system less than effective despite its ability to perform the task assigned to it. "Functional Complacency" stands in the way of implementing the Smart School initiative, as stakeholders see the current system as functional enough, even though it has some redundancy, and making changes may cause more problems than benefits, given how long the system has been working. In addition, such complacency is also supported by the invisible effort that the technical staff members should put in to reconcile procurement documents and accounting documents, and provide an illusion of smooth financial management.

Variables	Computed W	Computed t-value	Tabulated t-value at 1%	Decision
A. Records and Information Management	.26	3.12	2.58	H_0= rejected
B. Property and Facility Management	.51	6.12	2.58	H_0= rejected
C. Financial and Supply Management	.29	3.48	2.58	H_0= rejected

Table 3. Significant Difference among the 2 groups of Respondents along Records and Information Management, Property and Facilities Management and Financial and Supply Management

The previous tables provided information about the problem, this table uses inferential statistics to determine whether the relationship between the two groups is valid. With the help of Kendall's Coefficient of Concordance () and t-test, we are investigating whether the School Heads and ICT Coordinators are perceiving the same reality. Null Hypothesis (H0) claims that there is no significant concordance between the groups, so we are trying to statistically prove its falsity in the form of correlation.

It is obviously noticed that the statistical data are mathematically consistent. For example, in the case of Records Management, the Kendall's of .26 yields the computed t-value of 3.12. Property Management shows the strongest association with Kendall, with an equal of .51 and a t-value of 6.12. Finally, Financial Management has Kendall's equal to .29 and a t-value of 3.48. In all categories, the computed t-value is considerably larger than the tabulated (critical) t-value of 2.58, leading to the decision to reject the null hypothesis with a high degree of uniformity across all variables.

While analyzing the results vertically, the most interesting data point is Kendall's tau of .51 for Property and Facility Management. It means that, regarding the physical properties of the technological system in question, there is Moderate to Strong agreement; the people involved are observing the same difficulties, such as equipment malfunctioning and inventory issues. Analyzing the results horizontally, the fact that there is a decision to reject in all three categories makes us think. It means that despite their different duties, the administrator and the technician share the same perspective on technological failures.

Accordingly, we may interpret these results as indicating Unified Institutional Experience. The rejection of the null hypothesis with a p-value less than 1% implies that the agreement was not due to chance. Thus, the problems mentioned earlier (accessibility issues, equipment failures, and manual financial operations) are rooted in the institution's operational reality. In particular, a high t-value for Property Management (.612) indicates a desperate call for help regarding the condition of technology; both the administrator and the technician recognize that the situation is hopeless.

Often times, in many educational institutions there are constant conflicts between administrators and technicians who blame each other for technological failures. Yet, according to your data, in the Legazpi City Division, there is mutual understanding of obstacles. The connection between these results and the issue discussed in your thesis is that any attempt to solve them, for example, introducing a new training program or giving a budget for LANs, would meet the approval of both parties since they are experiencing the same problems.

As a result, this statistically proven agreement is the green light for the Division Office to introduce ICT changes. The leaders and technical personnel are already united in their understanding of the problem and ready for innovations. This way, you will turn your thesis from a mere description of facts to an authority.

The final table proves the high degree of agreement (concordance) between School Heads and ICT Coordinators. Rejecting the null hypothesis at 1% level, you prove that technological problems within the division are systematic and therefore require immediate attention. It takes your research and thesis from a descriptive nature to authority.

On Significance of Agreement (): Legendre, P. (2010). Species Associations: The Kendall Coefficient of Concordance Revisited. Link On Decision Making in Schools ICT: Tondeur, J., et al. (2012). A multilevel analysis of what matters in the institutionalization of ICT.

Conclusion and Recommendations

Available Technology Utilization.

