

# Communication Accuracy As Influenced By Optimization Of Digital Processes Of Teachers Among Secondary Schools

Rochelle Amor L. Grandeza

<sup>1</sup>(Graduate School Of Rizal Memorial Colleges Inc., Davao City, Philippines)

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## **Abstract:**

**Background:** This study explores the relationship between Optimization of Digital Processes (ODP) and Communication Accuracy (CA) among teachers in secondary schools within Cluster 4 of the Department of Education in Davao City Division.

**Materials and Methods:** Quantitative research methods were employed, utilizing data from a comprehensive survey assessing various aspects of digital processes and communication practices among teachers.

**Results:** The study found a significant positive correlation (Pearson's  $r = 0.726$ ,  $p < .001$ ) between ODP and CA Total, highlighting the interdependence of effective digital processes and communication accuracy. Specific dimensions such as Communication Clarity, Communication with Staff, and Timeliness of Communication were also examined.

**Conclusion:** Based on the findings, recommendations are proposed for stakeholders including the Department of Education, Cluster 4 Head, School Heads, Teachers, Students, and Parents. These recommendations emphasize the need for targeted professional development, collaborative initiatives, and technological infrastructure improvement to enhance digital processes and communication accuracy in secondary schools.

**Key Word:** Optimization of Digital Processes (ODP), Communication Accuracy (CA), secondary schools, Department of Education, Cluster 4, Davao City Division, quantitative research, communication practices, professional development, technological infrastructure.

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## I. Introduction

In the ever-evolving landscape of education, the integration of digital processes has fundamentally transformed the dynamics of communication within secondary schools. The advent of digital tools, ranging from Learning Management Systems (LMS) to virtual classrooms, has introduced unprecedented opportunities and challenges for educators.

As Smith and Jones (2018) assert, the adoption of digital processes in education has redefined traditional pedagogical approaches, offering interactive and engaging learning experiences. Within this context, effective communication emerges as a linchpin for successful teaching and learning. Communication accuracy, the precise conveyance of information between teachers and students, becomes paramount in an era where digital tools serve as conduits for educational interaction.

The optimization of digital processes by teachers stands at the forefront of this paradigm shift. Hargreaves and Fullan (2020) emphasize the need for educators to adapt and enhance their digital competence, recognizing the transformative potential of technology in shaping the educational landscape. This shift requires a comprehensive exploration of how teachers' proficiency in utilizing digital tools influences communication accuracy and, consequently, the overall quality of education.

While the global perspective underscores the universality of this shift towards digitalization (Smith & Jones, 2018), the national and local contexts play pivotal roles in shaping the nuances of this phenomenon. In the Philippines, for instance, the Department of Education has actively advocated for the integration of digital tools (Chen & Wang, 2021), and this localized approach requires a closer examination of how communication accuracy is impacted within the Philippine educational framework.

The Philippine Education System has undergone significant changes since the implementation of the K-12 Basic Education program in 2013. While this reform aimed to provide learners with a more comprehensive education, it also brought forth numerous administrative challenges for schools. Efficient data management, streamlined communication, and improved operational efficiency have become critical areas that need attention and innovation. In this context, the role of technology in addressing these challenges is of utmost importance.

This study aims to examine the role of communication accuracy as influenced by the optimization of digital processes in addressing administrative challenges in schools within the Philippine K-12 Basic Education system.

Zooming further into a specific locale, such as Davao City, provides insights into the microcosm of challenges and opportunities that teachers face in optimizing digital processes (Brown & Miller, 2017). Understanding the local dynamics is crucial for tailoring strategies that enhance communication accuracy, considering factors like communication clarity, communication among staff, and timeliness of communication. Secondary schools face substantial data management challenges due to the increased volume and complexity of student information. Secondary schools need to handle vast amounts of student records, including personal information, academic performance, attendance, and disciplinary records. Manual management of these records can be time-consuming, prone to errors, and susceptible to data loss or inconsistencies.

In the secondary schools of Cluster 4 within the Davao City Division, there are persistent administrative challenges that hinder the efficient operation of schools. These challenges may include manual and time-consuming administrative processes, difficulties in data management, ineffective communication systems, and limited access to digital tools. To address these challenges, it is crucial to examine the construct influencing the process of digital optimization and its role in improving administrative efficiency in secondary schools.

This study focuses on Cluster 4 within the Davao City Division, which encompasses 11 secondary schools in the region. Davao City, located in the southern part of the Philippines, is known for its diverse educational landscape and vibrant educational initiatives. The Davao City Division is responsible for overseeing the administration and management of secondary schools within the city. Cluster 4 is selected as the setting for this study due to its unique characteristics and administrative challenges, making it an ideal context for examining process digital optimization.

The secondary schools within Cluster 4 vary in terms of student population, resources, and geographic locations. These schools serve a diverse student body and face common administrative challenges that impact their operational efficiency. The exploration of the construct influencing process digital optimization in this setting will provide insights into the factors that contribute to successful implementation and the potential barriers that need to be addressed.

By examining the setting of Cluster 4 within the Davao City Division, this study seeks to provide a comprehensive understanding of the administrative challenges faced by secondary schools in the region. It aims to identify the specific factors that influence the adoption and implementation of the optimization of digital processes in addressing these challenges.

## **II. Material And Methods**

The participants of this study will consist of administrators and teachers from 11 secondary schools in Cluster 4 of DepEd Davao City Division. To ensure representation from different schools within the cluster, a stratified random sampling technique will be used. The total number of school personnel who will be included as respondents in this study is 174.

**Study Design:** This study adopts a quantitative research design, aligning with the researcher's intent to rigorously examine theories in a postpositivist paradigm (Creswell & Creswell, 2018) it will be a mixture of descriptive, correlational, and predictive using multiple linear regression.

**Study Location:** 11 Secondary Schools in Cluster 4 of DepEd Davao City Division. Alambre National Agriculture High School, Baracayo Integrated School, Bartolome R. Luardo National High School, Bayabas Integrated School, Camansi National High School, Crossing Bayabas National High School, Gasco & Centina National High School, Ruferto F. Capulong National High School, San Isidro Integrated School, San Miguel Integrated School, Tungkalan National High School

**Study Duration:** September 2023 – December 2023

**Sample size:** 174 school personnel

**Sample size calculation:** The sample size was determined by using G\*Power using post hoc calculation to not only determine the sample size but also the probability of false positives and to fix the effect size to medium. It is particularly useful when dealing with large populations, as it helps researchers avoid the time-consuming and expensive task of surveying the entire population, ensuring a sufficient number of participants for robust data analysis.

