



**IMPLEMENTATION OF INFORMATION AND COMMUNICATION
TECHNOLOGY (ICT) PROGRAM IN PUBLIC
ELEMENTARY SCHOOLS**

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ABSTRACT

Information Communication Technology (ICT) becomes an essential component of the pedagogical processes of the education system. It provides a dynamic and proactive teaching-learning environment and increases the quality, of the delivery of instruction to students. Accordingly, the researcher believes in the significance of enhancing the ICT implementation program, providing ideas for utilizing modern technologies in teaching and learning, and aiding them with a revitalized management plan. This study aimed to determine the extent of implementation of the school ICT program as assessed by the coordinators and teachers. Moreover, it covered the differences in assessments of implementation by the two groups of respondents. The study employed a descriptive method of research.

Furthermore, the study tackled the implementation of Information Technology (ICT) Program in the public elementary schools. It emphasized the significance of utilizing different tools and resources to ensure ICT improvement and innovations in schools' practices. With this, the study came up with a revitalized management plan to provide both the coordinators and teachers with venues for ICT skills development and suggested strategies and activities.

Keywords: *ICT Program, Issues and Challenges, Innovative Practices, Revitalized Management Plan*

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1. INTRODUCTION

Information and Communication Technology (ICT) has become an essential component of modern education, transforming how students learn and teachers teach. The modern era's rapid technological development has had an impact on many aspects of life. The advent of ICT had far-reaching consequences in all fields of endeavor, including business, governance, and education. It demanded a modern society, which resulted in remarkable changes in the twenty-first century.

The availability of convenient access to technology has greatly improved today's education system, which is supported by the government in integrating technology into the teaching and learning process in the classroom. ICT utilization becomes an essential component of pedagogical processes that optimize learning. Also, it provides a dynamic and proactive teaching-learning environment and increases the quality, accessibility, and cost-efficiency of the delivery of instruction to students (Abdullah et al., 2017).

As a result, the significance of this program became evident in various ways, where it assisted both teachers and students to learn about their respective subject areas. As a matter of fact, technology-based teaching and learning introduced the application of educational videos, music, the World Wide Web (www), and other approaches such as mind mapping, guided discovery learning, and brainstorming to provide meaningful and effective classroom instruction (Ghavifekr & Rosdy, 2015). not only important as a learning course, but also the materials such as software and multimedia were used to supplement instruction (Bonifacio, 2013). As a result, it supported the teachers in performing the daily tasks. As a matter of fact, it assisted the teachers in preparing the lessons, organizing classroom activities, and producing innovative instructional materials.

In addition, many teachers deemed the significance of ICT tools because they guided the students in accomplishing the learning tasks and assignments and assisted the students with

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special needs or difficulties. Likewise, students developed a collaborative and independent type of learning. Furthermore, the positive impact of this in the teaching and learning process was evident in the academic performance of the students.

In consonance with this, the key policies of the Department of Education (DepED) in the Philippines highlighted the integration of ICT in the curriculum. It was given emphasis as it is part of the goal of the government, where everyone can create, access, utilize, and share information and knowledge (Kubota, et. al., 2018). This initiative was reinforced with the formulation of the Department of Information and Communication Technology (DICT), a government agency that was responsible for supporting national development using ICT and for planning and implementing it in the country.

According to a survey conducted by the Philippine-based Foundation for Information Technology for Education and Development (FIT-ED), only a small percentage of schools have Internet access; less than ten percent of schools have computers with Internet access available for teacher use; and a large number of schools have computers with Internet access available for student use. Furthermore, a Department of Science and Technology (DOST) survey revealed that access to information technology varies from a low to a percentage range across the country's various regions.

In order to uplift the performance of Philippine basic education and promote effective utilization of TH, DepED launched the National Strategic Planning Initiative for ICTs in Basic Education. This initiative executed the appropriate strategies for integrating this program in education using the technology-based teaching and learning process (Sarker, et al., 2019).

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The DepED Order No. 78 series of 2010, and the DepED Computerization Program (DCP), mandated by the agency, provided adequate technology to public schools in order to improve the teacher-learning process and meet the challenges of the twenty-first century. This program addresses the computer backlog in public schools by providing hardware and software as well as training in basic troubleshooting techniques. This stand as a crucial guideline for the integration of ICT in Philippine schools, highlighting the need for technological infrastructure, teacher training, and curriculum development in order to effectively harness the potential of I in education.