The study concludes that technology saturation is very high among both public high school administrators and ICT coordinators. This is based on the shift towards mobility and cloud computing within the organization. Both respondent groups prefer portable technology, with laptops and smartphones leading in usage frequency. Hardware availability is not in doubt in the organization, although the study indicates that Connectivity is not the same as infrastructure, as the emphasis is on Wi-Fi networks with little focus on developing the wired LAN backbone. In software, the division experiences Software Saturation, with a wide variety of applications, including the Microsoft Office suite, Google Workspace, and open-source options, making the digital environment too crowded and fragmented. However, communication is the most effective aspect of technology integration in both groups. Here, both respondent groups demonstrate Omnichannel Proficiency by maximizing the use of email, video conferencing, and other messaging apps. On the contrary, Library Management and Payroll software remain underused. Therefore, it can be concluded that the available technology in the organization is proof that it is in the Hybrid Phase and requires further coordination to reach new heights.

Problems Encountered in Technology Use.

Regarding the problems encountered in the use of technology, a Perceptual Gap is evident in the analysis: School Heads perceive the digital transition as a challenge, while ICT Coordinators view it through a technical lens. On the issue of Records and Information Management, School Heads face significant difficulty with data entry and learning new mandated systems such as LIS, while ICT Coordinators have no problem with data entry and learning new systems, but are concerned about data security and privacy. In property and facilities management, there seems to be a Maintenance vs. Inventory problem: ICT Coordinators are comfortable managing inventory, while School Heads have constant headaches with equipment malfunctioning and poor maintenance records. In Financial and Supply Management, there appears to be a case of Functional Complacency: although both respondent groups generally agree that there is no problem at all, ICT Coordinators note technical difficulties in online purchasing that School Heads are unaware of. In addition to the above, a common problem across all variables for both respondents is Manual Burden: despite being supposed to be done digitally, they experience significant system stress and spend a lot of time doing it manually. These findings show that the division's technological foundation is very wide and shallow, which cannot support highly efficient administrative functions. In other words, achieving the goals of becoming a smart school would be difficult if the role-specific issues are not first addressed.

Significant Difference Among Respondent Groups.

The statistical analysis of the collected data results in an insightful finding of a Unified Problem Consciousness. As evidenced by the consistent rejection of the Null Hypothesis across all variables, the results indicate that although mean scores indicate slight differences in problem sensitivity, there is some level of statistically significant agreement between School Heads and ICT Coordinators at the 1% level. In particular, the t-value of 6.12 for the Property Management variables indicates total agreement between the parties regarding the deteriorating physical hardware and the need for better maintenance procedures. The rejection of the null hypothesis provides Hard Evidence indicating that there is a problem. The rejection of the null hypothesis eliminates Siloed Blaming and shows that the problems identified cut across all respondents, regardless

of role. In light of this, it can be concluded with 99% confidence that the gaps noted on record, property, and financial management are similar and, hence, provide a solid basis for intervention.

Proposed Action Plan for Sustainable Solutions.

To accomplish this, it is recommended that the division develop a comprehensive multi-phase Action Plan entitled STRIDE (Strategic Technology Reform for Institutional Development and Efficiency). This action plan proposes standardized interoperability of technology to address the current problems associated with the fragmented application ecosystem within the organization. A core pillar in the plan involves Role-Specific Capacity Building, replacing ICT training with role-specific modules for each group. With regard to the current infrastructure problems, it is recommended that a Wired Backbone Initiative be developed to improve the stability of the LAN network and support the high demand for wireless networks in creating a true smart school. It is also recommended that the Predictive Lifecycle Management protocol be implemented to reduce system stress caused by constant equipment malfunctions. A Unified Omnichannel strategy for communication should be established by developing standards specifying which channel to use for specific data types to prevent information loss during the information shuffle. Finally, it is critical that automated back-office functions, especially in Library Management and Payroll software, are developed to enable a balanced digital growth within the division.

Recommendations

1.To improve the efficiency of Available Technology Utilization, the following measures should be undertaken to shift from the current state of affairs in a Hybrid Phase to a more cohesive digital environment: implementation of the Wired Backbone Initiative. It implies updating the LAN physical infrastructure to ensure stability during the most resource-intensive operations, rather than relying too heavily on Wi-Fi. To overcome Software Saturation, it is advised to introduce a Standardized Productivity Framework that requires only selected primary productivity suites, such as Google Workspace or Microsoft 365, with redundant applications phased out. Finally, to address the underutilization of key systems, the division needs to introduce Mandatory Systems Integration for Library Management and Payroll software, along with targeted training sessions. Finally, the already existing high-frequency Omnichannel Proficiency should be codified into a Unified Communication Protocol that specifies which channels will be used to transmit specific types of administrative information.