**Subjects & selection method:** The study population was drawn from the 11 Secondary Schools in Cluster 4 of DepEd Davao City Division. Alambre National Agriculture High School (5), Baracayo Integrated School (5), Bartolome R. Luardo National High School (9), Bayabas Integrated School (5), Camansi National High School (7), Crossing Bayabas National High School (113), Gasco & Centina National High School (5), Ruferto F. Capulong National High School (5), San Isidro Integrated School (3), San Miguel Integrated School (9), Tungkalan National High School (8).

**Procedure methodology**

The research instrument for data collection will be a structured questionnaire. The questionnaire will include items that assess the variables of interest, such as digital communication tools, technology infrastructure, data management and integration, training and professional development, and integration with curriculum. It will consist of both closed-ended and Likert scale items to gather quantitative data on technology integration, data management, communication, and efficiency improvement. The questionnaire may include sections focusing on demographics, technology usage, perceptions of digital solutions, and challenges faced in the administrative processes.

In the process of interpreting its data, a five-point Likert Scale of the survey has five (5) as the highest and one (1) as the lowest. The scale with description and interpretation is shown below. The following five order gradations with their respective range of means and descriptions were considered based on the Constructs Influencing Process Digital Optimization variables:

Range	Descriptive Equivalent	Interpretation
4.50-5.00	Very Extensive	This means that respondents believe that the integration of technology has significantly improved administrative tasks and communication in secondary schools.
3.50-4.49	Extensive	This means that respondents acknowledge that technology has positively impacted administrative practices and communication accuracy.
2.50-3.49	Moderately Extensive	This means that respondents neither fully agree nor disagree with the effectiveness of technology integration in addressing administrative challenges.
1.50-2.49	Less Extensive	This means that respondents perceive that the use of technology has not brought substantial improvements to administrative efficiency and communication accuracy.
1.00-1.49	Not Extensive	This means that respondents believe that technology has not contributed to addressing administrative challenges or improving communication accuracy in secondary schools.

Range	Descriptive Equivalent	Interpretation
4.50-5.00	Very Extensive	This means that respondents perceive that information dissemination and exchange in secondary schools are highly precise, resulting in minimal misunderstandings.
3.50-4.49	Extensive	This means that respondents acknowledge that the level of accuracy in information sharing is generally effective, leading to few communication errors.
2.50-3.49	Moderately Extensive	This means that respondents neither strongly agree nor disagree with the accuracy of information sharing in the context of secondary schools.
1.50-2.49	Less Extensive	This means that respondents believe that there are notable inconsistencies or inaccuracies in information sharing, leading to communication challenges.
1.00-1.49	Not Extensive	This means that respondents perceive that information dissemination in secondary schools is highly inaccurate, resulting in frequent misunderstandings and inefficiencies.

**Statistical analysis**

The data analysis process in this quantitative research will provide valuable insights into the relationship between communication accuracy, digital process optimization, and administrative challenges. By using rigorous statistical methods, the researchers will gain a comprehensive understanding of the factors influencing communication efficiency and identify areas for improvement in secondary school administration. The findings will contribute to evidence-based decision-making, policy formulation, and professional development programs aimed at enhancing communication practices and addressing administrative challenges in the educational context.

**III. Result**

The study's findings and results regarding Communication Accuracy as Influenced by the Optimization of Digital Processes in Secondary Schools of Cluster 4 in DepEd Davao City Division are presented in this chapter. The data was analyzed and interpreted in detail to give readers and beneficiaries of the manuscript a thorough understanding.

The discussion of the results and interpretations were presented accordingly based on the statement of the problems. Presentation of the interpretation was arranged according to the sub-headings: The extent of optimization of digital processes in terms of digital communication tools, technology infrastructure, data

management, training and professional development and integration with the curriculum; the extent of communication accuracy in terms of communication clarity, communication among school staff, and timeliness; the relationship between the optimization of digital processes and the communication accuracy among secondary schools and the domains of optimization of digital processes that influence the communication accuracy of the secondary schools in Cluster 4, Division of Davao City.

**Extent of Optimization of Digital Processes**

Digital Communication Tools. Table 2 shows the data on the Extent of Optimization of Digital Processes in terms of Digital Communication Tools. As shown, the variables; communication through digital platforms (e.g., emails, and messaging apps) has improved the efficiency of information dissemination within the school(4.02), the school effectively utilizes Learning Management Systems (LMS) to support student learning and administrative tasks (4.01), the digital communication tools used in our school are user-friendly and easy to navigate (3.96), the school encourages and promotes the use of digital communication tools to enhance communication (3.96) and teachers and administrators receive adequate training on using digital communication tools effectively got an extensive rating. It got an overall mean rating of 3.98 or Extensive.

**Table 2. Extent of Optimization of Digital Processes in terms of Digital Communication Tools**

No	Statements	Mean	Descriptive Rating
1	The digital communication tools used in our school are user-friendly and easy to navigate.	3.96	Extensive
2	Communication through digital platforms (e.g., emails, and messaging apps) has improved the efficiency of information dissemination within the school.	4.02	Extensive
3	The school effectively utilizes Learning Management Systems (LMS) to support student learning and administrative tasks.	4.01	Extensive
4	Teachers and administrators receive adequate training on using digital communication tools effectively.	3.94	Extensive
5	The school encourages and promotes the use of digital communication tools to enhance communication.	3.96	Extensive
	<b>Overall Mean</b>	<b>3.98</b>	<b>Extensive</b>

In the contemporary educational landscape, the integration of digital communication tools has become not just a convenience but a necessity. The results of the study shed light on the perceptions and experiences of educators and administrators regarding the utilization of digital communication tools in schools within Cluster 4 of DepEd Davao City Division. These insights serve as a valuable resource for understanding the effectiveness of these tools and their influence on communication accuracy.

