

# Technology Assessment Integration in Teaching and Learning in Selected Elementary Schools in the Province of Bohol

Maricel T. Luzano<sup>1</sup>, Pretcynian B. Sagrados<sup>2</sup>,  
Mae Angelie N. Sagrados<sup>3</sup>, Rosalie C. Yaun<sup>4</sup>

Teacher III, San Agustin Elementary School, DepEd Division of Bohol

Teacher III, Alaska Elementary School, DepEd Division of Cebu

Teacher I, Cornelio C. Melgar Elementary School, DepEd Division of Cebu Province

Teacher III, Tabunan National High School, DepEd Division of Cebu Province

## Abstract

In the fast-paced educational environment of today, technology has emerged as an inevitable instrument that influences teachers to deliver lessons and students to acquire knowledge. This study examined the level of technology integration among the teachers and the difficulties they face in executing new approaches within the classroom.

Utilizing a descriptive research design, the research included 100 teachers from public schools who responded to a structured survey questionnaire targeting five key areas: lesson planning and evaluation, student engagement tools, teaching methods, learning platforms, and the employment of ICT tools. Statistical tests, including mean and standard deviation, were used to identify the degree of technology integration and how it correlates with teaching effectiveness.

The results showed that teachers exhibit a high degree of competency and a favorable attitude towards technology integration. They greatly concurred that technology makes them more efficient in class, increases students' participation, and increases learning outcomes. Nevertheless, factors like inadequate ICT facilities, unsteady internet connections, and insufficient training persist as major hindrances.

An action plan was created to enhance teachers' digital competencies, enhance school infrastructure, and ensure continuous professional learning. The study concludes that technology empowerment of teachers has more interactive, innovative, and efficient learning experiences for all students.

**Keywords:** Technology Integration, Teaching Effectiveness, ICT in Education, Public School Teachers

## Chapter 1

### The Problem and Its Scope

#### Introduction

#### Rationale of the Study

In recent years, public education systems around the world have been increasingly integrating technology and digital tools, into both instructional and administrative processes. Digital learning, characterized by the integration of information and communication technology (ICT) into educational practices, has become a cornerstone of modern education (Hemajothi and Kumar Jain, 2022). The De-

partment of Education (DepEd) is committed to address the challenges in digital learning and education technology, with the partnership of the Information and Communications Technology Service (ICTS), through its Digital Rise Program as key player in addressing challenges in education quality that aims to enhance and provide teachers with equipment, software content, and skills for their daily classroom teaching, it is an educational framework that anchors to the infrastructure, software and capacity building of learners and teachers in technology.

The importance of digital learning is more emphasized during in the midst by the global COVID-19 pandemic where abrupt shift from face-to-face instruction to remote learning (Ignacio et al., 2022). This shift has accelerated the adoption of digital technologies in education, underscoring their potential to facilitate continuous learning even in the face of unprecedented challenges (Kumbo et al., 2023). As educational institutions worldwide grapple with the demands of the 21st century, the integration of technology into the curriculum has become a necessity rather than an option (Sahin et al., 2022; Vachkova et al., 2022).

The rapid advancements in digital technologies have fundamentally transformed how education is delivered and experienced. Despite the increasing adoption of technological tools in education, many public schools face persistent challenges such as limited training, unreliable infrastructure, lack of clear implementation strategies and budget cuts. Addressing these challenges requires a multifaceted approach that includes the development of policies, investment of ICT infrastructure and continuous professional development for teachers and administrators. The Philippine President directed the Department of Education (DepEd) through Secretary Angara to provide teachers and learners with better access to technology and it has envisioned the classrooms of the future as a space where learners and teachers are empowered by technology.

Understanding technology and innovation are crucial in shaping policies, infrastructure investments and training programs for school leaders and learners. The use of modern equipment technology and tools can make learning and interactivity of learners increases (R. Raja, et al 2018). Technology has revolutionized the field of education, it has become easier for teachers and administrators to impart knowledge and decisions for the learners to acquire it. Department of Education Computerization Program (DCP) plays a critical role in enhancing the quality of education in the Philippines through the integration of information and communication technology (ICT) in public schools.

This research aims to explore the role of technology and innovation in public school by examining the extent of adoption, the challenges encountered during implementation, and the perceived impact on efficiency. This research focus on public school administrators and teachers' experience and perspectives with the goal of identifying patterns, barriers and opportunities for more effective use of the technology.