Similarly, strategic planning for education plays a pivotal role in defining the goals and objectives of educational initiatives, including the integration of ICT. However, the strict implementation of these programs has encountered numerous challenges, hindering their full realization. In addition to the DepED order, strategic planning for education has also been emphasized to enhance the integration of ICT in schools. Strategic planning provides a roadmap for educational institutions to leverage the program effectively, aligning it with their goals and objectives.

Therefore, the status of ICT program implementation in the Philippines remained unstable because of several problems and barriers. As a matter of fact, DepED encountered several issues and challenges in sustaining innovative education in the country. In this connection, Mirzajani, et al. (2016) emphasized that lack of administrative, financial, and technical support among schools with these programs has become an ongoing problem.

In consonance with this, the program was introduced with the aim of ensuring that every student gains essential competencies by the time they complete their basic education. It outlines the guidelines and framework for integrating the teaching and learning processes, curriculum development, and teacher training. While this order provided a clear direction for incorporating ICT in education, its full implementation remains a challenge in many schools. The reasons for this gap can be attributed to various factors, such as limited resources, inadequate infrastructure, and a lack of comprehensive training programs for teachers.

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One key stakeholder in the implementation of ICT in schools is the coordinator, who is responsible for overseeing the integration of technology, providing technical support, and facilitating professional development for teachers. The experiences and problems faced by these coordinators shed light on the gaps in the implementation of ICT initiatives. These challenges can range from inadequate funding for technological infrastructure, limited access to updated software and hardware, insufficient training opportunities for teachers, and a lack of support from school administration.

Through an in-depth exploration of the barriers encountered by ICT coordinators, this research aims to provide valuable recommendations and potential solutions to enhance the implementation of ICT initiatives in Philippine schools. By addressing these gaps, we can foster an environment that embraces technology as a catalyst for educational advancement, empowering students and educators alike in the digital age. Similarly, Dotong, et al. (2016) revealed challenges like inadequate financial support and infrastructure, fund and management support, and behavioral and environmental aspects. Likewise, teachers limited digital literacy and lacked motivation and interest (Alhandi, 2014). Meanwhile, Kubota et al. (2018) revealed that teachers had limited learning opportunities for training and inadequate technical support staff.

To mitigate the problem and different forms of issues and challenges, the organization implemented immediate change and innovation (Wajdi et al., 2020; Carvalho, et al., 2020). Both teachers' qualifications and school practices for using digital devices and the availability of technological resources need improvement (UNESCO, 2020). Therefore, Almalki and Williams (2012) insisted on giving priority to areas of improvement such as ICT training, local, technical, and administrative support, teacher confidence, and competence.

Similarly, developing ICT implementation in Area 1 of Batangas Province was very timely and relevant now, as technology has become increasingly important in students' lives. The current situation indicates the need for whatever resources are available to carry out the implementation that is appropriate, effective, and sustainable.

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This paper highlighted the extent of implementation of the school ICT program. It identified the issues and challenges in the implementation of this program. Likewise, it would ascertain the schools' innovative practices and it would pave the way for an effective management plan for the institution.

In light of this, the research's significance was also dependent on the advantages it might provide for the school, as it would enhance the ICT implementation program. Similarly, it would improve the program' utilization methodologies and practices. It would also offer more sources as well as sufficient concepts and ideas for ICT management.

Bearing these thoughts in mind, the researcher felt deeply motivated to pursue determining the implementation of the ICT program in public elementary schools. The output of this study was a revitalized management plan. It would be employed as a tool in enhancing the implementation of this program, overcoming issues and challenges, and discovering technological tools and innovative practices.

2. OBJECTIVES

This study aimed to assess the implementation of the Information and Communication Technology (ICT) program in public elementary schools. Specifically, this study sought to satisfy the following objectives which were to:

1. Determine the extent of implementation of the school ICT program as assessed by the coordinators and teachers themselves relative to:
 - 1.1. goals and objectives;
 - 1.2. learning resources;
 - 1.3. human resources;
 - 1.4. learning environment;
 - 1.5. learning standards;

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- 1.6. learner's achievement; and
- 1.7. physical resources;
2. Find out the difference on the extent of implementation of the school ICT program as assessed by the two groups of respondents;
3. Identify the issues and challenges in the implementation of ICT program;
4. Ascertain the schools' innovative practices in the implementation of schools' ICT program;
5. Prepare revitalized management plan for public elementary schools' ICT program.