The survey results illuminate the overall positive perception and impact of digital communication tools in these educational institutions. User-friendly tools, improved information dissemination, effective use of LMS, adequate training, and the promotion of digital tools collectively contribute to a more streamlined and accurate communication environment.

These findings support the broader implications of the study, emphasizing the significance of optimizing digital processes and providing insights that reinforce the study's recommendations. They underscore the importance of schools continuing to invest in digital communication tools, not only to enhance communication accuracy but also to promote a culture of effective communication in educational settings.

Technology Infrastructure. Table 3 shows the data on the Extent of Optimization of Digital Processes in terms of Technology Infrastructure. As shown, the variables; the school's technology infrastructure (e.g., internet connectivity, and hardware) supports smooth digital processes. (4.07), our school has implemented security measures to safeguard digital information and data privacy (4.02), and the technology infrastructure adequately supports the data management needs of our school (4.02), adequate security measures are in place to protect sensitive information and data within the school's digital systems (3.99), and the school allocates sufficient resources for maintaining and upgrading technology infrastructure regularly (3.87) got an extensive rating. It got an overall mean rating of 3.99 or Extensive.

**Table 3. Extent of Optimization of Digital Processes in terms of Technology Infrastructure**

No	Statements	Mean	Descriptive Rating
1	The school's technology infrastructure (e.g., internet connectivity, and hardware) supports smooth digital processes.	4.07	Extensive
2	Adequate security measures are in place to protect sensitive information and data within the school's digital systems.	3.99	Extensive
3	The school allocates sufficient resources for maintaining and upgrading technology infrastructure regularly.	3.87	Extensive

4	Our school has implemented security measures to safeguard digital information and data privacy.	4.02	Extensive
5	The technology infrastructure adequately supports the data management needs of our school.	4.02	Extensive
	<b>Overall Mean</b>	<b>3.99</b>	<b>Extensive</b>

Table 3 provides insightful data regarding the Extent of Optimization of Digital Processes with a specific focus on Technology Infrastructure. The variables assessed encompass crucial aspects of the school's technological foundation, including internet connectivity, hardware, security measures, data management, and resource allocation. The results reveal a commendable level of optimization in various dimensions. The variable indicating that the school's technology infrastructure supports smooth digital processes received a high mean score of 4.07, earning it an "Extensive" descriptive rating. This suggests that the school has effectively established a technological foundation that facilitates seamless digital operations, contributing to a smooth and efficient workflow.

Furthermore, the implementation of security measures to safeguard digital information and ensure data privacy received a mean score of 4.02, also earning an "Extensive" descriptive rating. This underscores the school's commitment to ensuring the confidentiality and integrity of digital data, a critical consideration in the modern educational landscape where data security is paramount.

The technology infrastructure's ability to adequately support the data management needs of the school, with a mean score of 4.02, also received an "Extensive" rating. This indicates that the school has invested in infrastructure that can effectively handle data, reflecting a strategic approach to data management within the digital environment.

Although slightly lower, the mean scores for the variables indicating the presence of adequate security measures to protect sensitive information and data within the school's digital systems (3.99) and the allocation of sufficient resources for maintaining and upgrading technology infrastructure regularly (3.87) still earned them an "Extensive" rating. This suggests that while there may be room for improvement, the school has taken substantial steps to ensure the security of its digital systems and allocates resources for ongoing maintenance and upgrades.

The Overall Mean of 3.99 further reinforces the "Extensive" rating, signifying a robust level of optimization across the technology infrastructure dimensions. These results underscore the school's commitment to building and maintaining a secure, efficient, and well-supported technological foundation to enhance its digital processes. It is essential to consider the specific context and methodologies employed in the assessment for a more nuanced understanding and interpretation of these findings.

Data Management. Table 4 shows the data on the Extent of Optimization of Digital Processes in terms of Data Management. As shown, the variables; the school uses data-driven decision-making to enhance administrative practices and student learning outcomes (3.14), access to relevant student data (e.g., attendance, and academic performance) is readily available for teachers and administrators when needed (3.08), the data management system provides timely and accurate reports to support school improvement and accountability efforts (3.02), the school's data management system efficiently stores and organizes student records and administrative information (2.99), and the school's data management practices adhere to data privacy and security regulations, safeguarding sensitive information (2.98) got a moderately extensive rating. It got an overall mean rating of 3.04 or Moderately Extensive.

**Table 4. Extent of Optimization of Digital Processes in terms of Data Management**

No	Statements	Mean	Descriptive Rating
1	The school's data management system efficiently stores and organizes student records and administrative information.	2.99	Moderately Extensive
2	Access to relevant student data (e.g., attendance, and academic performance) is readily available for teachers and administrators when needed.	3.08	Moderately Extensive
3	The school's data management practices adhere to data privacy and security regulations, safeguarding sensitive information.	2.98	Moderately Extensive
4	The data management system provides timely and accurate reports to support school improvement and accountability efforts.	3.02	Moderately Extensive
5	The school uses data-driven decision-making to enhance administrative practices and student learning outcomes.	3.14	Moderately Extensive
	<b>Overall Mean</b>	<b>3.04</b>	<b>Moderately Extensive</b>

Table 4 presents a comprehensive overview of the Extent of Optimization of Digital Processes with a specific focus on Data Management within the school. The variables assessed encompass critical aspects of data utilization, accessibility, reporting, organization, and adherence to privacy regulations. The results indicate a

moderately extensive level of optimization across these dimensions. The variable related to the school's use of data-driven decision-making to enhance administrative practices and student learning outcomes received a mean score of 3.14, earning it a "Moderately Extensive" descriptive rating. This suggests that while the school is incorporating data into decision-making processes, there may be room for improvement in maximizing the impact of data on administrative practices and student learning outcomes.

Access to relevant student data, such as attendance and academic performance, received a mean score of 3.08, indicating a "Moderately Extensive" level of optimization. This suggests that while there is a degree of accessibility, improvements could be made to ensure that relevant student data is readily available for teachers and administrators when needed.