## **Theoretical Background**

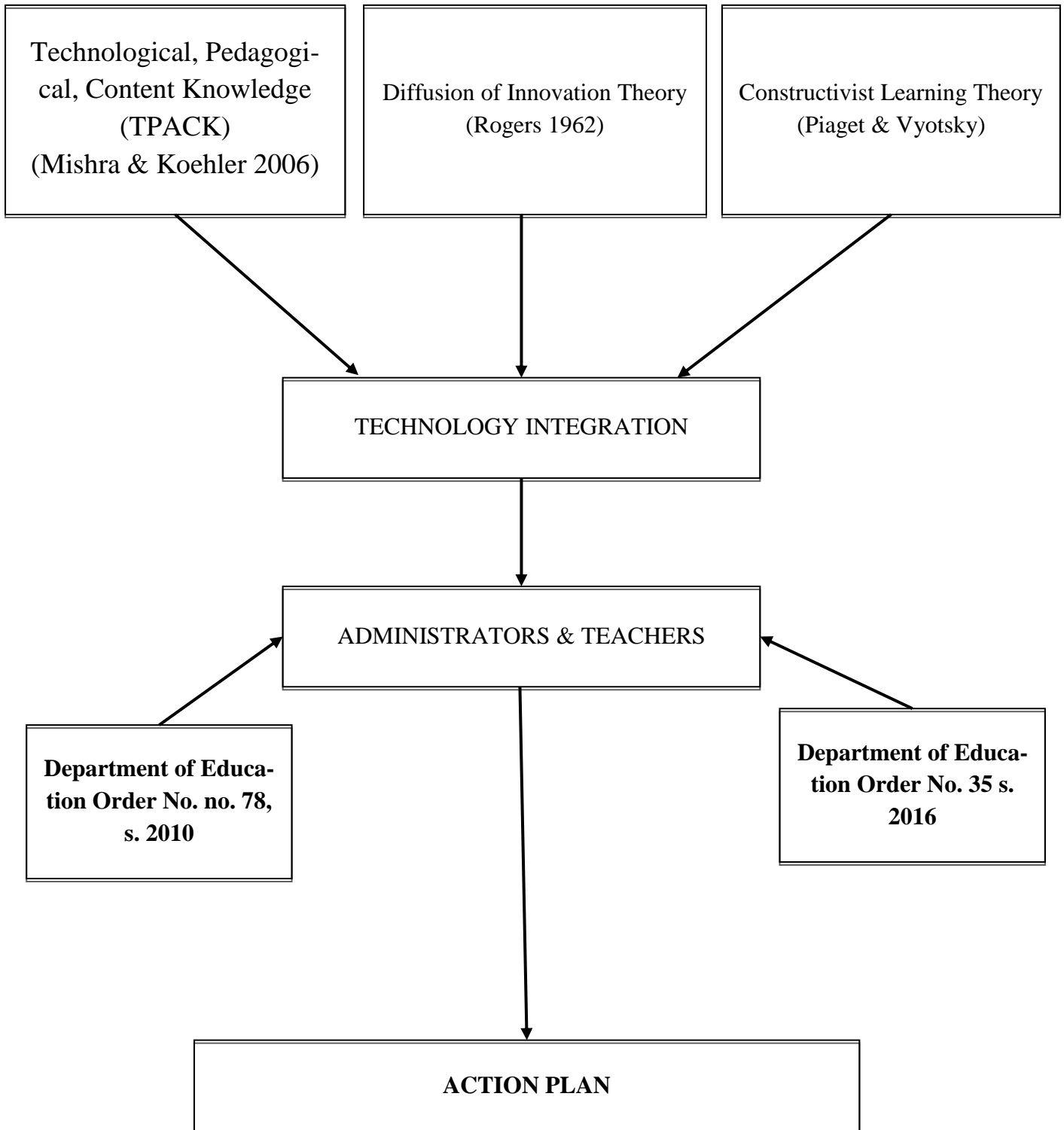
The integration of technology and innovation in public schools has become a central focus of educational reform and development. School administrators strive to enhance teaching and learning outcomes, understanding the theoretical underpinnings that explain how technology is adopted, implemented, and utilized is essential. This study is anchored by three educational theories that help explain the connection between technology, innovation, and the teaching and learning process in public schools. Technological Pedagogical Content Knowledge (TPACK) Framework, the Diffusion of Innovation Theory, and the Constructivist Learning Theory. Each of these theories plays an important role in under-

standing how teachers adapt to technological changes, how innovations are introduced and accepted in school systems, and how students learn more effectively through active and engaging strategies.

The TPACK framework, introduced by Mishra and Koehler (2006), focuses on how teachers combine their knowledge of content, pedagogy, and technology to design effective instruction. In this framework, successful teaching with technology depends on a teacher's ability to integrate these three domains of knowledge. In public school settings, this theory helps in understanding how teachers utilize digital tools and platforms to enhance their lessons. A study by Chai, Koh, and Tsai (2013) explored how TPACK influences teachers' design of technology-integrated lessons and found that developing TPACK can significantly improve teaching practices. It is also mentioned by the different relevant research study that they found that technology knowledge was the strongest component, while the interaction of technology and pedagogy/content (TPACK) was less confident (Bas and Şentürk, 2018). Their findings highlight the need for targeted professional development to strengthen teachers' integrated TPACK skills. There is a need to conduct technology trainings among administrators and teachers to enhance their knowledge and skills in the integration of technology in instruction. A quasi-experimental study by "The Effect of TPACK on Developing 21st-Century Teaching Skills" (2024) demonstrated that preservice teachers who received TPACK-focused training significantly improved in 21st-century pedagogical skills. This highlights TPACK's value in teacher education.

Second theory is the Diffusion of Innovation Theory, developed by Rogers (1962), explains how new technologies or practices spread and are adopted by individuals within a social system. It highlights the different stages and categories of adopters, as well as the factors that affect the rate of adoption—such as complexity, compatibility, and perceived usefulness. In educational research, this theory has been widely used to study how schools and teachers adopt new technologies. Medlin (2001), investigated the factors influencing faculty innovation and found that personal attitudes toward technology, institutional support, and professional development all play key roles. Similarly, Straub (2009) applied the theory to analyze the acceptance and resistance of teachers toward ICT in education, providing further insight into how innovations can succeed or fail in school environments. It is also applied by Abdelmagid (2011) the Rogers' theory in Kuwaiti K–12 public schools to analyze teachers' perceptions of technology integration. The study emphasized how attributes of innovation—such as relative advantage, compatibility, and observability—along with teacher characteristics and support systems, explain differing rates of adoption.

The last theory is the Constructivist Learning Theory, rooted in the work of Piaget and Vygotsky, emphasizes that students learn best when they are actively engaged in building their own understanding. This theory supports the use of student-centered, activity-based, and technology-supported learning environments. Jonassen, Howland, Marra, and Crismond (1999) highlighted how technology can be used as a tool to support knowledge construction and problem-solving in constructivist classrooms. Tam (2000) emphasized that when constructivist principles are combined with instructional technologies, students benefit from deeper, more meaningful learning experiences. It is also used by (Zhai et al., 2019) involving 803 10th-grade physics students showed a positive correlation between using mobile technologies designed for constructivist learning and student achievement, revealing that tech-enhanced constructivist tasks boost both motivation and performance of the learners.



**Figure 1.**  
**Theoretical Framework**

The Department of Education (DepEd) Order No. 35, s.2016, which emphasizes the recognition of 21st-century skills and ICT integration, highlights the need for teachers to enhance their lessons by incorporating developmentally appropriate strategies using Information and Communication Technology (ICT). Through the use of available tools and resources in schools, teachers can make teaching and assessment more interactive and collaborative.

To support this, DepEd Order No. 78, s.2010, also known as the DepEd Computerization Program (DCP), was launched to equip public schools with the necessary technology to strengthen the teaching and learning process. This initiative, in collaboration with various government and private partners, aims to provide computer laboratory packages, establish e-classrooms, integrate ICT into the school system, improve ICT literacy among students, teachers, and school heads, and address the shortage of computers in public schools.

## **The Problem**

### **Statement of the Problem**

This research will assess the technology integration in teaching and learning in selected elementary schools in the province of Bohol for the school year 2025-2026 as basis for an action plan.