3. METHODOLOGY

The descriptive method of research was utilized in the study. The respondents were 296 ICT teachers and 44 school ICT coordinators with the total number of 340 sample respondents out of 485 populations from Area1. The researcher used stratified random sampling to get the sample respondents and Slovin's formula was applied to identify the sample size and used the simple random sampling.

Moreover, a researcher-made survey-questionnaire was utilized as main data-gathering instrument. The data collected were then submitted to the statistician for treatment after which the data were interpreted. The researcher also conducted reliability test and used computation of Cronbach's alpha to get reliability index. Additionally, a Focus Group Discussion (FGD) was conducted.

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4. RESULTS AND DISCUSSION

4.1 Extent of Implementation of the School's ICT Program

Table 2. Goals and Objectives

Items	Coordinators		Teachers	
	WM	VI	WM	VI
Establish safe and accessible principles for the use of ICT in education.	3.73	GE	3.81	GE
Select ICT to support assessment strategies	3.51	GE	3.54	GE
Support students in acquiring the knowledge of their subject.	3.73	GE	3.68	GE
Develop lesson plans incorporating ICT supporting activities.	3.56	GE	3.56	GE
Use presentation software and digital resources.	3.62	GE	3.73	GE
Applies the basic principles of cyber safety/security and media and information literacy	3.56	GE	3.52	GE
Use drill-and-practice software.	3.76	GE	3.71	GE
Evaluates educational software and web resources, and match them to curriculum standards and students' needs	3.53	GE	3.58	GE
Troubleshoot ICT issues to ensure that lessons are not too disrupted	3.44	ME	3.65	GE
Utilize ICT to help teachers and students create a learning environment.	3.53	GE	3.59	GE
COMPOSITE MEAN	3.60	GE	3.64	GE

Legends: WM – Weighted Mean, VI – Verbal Interpretation, ME – Moderate Extent, GE – Great Extent

Table 2 demonstrates the results of the extent of implementation of the school ICT program in terms of goals and objectives as assessed by coordinators and teachers. From the evaluation provided by the coordinators, it was evident that drill-and-practice software received the highest rating, indicating a strong level of agreement. However, among the teachers, the results indicated strong agreement for establishing safe and accessible principles for the use of

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ICT in education.

On the other hand, coordinators expressed agreement regarding troubleshooting ICT issues to ensure that lessons are not too disrupted, as indicated by the results. Teachers exhibited a slightly lower level of agreement concerning the application of basic principles of cyber safety and security, as well as media and information literacy, according to the results. In summary, both coordinators and teachers expressed a great level of agreement on this aspect.

Table 3. Learning Resources

Items	Coordinators		Teachers	
	WM	VI	WM	VI
1. Laptop is used for lesson preparations to create and present multimedia shows	3.89	GE	3.89	GE
2. Personal or hand-held computers are used as personal organizers to manage files for delivering instruction	3.42	ME	3.56	GE
3. Interactive boards are used for delivering presentations in order to share digital files related to the course	3.53	GE	3.67	GE
4. Printers are networked for utilization in the classrooms, schools or work stations	3.58	GE	3.65	GE
5. Projectors/ LED Televisions are used during class discussions and demonstrations to provide supplementary content materials	3.73	GE	3.81	GE
6. Web or internet is used to look up reference information, access portal and course, and send and receive e-mail, and build and maintain websites	3.58	GE	3.63	GE
7. Digital cameras are used to manage digital photos, and share photographs and other digital materials	3.53	GE	3.70	GE
8. Scanners are used to manage documents needed in delivering instruction through organizing files in digital format	3.51	GE	3.58	GE

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9. Audio and video resources are used to create, edit and present online audio/video recordings of lectures	3.76	GE	3.83	GE
10. Smart phones are used to access web-based services information and/or utilized for instant messaging/chat on the web to communicate/collaborate with other students in the course.	3.58	GE	3.64	GE
COMPOSITE MEAN	3.61	GE	3.70	GE

Legends: WM – Weighted Mean, **VI** – Verbal Interpretation, **ME** – Moderate Extent, **GE** – Great Extent

The table 3 displays the results of the extent of implementation of the school ICT program in terms of learning resources as assessed by coordinators and teachers. The coordinators indicated a strong agreement, with the highest rating, for using a laptop for lesson preparations to create and present multimedia shows. On the other hand, for the teachers, the results showed that using a laptop for lesson preparations to create and present multimedia shows also has the highest rating as with the coordinators, with the same weighted mean and a verbal interpretation of Great Extent.