The data management system's ability to provide timely and accurate reports to support school improvement and accountability efforts received a mean score of 3.02, also earning a "Moderately Extensive" descriptive rating. This suggests that the school's data management system is functioning at a satisfactory level but may benefit from enhancements to ensure more timely and accurate reporting for school improvement initiatives.

The mean scores for variables indicating the efficiency of the school's data management system in storing and organizing student records and administrative information (2.99) and adherence to data privacy and security regulations, safeguarding sensitive information (2.98), both received a "Moderately Extensive" rating. These results suggest that while the school's data management practices are moderately effective, there is room for improvement in terms of organization and ensuring compliance with data privacy and security regulations.

The Overall Mean of 3.04 aligns with the "Moderately Extensive" rating, indicating a balanced level of optimization in the school's data management practices. These results highlight areas of strength and potential areas for improvement, providing valuable insights for refining digital processes related to data management within the school. As with any study, it is crucial to consider the specific context and methodologies employed in the assessment to interpret these findings accurately.

**Training and Professional Development.** Table 5 shows the data on the Extent of Optimization of Digital Processes in terms of Training and Professional Development. As shown, the variables; teachers receive adequate training and professional development opportunities to effectively utilize digital tools in their teaching practices (4.54), the school offers ongoing professional development opportunities to enhance digital skills (4.52), digital processes are seamlessly integrated into the school's curriculum, enhancing the overall learning experience for students (4.50), the integration of digital tools has improved the efficiency of administrative tasks, such as student records management and attendance tracking. (4.48), and the school encourages the faculty to share best practices in using digital tools for administrative tasks. (4.48) got a Very Extensive rating. It got an overall mean rating of 4.50 or Very Extensive.

**Table 5. Extent of Optimization of Digital Processes in terms of Training and Professional Development**

No	Statements	Mean	Descriptive Rating
1	Teachers receive adequate training and professional development opportunities to effectively utilize digital tools in their teaching practices.	4.54	Very Extensive
2	Digital processes are seamlessly integrated into the school's curriculum, enhancing the overall learning experience for students.	4.50	Very Extensive
3	The school offers ongoing professional development opportunities to enhance digital skills.	4.52	Very Extensive
4	The integration of digital tools has improved the efficiency of administrative tasks, such as student records management and attendance tracking.	4.48	Very Extensive
5	The school encourages the faculty to share best practices in using digital tools for administrative tasks.	4.48	Very Extensive
<b>Overall Mean</b>		<b>4.50</b>	<b>Very Extensive</b>

Table 5 provides a comprehensive view of the Extent of Optimization of Digital Processes with a specific focus on Training and Professional Development within the school. The variables assessed reflect critical aspects of teacher training, ongoing professional development, curriculum integration, and collaborative practices. The results indicate a very extensive level of optimization across these dimensions. The variable indicating that teachers receive adequate training and professional development opportunities to effectively utilize digital tools in their teaching practices received an exceptionally high mean score of 4.54, earning it a "Very Extensive" descriptive rating. This underscores the school's commitment to ensuring that educators are well-equipped with the necessary skills to integrate digital tools seamlessly into their teaching methodologies.

Additionally, the school's provision of ongoing professional development opportunities to enhance digital skills, with a mean score of 4.52, also received a "Very Extensive" rating. This indicates that the school

recognizes the dynamic nature of digital technologies and invests in continuous learning opportunities to keep faculty members abreast of the latest developments and best practices.

The integration of digital processes into the school's curriculum, enhancing the overall learning experience for students, received a mean score of 4.50, earning a "Very Extensive" descriptive rating. This result suggests a well-executed strategy to align digital tools with educational objectives, resulting in an enriched learning environment for students.

Furthermore, the mean scores for variables indicating that the integration of digital tools has improved the efficiency of administrative tasks, such as student records management and attendance tracking (4.48), and that the school encourages faculty to share best practices in using digital tools for administrative tasks (4.48), both received a "Very Extensive" rating. These results highlight the positive impact of digital integration not only on instructional practices but also on streamlining administrative processes within the school.

The Overall Mean of 4.50 further emphasizes the "Very Extensive" rating, signifying a comprehensive and highly effective approach to training and professional development in the realm of digital processes within the school. These results underscore the school's commitment to fostering a digitally competent and collaborative faculty, ultimately enhancing the overall educational experience for both educators and students. It is crucial to consider the specific context and methodologies employed in the assessment for a nuanced interpretation of these findings.

Integration with the Curriculum. Table 6 shows the data on the Extent of Optimization of Digital Processes in terms of Data Management. As shown, the variables; the curriculum includes explicit learning objectives related to digital literacy and technology skills development (4.54), the integration of digital tools in the curriculum enhances students' 21st-century skills, such as critical thinking and problem-solving (4.53), digital tools are effectively integrated into the curriculum to enhance student engagement and learning outcomes. (4.51), the school promotes project-based learning and collaborative activities that incorporate digital tools and technologies (4.50), and Teachers use digital resources and multimedia content to enrich classroom instruction and facilitate active learning (4.45) got a Very Extensive rating. It got an overall mean rating of 4.50 or Very Extensive.

**Table 6. Extent of Optimization of Digital Processes in terms of Integration with the Curriculum**

No	Statements	Mean	Descriptive Rating
1	Digital tools are effectively integrated into the curriculum to enhance student engagement and learning outcomes.	4.51	Very Extensive
2	The curriculum includes explicit learning objectives related to digital literacy and technology skills development.	4.54	Very Extensive
3	Teachers use digital resources and multimedia content to enrich classroom instruction and facilitate active learning.	4.45	Very Extensive
4	The school promotes project-based learning and collaborative activities that incorporate digital tools and technologies.	4.50	Very Extensive
5	The integration of digital tools in the curriculum enhances students' 21st-century skills, such as critical thinking and problem-solving.	4.53	Very Extensive
	<b>Overall Mean</b>	<b>4.50</b>	<b>Very Extensive</b>

Table 6 presents a comprehensive view of the Extent of Optimization of Digital Processes, specifically focusing on Integration with the Curriculum within the school. The variables assessed encompass critical dimensions such as learning objectives, skills development, student engagement, project-based learning, and instructional practices. The results reveal an exceptionally high level of optimization across these curriculum integration aspects, earning an overall mean rating of 4.50 and a "Very Extensive" descriptive rating.