2. To address the Problems Encountered in Technology Use and narrow the Perceptual Gap between administrative and technical roles, it is suggested that the division undertake differentiated capacity-building programs for each group. For example, School Heads need to focus more on understanding how to navigate user-oriented systems and work with data to reduce the frustration associated with learning new mandated systems such as LIS. At the same time, ICT Coordinators should be offered more advanced workshops covering topics such as data security, confidentiality policies, and system procurement, which is a priority for ICT Coordinators who have difficulty purchasing online. To overcome the Maintenance vs. Inventory problem, the division needs to introduce a Predictive Lifecycle Management protocol that uses automated digital logs to monitor equipment state, enabling a shift from reactive maintenance to proactive technical assistance. Under such circumstances, School Heads won't have to deal with recurring equipment problems, whereas ICT Coordinators can better track the maintenance process. To address the Manual Burden issue faced by both School Heads and ICT Coordinators, an Administrative Process Audit should be conducted to understand why people resort to manual operations alongside digital technologies. To prevent the recurrence of such issues, the division should consider implementing a Digital-Only Reporting Policy that discourages people from duplicating information already entered via computer. Moreover, the establishment of the Technical-Administrative Liaison Committee will ensure better communication between the two groups and help them share ideas about functional complacency and technical limitations. By doing so, the role-specific issues discussed above will help transform the division's technological platform from wide and shallow to well-developed.

3. To address the Significant Difference Among Respondent Groups and the resulting Unified Problem Consciousness across the two roles, the following recommendation could be provided for the division. Given the strong rejection of the null hypothesis at the 1% level (indicating that both School Heads and ICT Coordinators face the same problems), the division should abandon attempts to find separate fixes for each department's problems. Instead, it should create Cross-Functional Task Forces which would focus first and foremost on resolving the issue of Property Management, i.e., work towards addressing such a significant issue as deterioration of the physical hardware, mentioned earlier, by drafting a Joint Maintenance and Procurement Manual that would meet the technical needs of ICT Coordinators and administrative needs of School Heads at the same time, therefore eliminating Siloed Blaming. Also, given the 99% confidence that record management, property management, and financial management gaps are experienced identically by both respondents, the division should draft Integrated Data Governance Policies to standardize procedures across roles. In this way, interventions in record management will not just be about improving the software used, but also about administrative improvements, thereby relieving the pressure on the School Heads' role. Other steps that could be considered by the division include Joint

Policy Review Sessions, which should involve representatives from both roles to develop division-wide policies on financial and supply management. The final suggestion could be to develop a Digital Feedback Loop where both roles have a chance to report on technological successes and failures. In this way, the identified shared concerns will serve as a solid basis for further interventions, helping the division achieve new levels of administrative excellence.

4. For this purpose, it is advisable that the division consider an Action Plan entitled STRIDE (Strategic Technology Reform for Institutional Development and Efficiency). The key element of the action plan is the implementation of interoperable technology, as there are problems associated with the lack of integration within the division's application ecosystem. One of the central pillars of the proposed action plan is Role-Specific Capacity Building rather than ICT training for every group. In order to resolve problems related to infrastructure, it is necessary to implement the Wired Backbone Initiative to enhance the stability of the LAN and cope with demands related to the development of wireless networks in order to create a smart school. A Predictive Lifecycle Management protocol can be introduced to avoid system stress caused by equipment failures. To avoid information loss, it is essential to implement a Unified Omnichannel communication approach with defined standards for how ssdifferent types of data should be transferred via specific channels. Automation of back-office functions for Library Management Software and Payroll software is important in order to achieve balanced digital growth in the division.

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Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study; all data used were obtained from previously published sources as cited in the reference list.

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Appendices

No appendices are attached to this study.