Conversely, for the coordinators, using personal or hand-held computers as personal organizers to manage files for delivering instruction has the lowest rating, with a verbal interpretation of moderate extent. However, for the teachers, using personal or hand-held computers as personal organizers to manage files for delivering instruction also has the lowest rating as with the coordinators and a verbal interpretation of great extent. Overall, both coordinators and teachers agree moderately on this aspect, as indicated by their respective assessments.

Table 4. Human Resources

Items	Coordinators		Teachers	
	WM	VI	WM	VI
As an ICT Teacher/Coordinator, I:				
1. Apply Basic knowledge on hardware and software other multimedia devices	3.62	GE	3.78	GE

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2. Use technology for classroom activities and presentations. Select, use and develop appropriate instructional materials using various online and offline sources	3.56	GE	3.52	GE
3. Use technology with the whole class, small groups, and individual activities and assure equitable access.	3.62	GE	3.68	GE
4. Acquire technological skills for professional development.	3.49	ME	3.60	GE
5. Understand and demonstrate the social, ethical, legal and human issues surrounding the use of technology	3.67	GE	3.75	GE
6. Use ICT to set learning targets, collect data for assessment and evaluation	3.60	GE	3.60	GE
7. Monitor, evaluate and control students' use of technology for educational and recreational purposes	3.60	GE	3.75	GE
COMPOSITE MEAN	3.59	GE	3.69	GE

Legends: WM – Weighted Mean, **VI** – Verbal Interpretation, **ME** – Moderate Extent, **GE** – Great Extent

Table 4 presents the evaluation of the school ICT program's implementation in the aspect of human resources, as assessed by both coordinators and teachers. From the assessment of the coordinators, the results revealed that understanding and demonstrating the social, ethical, legal, and human issues surrounding the use of technology has the highest rating, and a verbal interpretation of great extent. However, for the teachers, the results showed that applying basic knowledge of hardware and software to other multimedia devices has the highest rating and a verbal interpretation of great extent.

Contrarily, acquiring technological skills for professional development has the lowest rating and a verbal interpretation of moderate extent. Nevertheless, educators scored the utilization of technology in classroom activities, presentations, and the selection, utilization, and creation of suitable instructional materials from diverse online and offline sources with the lowest rating. The weighted mean stands corresponding to a verbal interpretation of "Great Extent."

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Table 5. Learning Environment

Items	Coordinators		Teachers	
	WM	VI	WM	VI
1. Functional equipment for ICT lessons are available	3.53	GE	3.61	GE
2. Laboratory with good lightings and functional air conditioners are used	3.22	ME	3.53	GE
3. Students do not need to bring equipment from home for practical lessons	3.04	ME	3.37	ME
4. Laboratory is equipped with modern facilities	3.11	ME	3.55	GE
5. Adequate number of hand-held computers and laptop	3.13	ME	3.51	GE
6. Adequate and comfortable classroom for ICT lessons are available	3.33	ME	3.55	GE
COMPOSITE MEAN	3.23	ME	3.52	GE

Legends: WM – Weighted Mean, VI – Verbal Interpretation, ME – Moderate Extent, GE – Great Extent

In table 5 it reveals the results of the extent of implementation of the school ICT program in terms of the learning environment as assessed by coordinators and teachers. From the assessment of the coordinators, the results revealed that the availability of functional equipment for ICT lessons has the highest rating, with a verbal interpretation of great extent. On the other hand, for the teachers, the results showed that the availability of functional equipment for ICT lessons has the highest rating also has the highest rating as with the coordinators which is verbally interpreted as Great Extent.