The variable indicating that the curriculum includes explicit learning objectives related to digital literacy and technology skills development received a remarkably high mean score of 4.54, emphasizing the school's commitment to integrating essential digital skills into the educational framework. This underscores the recognition of the importance of digital literacy in preparing students for the demands of the 21st century.

Furthermore, the integration of digital tools into the curriculum is reported to enhance students' 21st-century skills, such as critical thinking and problem-solving, with a mean score of 4.53, earning a "Very Extensive" descriptive rating. This suggests a deliberate effort to align digital tools with the development of key competencies crucial for students' success in a rapidly evolving digital landscape.

Digital tools are reported to be effectively integrated into the curriculum to enhance student engagement and learning outcomes, with a mean score of 4.51 and a "Very Extensive" rating. This result indicates that the school has successfully created a learning environment where technology catalyzes enhanced engagement and improved learning outcomes.

Moreover, the promotion of project-based learning and collaborative activities that incorporate digital tools and technologies received a mean score of 4.50, earning a "Very Extensive" descriptive rating. This

highlights the school's recognition of the value of hands-on, collaborative experiences enriched by the integration of digital tools, contributing to a holistic and dynamic learning approach.

The variable indicating that teachers use digital resources and multimedia content to enrich classroom instruction and facilitate active learning received a mean score of 4.45, further contributing to the overall "Very Extensive" rating. This suggests that educators actively leverage digital resources to create engaging and interactive learning experiences for students.

In summary, the Overall Mean of 4.50 reflects a consistent and highly effective approach to the integration of digital processes with the curriculum. These results underscore the school's commitment to preparing students with the necessary digital skills and fostering a learning environment that aligns with the demands of the 21st century.

Summary of the Level of Optimization of Digital Processes. Table 7 shows the data on the Summary of the Level of Optimization of Digital Processes. As shown, the variables; Digital Communication Tools (DCT) (3.99), Technology Infrastructure (TT) (3.99), Data Management and Integration (DMT) (3.04), Training and Professional Development (ICT) (4.50), and Integration with Curriculum (ET) (4.50). It got an overall mean rating of 4.01 or Extensive.

**Table 7. Summary of the Level of Optimization of Digital Processes**

No	Variables	Mean	Descriptive Rating
1	Digital Communication Tools (DCT)	3.99	Extensive
2	Technology Infrastructure (TT)	3.99	Extensive
3	Data Management and Integration (DMT)	3.04	Moderately Extensive
4	Training and Professional Development (ICT)	4.50	Very Extensive
5	Integration with Curriculum (ET)	4.50	Very Extensive
	<b>Overall Mean</b>	<b>4.01</b>	<b>Extensive</b>

Table 7 presents the summary of the level of Optimization of Digital Processes with means that range from 3.04 to 4.504 and an overall mean of 4.00 or qualitatively described as high. The results presented in Table 7 offer a comprehensive overview of the level of optimization of digital processes within the context of various indicators. The mean scores provide a numerical representation of the extent to which each indicator has been optimized, accompanied by descriptive ratings to facilitate a clearer understanding of the findings.

Digital Communication Tools (DCT) and Technology Infrastructure (TT) emerge as the highest-scoring indicators, both with a mean score of 3.99, indicating an extensive level of optimization. This suggests a robust foundation in terms of digital communication tools and technology infrastructure, showcasing a commitment to leveraging these elements for efficient and effective processes. The high scores in these categories are indicative of a technologically advanced environment, potentially fostering seamless communication and a solid technological backbone.

Data Management and Integration (DMT) lags slightly behind with a mean score of 3.04, signaling a moderately extensive level of optimization. While not reaching the same level as communication tools and technology infrastructure, the organization still demonstrates a noteworthy commitment to managing and integrating data, albeit with room for improvement.

Training and Professional Development (ICT) and Integration with Curriculum (ET) both stand out with impressive mean scores of 4.50 each, categorizing them as very extensive in terms of optimization. These high scores suggest a strong emphasis on training initiatives and the integration of digital processes into the overall curriculum. The schools are dedicated to ensuring that their workforce is well-equipped with the necessary skills and that digital processes are seamlessly woven into the fabric of educational practices.

The Overall Mean of 4.01 further underscores the schools' commitment to digital optimization, classifying the overall level of optimization as extensive. This holistic view consolidates the individual indicators, affirming a comprehensive and robust approach to digital processes within the organization.

#### Extend of Communication Accuracy

Communication Clarity. Table 8 shows the data on the Extent of Communication Accuracy in terms of Communication Clarity. As shown, the variables; important announcements, and information are communicated clearly to all stakeholders through digital channels (4.50), communication between school administrators and teachers is easily understood and free from ambiguous language (4.54), there is a consistent and effective system in place to ensure that messages are accurately delivered to the intended recipients. (4.45), the school uses multilingual communication strategies to cater to the diverse linguistic backgrounds of students and parents (4.50), and teachers regularly provide feedback to students clearly and constructively, promoting a better understanding of their progress (4.53). It got an overall mean rating of 4.50 or Very Extensive.



**Table 8. Extent of Communication Accuracy in terms of Communication Clarity**

No.	Statements	Mean	Descriptive Rating
1	Important announcements and information are communicated clearly to all stakeholders through digital channels.	4.50	Very Extensive
2	Communication between school administrators and teachers is easily understood and free from ambiguous language.	4.54	Very Extensive
3	There is a consistent and effective system in place to ensure that messages are accurately delivered to the intended recipients.	4.45	Very Extensive
4	The school uses multilingual communication strategies to cater to the diverse linguistic backgrounds of students and parents.	4.50	Very Extensive
5	Teachers regularly provide feedback to students clearly and constructively, promoting a better understanding of their progress.	4.53	Very Extensive
	<b>Overall Mean</b>	<b>4.50</b>	<b>Very Extensive</b>

Table 8 provides a comprehensive analysis of the Extent of Communication Accuracy, specifically focusing on Communication Clarity within the school. The variables assessed cover crucial aspects of communication between stakeholders, including the clarity of important announcements, communication between administrators and teachers, system effectiveness, multilingual strategies, and teacher feedback. The results reveal an exceptionally high level of optimization across these communication clarity dimensions, with an overall mean rating of 4.50 and a "Very Extensive" descriptive rating.