Specifically, this will answer the following:

1. What are the related information as to:
  - 1.1 teacher's
    - 1.1.1 age and gender,
    - 1.1.2 position/designation,
    - 1.1.3 teaching experience,
    - 1.1.4 relevant trainings/seminars/workshop attended
2. To what extent is technology integrated into classroom instruction in terms of;
  - 2.1.1 lesson planning and assessment
  - 2.1.2 student engagement tools
  - 2.1.3 teaching strategies
  - 2.1.4 educational platforms
  - 2.1.5 Use of ICT tools
3. How do public school teachers perceive the role of technology and innovation as to;
  - 3.1.1 teaching effectiveness
  - 3.1.2 student participation and engagement
  - 3.1.3 learning outcomes and comprehension
4. What are the challenges and barriers related do teachers encounter in integrating technology and innovation in their instruction?
5. Based on the findings what action plan can be proposed to strengthen the use of technology in public school teaching?

### **Significance of the Study**

This study is important as it sheds light on how technology and innovation are being used by public school teachers to improve the teaching and learning process. In today's digital age, the integration of technology and modern teaching strategies has become more than just an option—it is a necessity for delivering quality education and preparing students for the demands of the 21st century.

Despite the presence of national policies and programs that support technology integration, many schools still face challenges in effectively implementing technology in daily classroom instruction. This research aims to explore not only the current practices of teachers but also the barriers they face, their level of readiness, and their perceptions of how technology and innovation affect teaching outcomes. The findings of this study can serve as a valuable guide for improving and supporting technology-based instruction in public schools.

**School Administrators.** School heads and department leaders can use the findings to better understand the training and resource needs of their teachers. The study can help in planning capacity-building programs, allocating ICT resources wisely, and strengthening school-based initiatives for innovation in teaching.

**Teachers.** This study will help teachers reflect on their current use of technology and innovative strategies. The results may guide them in enhancing their teaching practices, identifying areas for improvement, and advocating for the support they need to become more effective educators in a tech-driven classroom.

**Learners.** They are the focus of the study in order for them to gain knowledge and enhance the specified ICT skills they want to learn through the different activities they will perform. Through practical computer activities and exercises that reinforce not only what is being taught in the classroom but also what is being tested.

**Parents.** The parents are concerned with the educational development of the learning of the students. The result of this study is to give the information that the school is providing the complete tools and teaching materials aligned to the ICT instruction and provide them the status of the teachers and as to the development of the school.

**Stakeholders.** Refers to anyone who is invested for the welfare and success of a school and its students, including administrators, teachers, staff members, parents, families, community members, local business leaders, and elected officials such as school board members, city councilors, and state representatives. As learning will increasingly occur anywhere, anytime, the community will play a vital role as partners of DepEd in ensuring a safe and responsible ICT learning environment.

**Future Researchers.** This study can serve as a reference for those who wish to explore similar topics, such as ICT literacy, digital pedagogy, and innovation in education. It also opens opportunities for further research on the impact of technology on student performance, digital equity, and long-term educational transformation.

## Research Methodology

This study will use a descriptive research design with a quantitative approach. Descriptive research is appropriate for this study because it aims to gather information about how public-school teachers use technology and innovation in their teaching practices, the challenges they encounter, and their perceptions of its impact. The quantitative approach will allow for the collection of measurable data using a structured survey questionnaire.

## Flow of the study

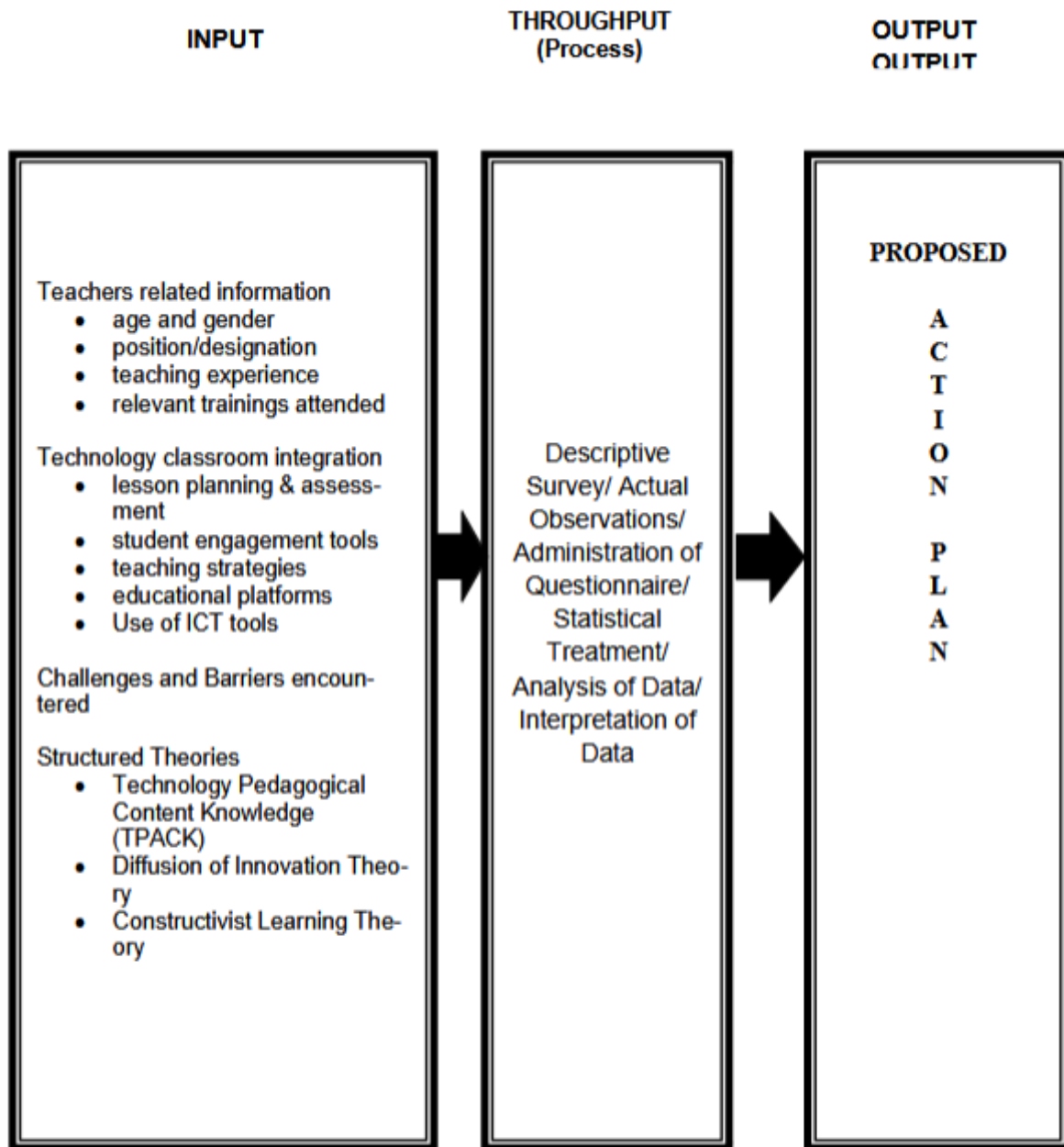
This study follows the Input-Throughput-Output (ITO) model to illustrate the logical flow and structure of the research study.