In contrast, students who are not required to bring equipment from home for practical lessons received the lowest rating, registering a weighted mean that has a verbal interpretation of moderate extent. Conversely, both teachers and coordinators share the opinion that students

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do not need to bring equipment from home for practical lessons, as evidenced by their corresponding lowest ratings. Teachers and coordinators both recorded a weighted mean of moderate extent.

Table 6. Learning Standards

Items	Coordinators		Teachers	
	WM	VI	WM	VI
1. ICT policies in the design and implementation of teaching-learning activities are incorporated	3.62	GE	3.79	GE
2. ICT concepts, principles and theories in various teaching-learning processes are being discussed	3.38	ME	3.49	ME
3. Activities that assist students to reflect their own learning using technology tools are given	3.58	GE	3.69	GE
4. Productivity tools in everyday work are used	3.52	GE	3.52	GE
5. Flexible learning environment that enhances collaboration with the use of technology tools are facilitated	3.51	GE	3.65	GE
6. Technology tools to search for manage, analyze, integrate and evaluate information are used	3.56	GE	3.44	ME
7. Mechanisms to ensure child safety and prevent cyberbullying are instituted	3.73	GE	3.64	GE
COMPOSITE MEAN	3.53	GE	3.63	GE

Legends: WM – Weighted Mean, **VI** – Verbal Interpretation, **ME** – Moderate Extent, **GE** – Great Extent

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As gleaned from Table 6, it shows the results of the extent of implementation of the school ICT program in terms of the learning standards as assessed by coordinators and teachers. The evaluation conducted by coordinators unveiled that establishing mechanisms to ensure child safety and prevent cyberbullying received the highest rating, indicating a strong consensus among participants who had a great extent with this aspect.

However, for the teachers, results showed that incorporating ICT policies in the design and implementation of teaching-learning activities has the highest rating, as with the coordinators, a verbal interpretation of Great Extent. Contrarily discussing ICT concepts, principles, and theories in various teaching-learning processes has the lowest rating, with a verbal interpretation of moderate extent. Teachers, on the other hand, give the lowest rating to using technology tools to search for, manage, analyze, integrate, and evaluate information, with a verbal interpretation of Moderate Extent.

Overall, the assessment of the coordinators on this aspect and the teachers' assessment resulted both establishing with a great extent verbal interpretation.

Table 7. Learner's Achievement

Items	Coordinators		Teachers	
	WM	VI	WM	VI
The ICT learners:				
1. Use ICT to communicate with others in support of learning	3.58	GE	3.66	GE
2. Utilize ICT to collaborate with pupils, teachers, and others via collaborative tools to investigate learning-related topics or issues.	3.62	GE	3.69	GE
3. Apply ICT to access new sources of information for learning.	3.51	GE	3.54	GE

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4. Select and use various sources of electronic information to complete learning tasks.	3.73	GE	3.76	GE
5. Select and use appropriate ICT for problem-solving	3.45	ME	3.56	GE
6. Understand and demonstrate ethical use of ICT and discuss consequences of misuse.	3.58	GE	3.66	GE
COMPOSITE MEAN	3.57	GE	3.65	GE

Legends: WM – Weighted Mean, **VI** – Verbal Interpretation, **ME** – Moderate Extent, **GE** – Great Extent

The table 7 demonstrates the results of the extent of implementation of the school ICT program in terms of the learners' achievement as assessed by coordinators and teachers. According to the coordinators' ratings, selecting and using various sources of electronic information to complete learning tasks has the highest weighted mean which is highly extent to them. Choosing and using various sources of electronic information to complete learning tasks, on the other hand, received the highest rating from teachers, with a verbal interpretation of Great Extent.

Choosing and using appropriate ICT for problem-solving, on the other hand, has the lowest rating, with a verbal interpretation of moderate extent. However, applying ICT to access new sources of information for learning has the lowest rating, with a verbal interpretation of Great Extent. Applying ICT to access new sources of information for learning has the lowest rating, with a verbal interpretation of Great Extent.

Overall, the assessment of the coordinators and the teachers' assessment resulted in both establishing with great extent verbal interpretation.