The variable indicating that important announcements and information are communicated clearly to all stakeholders through digital channels received a remarkably high mean score of 4.50, highlighting the school's commitment to transparent and effective communication with its community. This reflects an understanding of the importance of clear and accessible communication in keeping stakeholders informed and engaged.

Communication between school administrators and teachers is reported to be easily understood and free from ambiguous language, receiving a mean score of 4.54 and a "Very Extensive" rating. This result suggests a well-established communication structure that fosters clarity and understanding between key stakeholders within the school community.

The variable indicating the existence of a consistent and effective system to ensure that messages are accurately delivered to the intended recipients received a mean score of 4.45 and a "Very Extensive" descriptive rating. This result suggests that the school has implemented reliable mechanisms to prevent miscommunication and ensure that messages reach their intended audiences accurately and promptly.

Furthermore, the school's use of multilingual communication strategies to cater to the diverse linguistic backgrounds of students and parents received a mean score of 4.50, earning a "Very Extensive" descriptive rating. This highlights the school's commitment to inclusivity and recognizing the importance of effective communication across diverse linguistic communities within the school.

The variable indicating that teachers regularly provide feedback to students clearly and constructively, promoting a better understanding of their progress, received a mean score of 4.53, contributing to the overall "Very Extensive" rating. This result suggests that the school emphasizes the importance of clear feedback as a means to enhance student understanding and progress.

In summary, the Overall Mean of 4.50 underscores a consistent and highly effective approach to communication clarity within the school. These results highlight the school's commitment to transparent, unambiguous, and inclusive communication practices that contribute to a positive and informed school community. As with any study, it is essential to consider the specific context and methodologies employed in the assessment for a nuanced interpretation of these findings.

Communication Among School Staff. Table 9 shows the data on the Extent of Communication Accuracy in terms of Communication Among School Staff. As shown, the variables; communication among school staff (e.g., administrators, and teachers) is clear, concise, and effectively conveys the necessary information. (3.96), the use of digital communication tools (e.g., emails, and messaging apps) enhances the accuracy of information exchanged among school staff (4.02), School staff promptly respond to communication requests, ensuring timely follow-ups and resolution of administrative matters (4.01), communication channels are well-established and easily accessible, promoting effective and efficient communication among school staff (3.94), and the school fosters a collaborative and communicative culture among staff members, contributing to improved communication accuracy (4.05). It got an overall mean rating of 3.99 or Extensive.

**Table 9. Extent of Communication Accuracy in Terms of Communication Among School Staff**

No.	Statements	Mean	Descriptive Equivalent
1	Communication among school staff (e.g., administrators, and teachers) is clear, concise, and effectively conveys the necessary information.	3.96	Extensive
2	The use of digital communication tools (e.g., emails, and messaging apps) enhances the accuracy of information exchanged among school staff.	4.02	Extensive
3	School staff promptly respond to communication requests, ensuring timely follow-ups and resolution of administrative matters.	4.01	Extensive
4	Communication channels are well-established and easily accessible, promoting effective and efficient communication among school staff.	3.94	Extensive
5	The school fosters a collaborative and communicative culture among staff members, contributing to improved communication accuracy.	4.05	Extensive
<b>Overall Mean</b>		<b>3.99</b>	<b>Extensive</b>

Table 9 provides a detailed analysis of the Extent of Communication Accuracy, specifically focusing on Communication Among School Staff. The variables assessed encompass critical dimensions of communication clarity, digital tools utilization, responsiveness, channel accessibility, and the overall culture of collaboration among staff members. The results reveal a high level of optimization across these communication dimensions, with an overall mean rating of 3.99 and an "Extensive" descriptive rating.

The variable indicating that communication among school staff, including administrators and teachers, is clear, concise, and effectively conveys necessary information received a mean score of 3.96, contributing to the overall "Extensive" rating. This suggests that the school has established effective communication practices among its staff members, fostering clarity and understanding in the exchange of information.

The use of digital communication tools, such as emails and messaging apps, is reported to enhance the accuracy of information exchanged among school staff, receiving a mean score of 4.02 and earning an "Extensive" descriptive rating. This result suggests that the integration of digital tools has positively contributed to the precision and efficiency of communication within the school staff.

The school staff's prompt response to communication requests, ensuring timely follow-ups and resolution of administrative matters, received a mean score of 4.01, further contributing to the "Extensive" rating. This indicates that the school values responsiveness, ensuring that communication is not only clear but also prompt and effective in addressing administrative needs.

The variable indicating that communication channels are well-established and easily accessible, promoting effective and efficient communication among school staff, received a mean score of 3.94. This result, while slightly lower, still contributes to the overall "Extensive" rating, emphasizing the importance of accessible communication channels in fostering effective staff communication.

Furthermore, the school's fostering of a collaborative and communicative culture among staff members, contributing to improved communication accuracy, received a mean score of 4.05, emphasizing the significance of a positive workplace culture in enhancing communication effectiveness. This result suggests that the school recognizes the role of collaboration and communication in creating a cohesive and supportive staff environment.

In summary, the Overall Mean of 3.99 underscores a high level of optimization in communication among school staff. These results highlight the school's commitment to clear, efficient, and collaborative communication practices, facilitated by the use of digital tools and a positive organizational culture.

**Timeliness of Communication.** Table 10 shows the data on the Extent of Communication Accuracy in terms of Timeliness of Communication. As shown, the variables; school announcements, and updates are promptly communicated to stakeholders (4.42), teachers respond to students' inquiries and concerns promptly, fostering a supportive learning environment (4.18), important dates and deadlines related to school events and activities are communicated well in advance to all stakeholders (4.48), the school administration promptly addresses issues raised by students, parents, and staff members. (4.15), and Parents receive timely updates on their children's academic performance and school-related matters (4.01). It got an overall mean rating of 4.25 or Extensive.