The input includes essential information and factors that serve the foundation of the study. It consists of the profile of the respondents as to age, gender, teaching experience, position and relevant trainings attended/seminars/conference attended, the availability and accessibility of digital tools in schools. The existing technologies and platforms currently available in schools, as well as the actual teaching practices involving technology. This study also considers the extent to which teachers integrate technology tools in lesson planning, instruction, assessment and student engagement. The challenges and barriers that teachers face in using technology in the classroom. It also anchored on existing theories that serves as a guide in this study, the Technology Pedagogical Content Knowledge, Diffusion of Innovation Theory and the Constructivist Learning Theory. It is very important to understand the current landscape of technology and innovation in public school teaching.

The throughput of this study includes Descriptive Survey Questions, Actual Observations, Administration of Questionnaire, Statistical Treatment, Analysis of Data and Interpretation of data gathered. The survey is administered to selected public schools' teachers using random sampling. After collecting the data, the responses are encoded, organized and statistically analyzed using tools such as frequency, percentage, mean and standard deviation.

The output of this study will be proposed to come up with an action plan to aimed at strengthening the use of technology and innovative strategies in public school instruction that includes concrete steps for teachers, and school administrators.

The flow of the study shown on figure 2 in page 13.



**Figure 2.**  
**The Flow of the Study**

### Environment

Bohol is the 10th largest island of the Philippines. It is an oval-shaped island province located in Central Visayas. It is bounded by Cebu in the east; Bohol Strait in the west; Camotes Sea in the north; and Mindanao Sea in the south. Tourism on this attractive, idyllic and scenic island has begun to develop. The world-renowned Chocolate Hills can be found in the province.

Tagbilaran City is the province’s principal port and commercial center. Hotels, restaurants, and shops, where handicrafts and locally made products are sold, can be found throughout the city.

Tourist attractions can be found throughout the province, but the most-visited is undoubtedly the Chocolate Hills. Two legends and two geological explanations about the origin of the Chocolate Hills exist.

The first legend tells of a fight between two giants who threw stones and sand at each other for days until they were so tired and exhausted that they gave up and made friends. They left the island but didn't, however, tidy up the battlefield, leaving the Chocolate Hills.

The second legend is a lot more romantic. Arogo, a young and unusually strong giant, fell in love with an ordinary mortal, Aloya. After Aloya's death, Arogo cried bitterly. The Chocolate Hills are proof of his grief, for his tears turned into hills.

Some geologists say Bohol lay underwater in prehistoric times. Volcanic eruptions caused unevenness in the bottom of the sea which was gradually smoothed and rounded by the movement of the water.

Most geologists, however, say the explanation as nonsense. Even though the geological origin of the hills has not yet been explained beyond doubt, the consensus is that they were weathered formations of a kind of marine limestone lying on the top of impermeable clay soil. Comparisons have been made with the Hundred Islands of North Luzon.

The study is conducted at Anibongan Elementary School, Canlangit Elementary School, San Agustin Elementary School, and Sta. Cruz Elementary School, Sierra Bullones, Bohol. It is a complete elementary school with 28 teachers, a school head and an administrative assistant. For this school year, it has a total population of 478 learners in elementary level.

It is situated 8 km. away from the town proper and accessible by any means of land transportation though the road is partially concreted. Although the school has been a recipient of the DepEd Computerization Program (DCP), it was not fully utilized because of the absence of internet connection then.

However, due to the continued efforts of the school leaders the school has now internet connectivity. As of today, the school has strong internet connection suitable for computerized education on the learners in order for them to advance on the web-based learning.



**Respondents**

The public school teachers of Anibongan, Canlangit and San Agustin Elementary School is among the respondents of the study. A total of 100 respondents, they answered the questionnaires that administered to them. Table 1 shows the distribution of the teachers and students respondents.

**Table 1**  
**Distribution of the Respondents**  
(n=50)

Respondents Groups	Population		Total
	Male	Female	
Anibongan Elementary School	20	15	35
Canlangit Elementary School	20	15	35
San Agustin Elementary School	15	15	30
Total	55	45	100

### Instrument

The questionnaire of this study was based on two sources: (1) Some questionnaires are adapted from the study of Icot, (2013), (2) and the level of computer literacy skills are based on the study of Mbwana (2009). The researcher also creates a survey questionnaire that is designed to be simple, clear and answerable within 10-15 minutes. The questionnaire is divided into four (4) parts namely; Part I is the teachers’ profile that includes age, gender, position, teaching experience and trainings attended, Part II is the technology integration it is where the teachers use technology in lesson planning and assessment, student engagement tools, teaching strategies, educational platforms and Use of ICT tools. Part III is how teachers perceive the technology that includes teaching effectiveness, student participation and engagement and learning outcomes and comprehension. Part IV is the challenges and barriers encountered by the teachers in integrating technology in their discussions.

### Data Gathering

**Research Preparation.** The researcher formally asked permission from the office of the principal to conduct the study. The researcher will personally distribute to the respondents and explained to the respondents show to answer every item of the questionnaire to be assured the needed and pertinent data will be gathered.

**Research Instrument Administration.** To explain the significance of the study the researcher conducted a pre-conference of the respondents. Also, he administered a post conference to verify and clarify some information that needs further investigation.

### Statistical Treatment of Data

The data gathered is being tabulated and analyzed as the basis for interpretation.

**Simple Percentage.** The simple percentage was utilized to get the profile of the respondents. To determine the problems encountered by the teachers in ICT instruction, the respondents checked as many responses on the problems identified.