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Table 8. Physical Resources

Items	Coordinators		Teachers	
	WM	VI	WM	VI
1. Available ICT room in the school for teaching-learning purposes.	3.36	ME	3.69	GE
2. Presence of classroom facilities or significant number of rooms with available ICT resources to deliver ICT related lessons or instruction.	3.20	ME	3.46	ME
3. Available school office with ICT resources to be used for administrative works.	3.40	ME	3.64	ME
4. Accessible laboratory networked to share necessary information.	3.24	ME	3.47	ME
5. Accessible to computer facilities and accessories for maintenance in my school.	3.33	ME	3.67	GE
6. Available internet connection in the school where teachers, students and administrative staff are connected.	3.38	ME	3.46	ME
7. Presence of projector or ability to display audiovisual materials to be used in the teaching-learning process	3.53	GE	3.72	GE
8. Usage of photocopy, fax, and scanning machines to be used in the school both for administrative and instructional purposes.	3.42	ME	3.55	GE
9. Presence of administrative staff office with internet access to better organizational undertakings.	3.36	ME	3.71	GE
10. Available enough electrical supply to support the utilization of ICT facilities in the school setting.	3.36	ME	3.56	GE
COMPOSITE MEAN	3.38	ME	3.59	GE

Legends: WM – Weighted Mean, **VI** – Verbal Interpretation, **ME** – Moderate Extent, **GE** – Great Extent

The table 8 displays the results of the extent of implementation of the school ICT program in terms of physical resources, as assessed by coordinators and teachers. From the assessment of the coordinators, the results revealed that the presence of a projector or ability to display audiovisual materials used in the teaching-learning process has the highest rating, with a verbal interpretation of Great Extent.

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However, the results of the teachers' assessment showed that the presence of a projector or ability to display audiovisual materials used in the teaching-learning process also has the highest rating as with the coordinators, with a verbal interpretation of Great Extent. Conversely, for the coordinators, the presence of classroom facilities or a significant number of rooms with available ICT resources to deliver ICT related lessons or instruction has the lowest rating, with a verbal interpretation of Moderate Extent.

On the other hand, for the teachers, the presence of classroom facilities or a significant number of rooms with available ICT resources to deliver ICT-related lessons or instruction and the availability of internet connection in the school where teachers, students, and administrative staff are connected have the lowest rating, both with a verbal interpretation of Moderate Extent.

Overall, the assessment of the coordinators on this aspect established with moderate extent verbal interpretation, and the teachers' assessment showed a great extent verbal interpretation.

4.2 Differences on the Implementation as Assessed by Coordinators and Teachers

Table 9. Differences in the assessment of Coordinators and Teachers

Variables	p-values	Computed t-values	Decision on Ho	Verbal Interpretation
Goals and objectives	.42	.805	Failed to Reject	Not Significant
Learning resources	.071	1.814	Failed to Reject	Not Significant
Human resources	.116	1.574	Failed to Reject	Not Significant
Learning environment	.000	3.664	Reject Ho	Significant
Learning standards	.047	1.997	Reject Ho	Significant
Learners' achievement	.151	1.440	Failed to Reject	Not Significant
Physical Resources	.000	4.136	Reject Ho	Significant

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The table 9 illustrates the assessment of coordinators and teachers in terms of learners' achievement, wherein the computed t-value and the corresponding p-value are greater than the level of significance and failed to reject the null hypothesis tested. Therefore, there is no significant difference in the learners' achievements as assessed by the respondents. The findings clearly show that both coordinators and teachers utilized ICT in selecting electronic sources, promoting collaborative tasks, and encouraging communication to support learning. This parallels the study of Srivastava (2016), who claimed that effective ICT integration into the learning process engaged the learners even more.

Lastly, with regard to physical resources, since the computed t-value has a corresponding p-value, the null hypothesis was rejected. Therefore, there is a significant difference in the extent of implementation of physical resources among the coordinators and teachers. The results may imply that coordinators and teachers utilized physical facilities in different ways and for different needs, but with the same goals. This result conforms with the findings of the study by Anjali et al. (2014), which showed the positive impact of laboratory networks in completing lab activities and experiments efficiently and can be used for other laboratory tasks such as computer networking and system administration.