**Table 10. Extent of Communication Accuracy in terms of Timeliness of Communication.**

No.	Statements	Mean	Descriptive Rating
1	School announcements and updates are promptly communicated to stakeholders.	4.42	Extensive
2	Teachers respond to students' inquiries and concerns promptly, fostering a supportive learning environment.	4.18	Extensive

3	Important dates and deadlines related to school events and activities are communicated well in advance to all stakeholders.	4.48	Very Extensive
4	The school administration promptly addresses issues raised by students, parents, and staff members.	4.15	Extensive
5	Parents receive timely updates on their children's academic performance and school-related matters.	4.01	Extensive
	<b>Overall Mean</b>	<b>4.25</b>	<b>Extensive</b>

Table 10 presents a comprehensive analysis of the Extent of Communication Accuracy, specifically focusing on the Timeliness of Communication within the school. The variables assessed cover critical dimensions such as the promptness of school announcements, teacher responsiveness, advance communication of important dates, timely issue resolution by the administration, and updates for parents on academic performance. The results indicate a high level of optimization across these timeliness dimensions, with an overall mean rating of 4.25 and an "Extensive" descriptive rating.

The variable indicating that school announcements and updates are promptly communicated to stakeholders received a notably high mean score of 4.42, contributing significantly to the overall "Extensive" rating. This suggests that the school places a strong emphasis on timely communication with stakeholders, ensuring that important information is disseminated promptly.

Teachers' responsiveness to students' inquiries and concerns, fostering a supportive learning environment, received a mean score of 4.18. While slightly lower, this still contributes to the overall "Extensive" rating, indicating that the school values prompt and supportive communication between teachers and students.

The communication of important dates and deadlines related to school events and activities in advance to all stakeholders received a mean score of 4.48, earning an "Extensive" descriptive rating. This emphasizes the school's commitment to providing ample notice and ensuring that stakeholders are well-informed about upcoming events, contributing to a smooth and organized school calendar.

The school administration's prompt addressing of issues raised by students, parents, and staff members received a mean score of 4.15, further contributing to the "Extensive" rating. This suggests that the school is responsive to concerns and takes timely actions to address and resolve issues, fostering a positive and supportive school environment.

Furthermore, parents receiving timely updates on their children's academic performance and school-related matters received a mean score of 4.01. While slightly lower than other variables, this result still contributes to the overall "Extensive" rating, indicating the school's commitment to keeping parents well-informed about their children's progress and relevant school matters.

In summary, the Overall Mean of 4.25 underscores a high level of optimization in the timeliness of communication within the school. These results highlight the school's commitment to prompt and effective communication across various stakeholders, contributing to a well-informed and supportive school community. As with any study, it is essential to consider the specific context and methodologies employed in the assessment for a nuanced interpretation of these findings.

Summary of the Level of Communication Accuracy. Table 11 shows the data on the Summary of the Level of Communication Accuracy. As shown, the variables are Communication Clarity (4.50), Communication with staff (3.99), and Timeliness of Communication (4.25). It got an overall mean rating of 4.25 or Extensive.

**Table 11 Summary of the Level of Communication Accuracy**

No.	Indicator	Mean	Descriptive Rating
1	Communication Clarity	4.50	Very Extensive
2	Communication with staff	3.99	Extensive
3	Timeliness of Communication	4.25	Extensive
	<b>Overall Mean</b>	<b>4.25</b>	<b>Extensive</b>

Table 11 provides a consolidated view of the Summary of the Level of Communication Accuracy within the school, encompassing three key variables: Communication Clarity, Communication with Staff, and Timeliness of Communication. The results indicate a high level of optimization across these dimensions, with an overall mean rating of 4.25, reflecting an "Extensive" level of communication accuracy within the school.

The variable Communication Clarity received an exceptionally high mean score of 4.50, emphasizing the school's commitment to clear, concise, and effective communication practices among stakeholders. This suggests that the school places a significant emphasis on ensuring that information is communicated transparently and comprehensibly, contributing to a positive and well-informed school community.

Communication with Staff, as reflected by the variable in the summary, received a mean score of 3.99, contributing to the overall "Extensive" rating. This suggests that while there is room for improvement in

communication among staff members, the school has established effective communication practices, fostering clarity, collaboration, and understanding among administrators and teachers.

Timeliness of Communication, the third variable in the summary, received a mean score of 4.25, further contributing to the overall "Extensive" rating. This indicates that the school places a strong emphasis on ensuring that announcements, updates, and issue resolutions are communicated promptly to various stakeholders, contributing to an organized and well-informed school environment.

In summary, the Overall Mean of 4.25 underscores a high level of optimization in the overall communication accuracy within the school. These results highlight the school's commitment to clarity, timeliness, and effective communication practices, contributing to a positive and well-coordinated school community.

A Pearson product-moment correlation was run to find out the significance, magnitude, and direction of the relationship between CA and ODP. Results show that CA and ODP were found to have a significantly high Positive Correlation,  $r(205) = .726$ .  $p < .001$ .

**Table 12. The significant relationship between the Optimization of Digital Processes and Communication Accuracy.**

Variable		CA_Total	ODP
1. CA_Total	Pearson's r	—	—
	p-value	—	—
2. ODP	Pearson's r	0.726***	—
	p-value	< .001	—
* $p < .05$ , ** $p < .01$ , *** $p < .001$			

Table 12 explores the significant relationship between the Optimization of Digital Processes (ODP) and Communication Accuracy (CA). Pearson's correlation coefficients and p-values are presented for both variables. The results reveal a strong and statistically significant positive relationship between the Optimization of Digital Processes and Communication Accuracy.

Pearson's correlation coefficient between ODP and CA\_Total is reported as 0.726, indicating a high positive correlation between the two variables. This suggests that as the Optimization of Digital Processes increases, there is a corresponding increase in Communication Accuracy within the school. The positive direction of the correlation coefficient implies that schools with more optimized digital processes tend to exhibit higher levels of communication accuracy.

The associated p-value for the correlation between ODP and CA is reported as  $< .001$ , indicating that the observed correlation is statistically significant at a very high level of confidence. The p-value is less than the conventional significance level of 0.05, providing strong evidence against the null hypothesis and supporting the conclusion that there is a significant relationship between Optimization of Digital Processes and Communication Accuracy.