**Weighted Mean.** The weighted mean was utilized to determine the literacy instruction by the group of respondents such as computer literacy skills, Teaching methodologies and techniques, Use of ICT equipment, Instructional ICT skills, and ICT laboratories and facilities and also the issues and concerns encountered by the respondents’ group.

**Standard Deviation.** The standard deviation was utilized to measure how much the responses in a set of data vary or spread from the average.

### Scoring Procedure

To interpret and analyze the responses of the respondents accurately, this study uses a standardized scoring procedure based on a 5-point Likert scale.

For assessing how often or consistency teachers apply technology, the following are used:

Weight	Scale	Category	Verbal Description
5	4.21-5.00	Highly Practiced	The teacher consistently and effectively applies the strategy
4	3.41-4.20	Practiced	The teacher regularly applies the strategy

3	2.61-3.40	Moderately Practiced	The teacher occasionally applies the strategy
2	1.81-2.60	Rarely Practiced	The teacher seldom applies the strategy
1	1.00-1.80	Not Practiced	The teacher does not apply the strategy

For measuring beliefs, agreement, or attitude towards technology and innovation the following are used:

Weight	Scale	Category	Verbal Description
5	4.21-5.00	Strongly Agree	The respondent completely agrees with the statement
4	3.41-4.20	Agree	The respondent agrees with the statement
3	2.61-3.40	Neutral	The respondent is undecided or neither agrees nor disagrees
2	1.81-2.60	Disagree	The respondent disagrees with the statement
1	1.00-1.80	Strongly Disagree	The respondent completely disagree with the statement

## Definition Of Terms

To understand the terms used in this study, the following definitions are given considerations.

**Technology Integration.** refers to the meaningful use of digital tools, platforms, and applications in teaching practices, including lesson planning, instruction, assessment, and student engagement.

**Innovation in Teaching.** The use of creative, modern, or non-traditional strategies, methods, or tools to enhance learning. This includes project-based learning, gamification, flipped classrooms, and the use of multimedia content.

**Information and Communication Technology (ICT).** A broad term that includes any digital technology used to communicate, create, store, and manage information in education. Examples include computers, tablets, internet-based platforms, and educational software.

**Public School Teachers.** Teachers employed in government-run primary or secondary schools who are responsible for planning, delivering, and assessing instruction to learners.

**Educational Platforms.** Digital tools or systems used to support teaching and learning processes. These include learning management systems (LMS), content delivery platforms, and classroom applications such as Google Classroom, Moodle, or Microsoft Teams.

**Digital Resources.** Online or electronic materials used to support instruction, such as videos, e-books, simulations, and interactive modules.

**Perceived Impact.** Refers to how teachers view or interpret the effect of technology and innovation on their teaching performance, student participation, and learning outcomes.

**Challenges in Technology Integration.** The difficulties or barriers that hinder effective use of ICT in teaching. This may include lack of training, limited access to resources, poor internet connectivity, or lack of institutional support.

**Action Plan.** A proposed set of steps or strategies developed from the study’s findings to improve or support the integration of technology and innovation in public school education.

**Standard Deviation.** A statistical measure used in this study to determine how much the responses vary from the average (mean). A low SD indicates consistency among answers, while a high SD suggests varied responses.

## Chapter 2

### Presentation, Data Analysis And Interpretation

This chapter deals in presentation, data analysis and the interpretation, the data gathered from selected elementary schools in the Province of Bohol during school year 2025-2026. The result was organized and discussed with the statement of the problem, and it ensures that each question was systematically addressed. Tables and figures were utilized to present findings clearly, while narrative explanations were provided to highlight significant patterns and insights.

#### Profile Of The Respondent Groups

The section describes the respondents’ demographic profile in terms of age, gender, position or designation, teaching experience, and relevant trainings or seminars attended. This provided context to better understand the background of teachers participating of the study.

**Age and Gender.** Presented in this portion is the age and gender profile of the teachers. The source of age categorization was derived from the lowest to highest age presented in Table 2.

**Table 2**  
**Age and Gender of the Teachers**

Age	Male		Female		Total	
	F	%	f	%	f	%
21 to 25	10	10%	15	15%	25	25.00
26 to 30	4	4%	8	8%	12	12.50
31 to 35	9	9%	16	16%	25	25.00
36 to 40	7	7%	18	18%	25	25.00
46 and above	3	3%	10	10%	13	13.00
<b>Total</b>	33	33%	67	67%	100	100%

The data reveal that most of the respondents are within the 21–25, 31–35, and 36–40 age ranges, indicating that the majority of participants are in their early to mid-career stage. The presence of respondents aged 46 and above, though fewer, suggests some level of seniority and experience in the teaching profession.

The dominance of female respondents reflects the gender trend in the teaching workforce, where women typically outnumber men in the profession. This demographic composition may have implications for variables such as job satisfaction, work-life balance, and professional motivation.

**Position and Designation.** Table 3 presents the distribution of respondents according to their position and designation. Out of the 100 respondents, the majority (40 or 40%) are Teacher I, followed by Teacher II with 25 respondents (25%), and Teacher III with 15 respondents (15%). Meanwhile, Head Teachers comprise 10%, Master Teacher I accounts for 7%, and Master Teacher II makes up the smallest group with 3%.

**Table 3**  
**Position & Designation**

Position/Designation	Frequency	Percentage
Teacher 1	40	40%
Teacher 2	25	25%
Teacher3	15	15%
Head Teacher	10	10%
Master Teacher I	7	7%
Master Teacher II	3	3%
Total	100	100%

This indicates that most respondents occupy entry to mid-level teaching positions, which implies that the population is largely composed of teachers who are still in the early to middle stages of their professional career. The relatively smaller number of Master Teachers and Head Teachers suggests that fewer teachers have reached higher ranks, possibly due to limited promotional opportunities, qualifications, or years of service.

Such a composition is common in many schools, where the majority of personnel are classroom teachers. This demographic can affect the perspectives reflected in the study especially in areas such as professional development, instructional leadership, or motivation as these may vary according to rank and experience.

**Teaching Experience.** The table presents the distribution of respondents according to their years of teaching experience. Out of 100 respondents, the highest proportion (35 %) have 1 to 5 years of experience, followed by 28 % with 6 to 10 years, and 20 % with 11 to 15 years. A smaller percentage of teachers have longer experience, with 10 % in the 16 to 20 years category, 5 % in 21 to 25 years, and only 2 % having 26 years and above of teaching experience.