4.3. Issues and Challenges in the Implementation of Schools' ICT Programs

Table 10. Issues and Challenges in the Implementation of Schools' ICT Programs

Items	Coordinators		Teachers	
	WM	VI	WM	VI
1. Sufficiency of fund in getting, installing, operating, maintaining, and replacing ICT systems	3.38	ME	3.70	GE
2. Usage of unlicensed software, outdated hardware and software systems	3.09	ME	3.33	ME

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3. Availability of technical support for maintenance of systems	3.38	ME	3.57	GE
4. Availability of ICT equipment such as computers laptops, printers, interactive whiteboards,	3.42	ME	3.54	GE
5. Accessibility to internet connectivity, bandwidth, or speed	3.44	ME	3.71	GE
6. Trainings of teachers on ICT	3.31	ME	3.68	GE
7. Technical and pedagogical support for teachers	3.56	GE	3.52	GE
8. Availability of learning resources on ICT	3.31	ME	3.55	GE
9. Integration of ICT in other discipline	3.60	GE	3.70	GE
10. Parental support to children in using ICT in school	3.31	ME	3.53	GE
11. Teachers attitudes towards the use ICT in school	3.64	GE	3.67	GE
12. Benefits of the use ICT in teaching and learning	3.58	GE	3.65	GE
COMPOSITE MEAN	3.42	ME	3.60	GE

Legends: WM – Weighted Mean, **VI** – Verbal Interpretation, **ME** – Moderate Extent, **GE** – Great Extent

The table 10 exhibits the results of the issues and challenges in implementing schools' ICT programs as assessed by coordinators and teachers. From the assessment of the coordinators, the results revealed that teachers' attitudes towards the use of ICT in school have the highest rating, with a verbal interpretation of Great Extent. On the other hand, for the teachers, the results showed that accessibility to internet connectivity, bandwidth, or speed has the highest rating, with the remark of great extent.

Conversely, for the coordinators, using unlicensed software, outdated hardware, and software systems has the lowest rating, with a verbal interpretation of moderate extent. However, for the teachers, using unlicensed software, outdated hardware, and software systems also has the lowest rating as with the coordinators, with a remark of moderate extent. Overall, the assessment of the coordinators on this aspect agree moderately, and the teachers' assessment showed with a remark of great extent.

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The data established that regarding the issues and challenges in implementing schools' ICT programs, coordinators gave the highest rating to the teachers' attitudes towards the use of ICT in school and gave the lowest rating to the use of unlicensed software, outdated hardware, and software systems. However, teachers gave the highest rating for accessibility to internet connectivity, bandwidth, or speed and the lowest rating for using unlicensed software, outdated hardware, and software systems, similar to the coordinators' assessment. Firstly, coordinators struggle highly with the teachers' attitudes towards using ICT, suggesting the coordinators provide suitable and contextualized assistance and training for teachers. On the other hand, accessibility to internet connectivity, bandwidth, or speed became one of the significant concerns of the teachers.

Contrarily, it was noteworthy to mention that based on the results, the usage of unlicensed software, outdated hardware and software systems, technical and pedagogical support for teachers, availability of learning resources in ICT, and parental support for children in using ICT in school were just minor concerns of the publication because they receive adequate support from the administration and parents.

4.4 Schools' Innovative Practices in the Implementation of ICT Program

Table 11.

Schools' Innovative Practices in the Implementation of ICT Program

Responses	Subordinate Themes
...We make sure that all learners have knowledge about computers. Pupils are given chances to use computers and have hands-on experience	Raising the ICT Literacy of the learners
...We used ICT facilities for teaching. Also, all teachers in our school used DCP materials in teaching and learning process	Integration of ICT into School System

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...The e-classroom of our school are secured, safe from water leaks, outlets and plugs are not damaged. We also followed protocols for e-classroom setup DCP & Infrastructure

...I use offline application for real-time formative assessment. Here, I can collect real-time formative assessment data without need for student devices. Aside from that, it engaged in student critical thinking and give students chance to participate and learn without being self-conscious Using offline application

...The following innovative practices of our school in the implementation of ICT Program are the use of PowerPoint in lesson presentation, utilization of Canva.com in creating documents and other important presentations and application of DepED tv in lesson learning Utilizing technological tools

... I used modules and learning activity worksheets through the use of DepED commons and Learning resources management and Development System (LRMDS) Portal. I also incorporate DepED tv official video lessons scheduled once week during online classes Searching in DepED sites

... Our school utilized Blended learning instruction in the classroom through ICT. Also promote interactive learning environment through the use of ICT. Combination blended learning instruction and ICT

..... Our school has school-based computer programs for the pupils. Also, it promotes the constant use of spare time in computer rooms as recreational activity for the pupils Implementing sc

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Table 11 presents the innovative practices of utilizing online and offline technological tools, most participants said that the schools utilize different technological tools as part of the schools' ICT innovation and practices.