In summary, the results from Table 12 suggest a robust and highly significant positive correlation between the Optimization of Digital Processes and Communication Accuracy within the school context. These findings highlight the interconnectedness of effective digital processes and accurate communication, emphasizing the importance of a holistic and well-integrated approach to technology implementation in enhancing communication practices within educational institutions. As with any statistical analysis, it is crucial to consider the specific context and potential confounding variables that may influence the observed relationship.

**Multiple Linear Regression**

Featured in Table 12 are the results of the regression analysis that tests the significant influence of the different domains of Optimization of Digital Processes on Communication Accuracy. The computed overall F-value of 87.696 and p-value  $< .000$  which is less than 0.01 or significant. Further, the computed R-squared value of .687 as shown in Table 4 signifies that the measures of Optimization of Digital Processes involved in this study influence the Communication Accuracy of students by 68.7 % and 31.3% of the variance could be credited to other factors not covered in this study. It is also worth noting that the model is a significant improvement over the null with an ANOVA significance of  $< .001$ .

### Regression Analysis Results

Table 13 displays the results of the regression analysis, which assessed the influence of various domains of Optimization of Digital Processes on Communication Accuracy. The analysis revealed several key findings:

The computed overall F-value of 87.69 suggests that the regression model is statistically significant. Additionally, the associated p-value is less than 0.01, indicating a high level of significance. This implies that there is a strong relationship between the Optimization of Digital Processes and Communication Accuracy.

The R-squared value of 0.687, as shown in Table 3, indicates that approximately 68.7% of the variance in Communication Accuracy can be explained by the measures of Optimization of Digital Processes included in this study. This substantial R-squared value underscores the importance of the Optimization of Digital Processes in predicting Communication Accuracy among students.

It is important to acknowledge that 31.3% of the variance in Communication Accuracy cannot be accounted for by the factors examined in this study. This suggests that there may be other influential factors not covered by our research that affect Communication Accuracy among students. Future studies may explore these additional factors to provide a more comprehensive understanding.

The model demonstrates a significant improvement over the null model, as evidenced by an ANOVA significance of less than 0.001. This further strengthens the argument that the domains of Optimization of Digital Processes have a significant impact on Communication Accuracy.

### Implications and Interpretation

The findings from this regression analysis have several important implications. Firstly, they highlight the critical role of the Optimization of Digital Processes in enhancing Communication Accuracy among students. This suggests that efforts to improve students' digital process optimization skills could lead to better communication outcomes.

Secondly, the unexplained variance of 31.3% suggests that other factors, not considered in this study, may also contribute to Communication Accuracy. Researchers and educators should investigate these additional factors to gain a more comprehensive understanding of the determinants of Communication Accuracy.

The results of this regression analysis support the hypothesis that the domains of Optimization of Digital Processes significantly influence Communication Accuracy among students. This study contributes to our understanding of the relationship between digital process optimization and communication skills and provides a basis for further research and educational interventions in this area.

Data further show as seen in Table 6 that the DCT has a t-value of 13.460 with a p-value of < .001 or significant (implication), TT has a t-value of 12.175 or p-value of < .001 or significant (implication), DMT has t-value of .730 with a p-value of 0.466 or insignificant, ICT has t-value of 5.501 with a p-value of < .001 or significant (implication), and ET has t-value of 9.196 with p-value of < 0.001 or significant. Therefore, it could be inferred that Digital Communication Tools, Technology Infrastructure, Data Management and Integration, Training and Professional Development, and Integration with Curriculum are the factors that best influence the Communication Accuracy of Teachers in Cluster 4 of DepEd Davao City Division.

### Individual Factor Analysis

Digital Communication Tools (DCT). The factor DCT demonstrates a highly significant influence with a t-value of 13.460 and a p-value of < 0.001. This suggests that the utilization of digital communication tools is a substantial contributor to enhancing Communication Accuracy among teachers in Cluster 4.

Technology Infrastructure (TT). Similarly, the factor TT exhibits a strong and statistically significant influence with a t-value of 12.175 and a p-value of < 0.001. This underscores the importance of having a robust technological infrastructure in place to support effective communication among teachers.

Data Management and Integration (DMT). In contrast, the factor DMT shows a t-value of 0.730 and a p-value of 0.466, indicating that it does not have a significant influence on Communication Accuracy among teachers in this cluster. This implies that the way data is managed and integrated may not be a primary driver of communication accuracy in this context.

Training and Professional Development (ICT). The factor ICT demonstrates a substantial impact on Communication Accuracy, as evidenced by a t-value of 5.501 and a p-value of < 0.001. This implies that providing training and opportunities for professional development in the context of digital communication can greatly enhance communication accuracy.

Integration with Curriculum (ET). Lastly, the factor ET also shows a significant influence on Communication Accuracy, with a t-value of 9.196 and a p-value of < 0.001. This suggests that integrating digital communication strategies into the curriculum is an effective means of improving Communication Accuracy among teachers.

#### **IV. Conclusion**

The results of this study suggest that the optimization of digital processes in addressing administrative challenges in secondary schools of Cluster 4 in DepEd Davao City Division has a positive impact on communication accuracy. The mean score for communication accuracy is 4.50, which is well above the neutral score of 3.0. This suggests that the schools in this cluster are using digital processes effectively to communicate with stakeholders.

There are several ways that digital processes can improve communication accuracy. First, they can help to streamline communication and make it more efficient. This can reduce the likelihood of errors and omissions. Second, digital processes can provide a central repository for communication, which can make it easier for stakeholders to access the information they need. Third, digital processes can help to automate tasks, which can free up staff to focus on more complex and strategic work.

The findings of this study have many implications for practice. First, schools should continue to invest in digital processes to address administrative challenges. This will help to improve communication accuracy and other aspects of school operations. Second, schools should provide staff with training on how to use digital processes effectively. This will help to ensure that staff can use these processes to their full potential. Third, schools should monitor and evaluate the impact of digital processes on communication accuracy and other outcomes. This will help to ensure that schools are getting the most out of their investment in digital processes.

Overall, the findings of this study suggest that the optimization of digital processes in addressing administrative challenges has a positive impact on communication accuracy in secondary schools. This has some implications for practice, including the need for schools to continue to invest in digital processes, provide staff with training, and monitor and evaluate the impact of these processes.

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