**Table 4**  
**Teachers Teaching Experience**

Teaching Experience	Frequency	Percentage
1 to 5 years	35	35%
6 to 10 years	28	28%
11 to 15 years	20	20%
16 to 20 years	10	10%
21 to 25 years	5	5%
26 years and above	2	2%
Total	100	100%

Table 4 indicate that the majority of respondents are relatively new to the teaching profession, with most having less than ten years of service. This suggests that the sample is composed largely of early- to mid-career teachers who may still be developing mastery of instructional strategies and exploring innovations such as technology integration.

The smaller proportion of teachers with more than 20 years of experience reflects a lesser representation of veteran educators. This composition may influence the overall level of technology integration in teaching since younger teachers are often more adaptive and open to the use of digital tools in instruction, while more experienced teachers may rely on established traditional methods.

The distribution provides a balanced perspective across different stages of the teaching profession, which can help in analyzing how teaching experience relates to the extent of technology use in the classroom.

**Relevant trainings/seminars/workshops attended.** Table 5 shows the distribution of respondents according to the number of hours they have spent in relevant trainings, seminars, and workshops. Out of 100 respondents, 30 % attended 20 to 29 hours of relevant trainings, 28 % attended 30 to 39 hours, 22 % attended less than 20 hours, and 20 % attended 40 hours and above.

**Table 5**  
**Relevant trainings/seminars/workshop attended**

Number of hours in relevant trainings/seminars attended	Frequency	Percentage
Less than 20 hours	22	22%
20 to 29 hours	30	30%
30 to 39 hours	28	28%
51 hours and above	20	20%
<b>Total</b>	<b>100</b>	<b>100%</b>

Table 5 reveal that most teachers have undergone moderate levels of training exposure, with a considerable number having participated in 20 to 39 hours of professional development activities. This suggests that the respondents generally recognize the importance of continuous learning and updating their skills to meet the demands of modern instruction.

A notable portion of respondents have attended less than 20 hours of relevant training, which may imply limited opportunities or time constraints to participate in professional development programs. The proportion who have undergone 40 hours and above of training indicates a smaller group of teachers with extensive exposure to capacity-building activities, possibly including ICT integration workshops or digital literacy sessions.

In the context of technology integration in teaching, training duration plays a vital role in shaping teachers' competence and confidence in using digital tools. Teachers who receive adequate and sustained training are more likely to effectively integrate technology into instruction, aligning with the principles of continuous professional growth emphasized in the Philippine Professional Standards for Teachers (DepEd, 2017).

**Extent Of Technology Integration Into Classroom Instruction**

**Lesson planning and assessment.** Table below involves the effective use of digital tools and resources—such as word processors, presentation software, and online repositories—to create engaging and standards-aligned instructional materials. Integrating technology in these processes enhances instructional quality, promotes learner engagement, and ensures alignment with 21st-century learning standards.

**Table 6**  
**Lesson Planning And Assessment**

Indicators	Mean	SD	Verbal Description
1. I use digital tools (Word, Canva, PowerPoint) when creating lesson plans.	4.52	0.68	<b>Always</b>
2. I access online curriculum or repositories when planning my lessons.	4.31	0.74	<b>Always</b>
3. I use digital rubrics, quizzes, or apps for assessing student performance.	4.05	0.83	<b>Often</b>
4. I prepare technology-supported activities that align with learning competencies.	4.18	0.79	<b>Often</b>
5. I submit lesson plans or reports through digital platforms.	4.47	0.71	<b>Always</b>
<b>Mean</b>	<b>4.31</b>		<b>Always</b>

Table 6 indicate a high level of technology integration in lesson planning and assessment, as shown by a composite mean of 4.31 (Always). Teachers consistently use digital tools such as Word, Canva, and PowerPoint when creating lesson plans and frequently access online repositories to enhance their instructional materials. The integration of digital rubrics and online assessment applications reflects a growing shift toward technology-supported evaluation methods.

The result suggest that teachers demonstrate competence and confidence in utilizing technology to plan, implement, and assess learning effectively. The consistent use of digital tools aligns with DepEd’s ICT Framework and the Philippine Professional Standards for Teachers (DepEd, 2017), which emphasize the integration of technology to support effective pedagogical practices. This finding also supports Obispo (2023), who highlighted that the strategic use of digital applications in lesson design and assessment promotes efficiency, collaboration, and innovation in classroom instruction.

**Student Engagement Tools.** Student engagement tools refer to various digital platforms, applications, and multimedia resources that teachers use to stimulate students’ interest, participation, and collaboration in the learning process. Integrating these tools into classroom instruction enhances learner motivation and provides interactive learning experiences quality, promotes learner engagement, and ensures alignment with 21st-century learning standards.

**Table 7**  
**Student Engagement**

Indicators	Mean	SD	Verbal Description
------------	------	----	--------------------

1. I use videos, interactive slides, or simulations to motivate student learning.	4.40	0.72	Always
2. I allow students to use mobile or computer-based tools for class activities.	4.18	0.80	Often
3. I integrate digital games or applications to enhance student participation.	4.05	0.87	Often
4. I encourage students to collaborate using shared documents or digital platforms.	4.27	0.77	Always
5. I gather student feedback using online tools (Google Forms, polls).	4.36	0.69	Always
Composite Mean	4.25		Always

Table 7 show a composite mean of 4.25 (Always), indicating that teachers consistently utilize digital tools to enhance student engagement. The highest mean value is observed in the use of videos, interactive slides, and simulations, suggesting that multimedia resources are highly favored for motivating learners and supporting understanding of concepts. Similarly, encouraging collaboration through shared documents and digital platforms received a high rating, reflecting the growing integration of collaborative online learning environments in classroom instruction.

The use of digital games, polls, and online feedback tools further indicates that teachers are open to incorporating interactive approaches that make learning more participatory and learner-centered. These findings align with Carcosia et al. (2025), who emphasized that interactive digital media positively affects students’ engagement and classroom participation. Moreover, Sung, An, and Thomas (2024) reported that integrating digital tools fosters students’ active learning behaviors and enhances collaboration, which supports the notion that technology serves as a catalyst for meaningful engagement.

**Teaching Strategies.** This table shows the systematic approaches, methods, and techniques that teachers employ to deliver instruction effectively and facilitate student learning. With the advancement of educational technology, teaching strategies have evolved to include blended learning, flipped classrooms, project-based learning, and collaborative digital platforms.