Two participants stated that using the tools can help the students acquire competencies expected in the subject. Other participants divulged that the use of PowerPoint presentations and Canva in the learning modality is effective in attaining learning competencies. References from DepED sites are helpful tools in the teaching-learning process.

Due to the sudden change in the modality of teaching and learning brought by the pandemic, the Department of Education (DepED) strengthened the utilization of technological tools in teaching the lesson, which enhanced the knowledge and skills of the students. This is reflected in the following responses from the participants:

“We used different tools like PPT and Canva ”

“We used Google and other online platforms in delivering the lesson”

The participants explained that it is a form of affirmation of its commitment to sustaining the delivery of quality, accessible, relevant, and liberating Philippine basic education services anchored on the Sulong Edukalidad Framework. Maximizing the technological tools is also one of the strict instructions given to them.

The findings adhere to the statements of Briones (2020) in her press conference that the utilization of technology addresses the needs, situations, and resources of every learner and covers all the bases in ensuring that basic education will be accessible amid the COVID-19 pandemic. Through the technological tools, the Most Essential Learning Competencies (MELCs) were achieved, as proven by the participants' responses:

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“I think these methods [technological] are effective enough for learners to acquire the expected competencies.”

“I adhere to the innovation in technology in the classroom.”

The emergence of technology training and sessions is not just a response to addressing the challenges of the current pandemic but is also part of the department’s long-term response to develop resilient education systems, especially during emergencies. The training sessions enabled the teachers to become flexible and innovative in teaching the lessons.

The findings are aligned with the study by Motteram (2013), which emphasized that the increased use of technology has enabled the creation of opportunities to improve instruction. Important developments in understanding the functions of innovative technologies are starting to blossom in the field. As a result, ICT integration in curriculum and implementation have stabilized.

4.6 Revitalized Management Plan for Public Elementary Schools’ ICT Program

Mainly, the results revealed that coordinators and teachers have specific and significant concerns about implementing ICT programs in public elementary schools. Therefore, the researcher prepared a revitalized management plan for the ICT program in public elementary schools.

To strengthen the implementation of the ICT program, the researcher developed the Revitalized Management Plan in ICT, which identified the seven (7) major goals for ICT development predominantly in public elementary schools. The following targets deal with goals and objectives: learning resources, human resources, learning environment, learning standards, learner achievement, and physical resources. This revitalized management plan will be used as a tool for enhancing the implementation of ICT, overcoming issues and challenges, and discovering technological tools and innovative practices.

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Furthermore, the revitalized management plan for the ICT program of public elementary schools can be a tool to enhance ICT implementation, overcome the issues and challenges in the implementation process, and discover technological tools and innovative practices.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Based on the findings, the following conclusions were drawn:

1. The school ICT program was implemented at a very high level as determined by coordinators based on goals and objectives, learning resources, human resources, learning standards, and learner achievement. While the learning environment and physical resources were rated as high. On the other side, it was revealed that teachers have implemented goals and objectives, learning resources, human resources, learning standards, learner accomplishments, and physical resources at a high level.
2. There was no significant difference in the ICT implementation of coordinators and teachers in terms of goals and objectives, learning resources, human resources, and learners' achievements. On the other hand, there is a significant difference in terms of learning environment, learning standards, and physical resources.
3. According to the coordinators, teachers' attitudes towards the use of ICT in the school were evaluated as very high among the issues and challenges. On the other hand, the accessibility of internet connectivity, bandwidth, or speed was shown to score at a very high level for the teachers.

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4. A revitalized management plan for the public elementary school ICT program was prepared ultimately contributing to an improved educational environment.

Recommendations

From the conclusions drawn, the following recommendations were presented:

1. The revitalized management plan may be presented to public elementary schools for evaluation and review of its usability in the school to address the needs and issues regarding ICT.
2. Teachers may need to attend more training sessions and seminars to increase their skills in using ICT in the teaching and learning process.
3. A similar research study may be accomplished to determine the extent of the information and communication technology (ICT) program in the institution.

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