**Table 8**  
**Teaching Strategies**

Indicators	Mean	SD	Verbal Description
1. I apply blended or flipped classroom strategies using digital content.	4.22	0.81	Always
2. I vary my teaching approaches using ICT to meet diverse student needs.	4.36	0.75	Always
3. I incorporate project-based learning with the aid of technology.	4.18	0.79	Often
4. I use ICT to support group work, collaboration, or discussion activities.	4.27	0.77	Always
5. I explore new teaching strategies that make use of digital tools.	4.41	0.72	Always
<b>Composite Mean</b>	<b>4.29</b>		<b>Always</b>

The data reveal a composite mean of 4.29 (Always), which signifies that teachers frequently apply technology-based teaching strategies in their instructional practices. The highest-rated indicator, “I explore new teaching strategies that make use of digital tools,” implies that teachers are proactive and open to innovation, continuously adapting their teaching approaches to incorporate technological advancements.

The results also highlight the use of blended and flipped classroom methods, which demonstrate teachers’ flexibility in combining online and face-to-face learning experiences. The consistent use of ICT to support group work, collaboration, and project-based learning further indicates an emphasis on interactive and student-centered instruction.

Study of Sung, An, and Thomas (2024), who emphasized that teachers who adopt varied digital teaching approaches foster greater learner engagement and academic performance. Similarly, Obispo (2023) observed that technology-supported pedagogies encourage differentiated instruction and inclusive learning environments.

**Use of Digital Platforms.** This table details the digital systems and online environments that support the design, delivery, and management of learning experiences. These include learning management systems (LMS) such as Google Classroom, Moodle, or Schoology, which allow teachers to organize lessons, distribute materials, facilitate assessments, and communicate with learners. The integration of such platforms in teaching enhances accessibility, collaboration, and flexibility—particularly in implementing online or blended learning modalities.

**Table 9**  
**Use Of Digital Platforms**

Indicators	Mean	SD	Verbal Description
1. I use a learning management system (Google Classroom, Moodle) for class updates.	4.38	0.70	Always
2. I upload and manage digital learning materials on an educational platform.	4.27	0.76	Always
3. I conduct online or hybrid classes using online tools when necessary.	4.14	0.85	Often
4. I use platform-based features (quizzes, grading tools, announcements) in my teaching.	4.32	0.74	Always
5. I engage with parents or students through school or class-related online platforms.	4.08	0.83	Often
Composite Mean	4.24		Always

Table 9 reveal a composite mean of 4.24 (Always), indicating that teachers consistently utilize educational platforms in their teaching practices. The highest-rated indicator, “I use a learning management system (Google Classroom, Moodle) for class updates,” demonstrates that these platforms have become an essential component of classroom communication and management. Teachers also frequently use LMS features such as quizzes, grading tools, and announcements, which streamline instructional delivery and assessment processes.

The relatively high mean values across all indicators suggest that educational platforms play a central role in maintaining organized and interactive learning environments. The ability of teachers to upload, manage, and conduct classes online reflects their adaptability to technology-supported modalities, particularly in contexts requiring remote or hybrid learning. Obispo (2023) noted that teachers who regularly use educational platforms exhibit higher instructional efficiency and better engagement with learners.

**Use Of Ict Tools.** This table shows teachers’ ability to operate, manage, and apply various technological devices and digital resources to support instruction. This includes the effective handling of computers, projectors, printers, and other peripheral devices, as well as the responsible use of the internet and communication technologies to deliver content in both synchronous and asynchronous learning modalities

**Table 10**  
**Use Of Ict Tools**

Indicators	Mean	SD	Verbal Description
1. I operate basic ICT tools such as computers, projectors, and printers in my teaching.	4.45	0.69	Always
2. I regularly use internet resources to enhance lesson content.	4.38	0.74	Always
3. I apply ICT in both synchronous and asynchronous modes of teaching.	4.21	0.79	Always
4. I encourage the use of mobile phones/tablets for learning purposes when appropriate.	4.06	0.84	Often
5. I troubleshoot basic technical issues related to ICT tools on my own.	3.95	0.90	Often
Composite Mean	4.21		Always

The results yield a composite mean of 4.21 (Always), indicating that teachers demonstrate a high level of proficiency in using ICT tools for instructional purposes. The top-rated indicators—operating basic ICT equipment and utilizing internet resources—reflect teachers’ consistent application of technology in lesson delivery. This shows that they possess the technical competence necessary for integrating ICT into both face-to-face and online learning environments.

On the other hand, slightly lower mean values are observed for encouraging students’ use of mobile devices and troubleshooting technical issues, which may suggest that while teachers are adept at using technology, some still face limitations in maintenance and classroom management of personal digital devices.

**Public School Teachers Perceive The Role Of Technology And Innovation**

Public school teachers’ perception of the role of technology and innovation refers to how educators understand, value, and respond to the integration of technological tools and innovative practices in the teaching and learning process. It encompasses their beliefs, attitudes, and level of acceptance toward the use of digital resources, online platforms, and modern pedagogical approaches designed to enhance instructional effectiveness.

**Teaching Effectiveness.** The table tackles about the extent to which teachers successfully facilitate student learning, achieve instructional goals, and sustain learner engagement through appropriate methods and resources. In today’s technology-driven educational setting, effectiveness is not only measured by traditional pedagogical competence but also by the teacher’s ability to integrate digital tools and innovative strategies into instruction. The use of technology enhances lesson delivery, simplifies complex content, and promotes greater flexibility in teaching.

**Table 11**  
**Teaching Effectiveness**

Indicators	Mean	SD	Verbal Description
1. The use of technology helps me deliver lessons more effectively.	4.42	0.70	Strongly Agree
2. I am able to explain complex topics more clearly when I use digital tools.	4.36	0.73	Strongly Agree
3. Innovation in teaching makes my instruction more flexible and engaging.	4.40	0.72	Strongly Agree
4. I feel more confident teaching when I incorporate technology.	4.28	0.78	Strongly Agree
5. Technology reduces my workload in lesson delivery and assessment.	4.09	0.83	Agree
Composite Mean	4.31		Strongly Agree

The computed composite mean of 4.31 (Strongly Agree) indicates that teachers perceive technology as a vital component in enhancing their teaching effectiveness. Respondents strongly agreed that digital tools help them deliver lessons more effectively, clarify complex topics, and make instruction more engaging and flexible. These results suggest that technology supports instructional clarity and boosts teachers’ confidence in facilitating lessons.

The slightly lower mean rating on workload reduction implies that, although technology streamlines some teaching tasks, it may still involve time-consuming preparation and adaptation to digital tools. Nonetheless, the overall findings affirm that teachers recognize technology as a key contributor to effective teaching, consistent with UNESCO’s (2022) view that technology integration strengthens instructional design and learner engagement, and aligns with DepEd’s (2017) framework emphasizing ICT competence as an essential element of professional teaching practice.

**Student Participation and Engagement.** This table below discusses the level of learners’ active involvement, motivation, and interest during the learning process. When technology and innovation are integrated into classroom instruction, students are provided with opportunities to interact, collaborate, and explore learning content in more dynamic ways. Digital tools such as videos, simulations, and interactive platforms foster curiosity and sustain attention, allowing learners to participate meaningfully in class activities.

**Table 12**  
**Student Participation And Engagement**

Indicators	Mean	SD	Verbal Description
------------	------	----	--------------------

			<b>tion</b>
1. Students are more interested in lessons when technology is used.	4.45	0.67	Strongly Agree
2. The use of multimedia and interactive content increases student participation.	4.48	0.65	Strongly Agree
3. Technology-supported activities motivate students to complete tasks.	4.32	0.72	Strongly Agree
4. Students collaborate more when digital tools are integrated into class activities.	4.27	0.77	Strongly Agree
5. Using innovative strategies helps maintain student attention throughout the lesson.	4.36	0.70	Strongly Agree
Composite Mean	4.38		Strongly Agree

The composite mean of 4.38 (Strongly Agree) indicates that teachers perceive technology as a significant factor in enhancing student participation and engagement. The highest-rated indicators reveal that the use of multimedia and interactive content makes lessons more appealing and promotes active participation among learners. Respondents also strongly agreed that technology-supported and innovative strategies sustain students' interest and motivation to complete tasks, reflecting how digital integration transforms classroom interaction into a more engaging experience.

These findings align with UNESCO (2022), which states that interactive and technology-rich environments foster learner involvement and motivation. The results suggest that technology serves as a powerful catalyst for engagement, collaboration, and sustained participation—key components of effective and meaningful learning experiences in 21st-century education.

**Student Learning Outcomes.** Table below explains the measurable knowledge, skills, attitudes, and competencies that students demonstrate as a result of effective teaching and learning processes. In the context of technology integration, these outcomes are often enhanced through the use of digital tools, interactive platforms, and innovative teaching approaches that support active and personalized learning. Technology enables learners to visualize complex concepts, apply knowledge to real-life contexts, and collaborate with peers more effectively.

**Table 13**  
**Student Learning Outcomes**

<b>Indicators</b>	<b>Mean</b>	<b>SD</b>	<b>Verbal Description</b>
1. Students are more interested in lessons when technology is used.	4.45	0.67	Strongly Agree
2. The use of multimedia and interactive content increases student participation.	4.48	0.65	Strongly Agree
3. Technology-supported activities motivate students to complete tasks.	4.32	0.72	Strongly Agree
4. Students collaborate more when digital tools are integrated into class activities.	4.27	0.77	Strongly Agree
5. Using innovative strategies helps maintain student attention throughout the lesson.	4.36	0.70	Strongly Agree
Composite Mean	4.38		Strongly Agree

The composite mean of 4.35 (Strongly Agree) signifies that teachers strongly believe technology positively influences student learning outcomes. Respondents agreed that incorporating digital resources and project-based, technology-supported tasks enhances students’ understanding, retention, and overall academic performance. The consistent use of innovation also helps students connect classroom lessons to real-life applications, a key element of outcome-based education.

The results imply that technology serves as an effective enabler of academic achievement and holistic learning, consistent with the goals of the Philippine Professional Standards for Teachers (DepEd, 2017) to promote meaningful and technology-enhanced learning experiences. It also emphasized that the technology integration leads to deeper learning, improved comprehension, and higher-quality student output.

### Challenges And Barriers Related To Teachers Encounter In Integrating Technology And Innovation In Their Institution

The integration of technology and innovation in education presents numerous benefits but also brings significant challenges for teachers. Despite recognizing the importance of digital tools in improving teaching and learning, many educators face obstacles that limit their effective implementation.

**Challenges and Barriers.** In this table explains the factors that hinder teachers from effectively utilizing technology and innovation in their instructional practices. These include limitations in resources, infrastructure, professional training, time management, and institutional support. Despite the growing emphasis on digital integration, many teachers continue to face obstacles such as insufficient access to devices, slow internet connectivity, and inadequate technical assistance.

**Table 14**  
**Challenges And Barriers Encountered**

Indicators	Mean	SD	Verbal Description
1. Our school has limited computers or digital tools available for classroom use.	4.47	0.66	Strongly Agree
2. Internet connection in our school is often slow or unreliable.	4.52	0.63	Strongly Agree
3. Technical support is not always available when I need help with ICT tools.	4.29	0.75	Strongly Agree
4. I have not received enough training to use technology effectively in teaching.	4.20	0.81	Agree
5. I do not have enough time to prepare digital materials due to other responsibilities.	4.31	0.77	Strongly Agree
6. I feel hesitant or lack confidence in using new technology or teaching innovations.	4.06	0.83	Agree
7. Some technology tools are difficult to align with the lessons or learning objectives I teach.	4.15	0.80	Agree
8. Our school leadership does not provide clear guidance or support for using technology in teaching.	4.18	0.78	Agree
9. Some of my students lack access to devices or internet at home for	4.43	0.70	Strongly Agree

digital activities.			
10. Our school lacks the budget to maintain or upgrade existing technology tools.	4.49	0.65	Strongly Agree
Composite Mean	4.31		Strongly Agree

Table 14 reveals the composite mean of 4.31 (Strongly Agree) indicates that teachers strongly perceive several challenges and barriers in integrating technology and innovation into their teaching practices. The highest-rated concerns include limited access to computers and digital tools, unreliable internet connection, and inadequate school budgets for maintaining or upgrading technology. These findings reveal persistent structural and logistical limitations in public schools that restrict teachers’ ability to implement technology-based instruction effectively.

Respondents also agreed that insufficient training, lack of technical support, and time constraints further contribute to the difficulty of adopting innovative practices. Additionally, issues such as students’ unequal access to devices and connectivity at home exacerbate disparities in digital learning opportunities. These challenges align with UNESCO (2022) and Salazar (2019), who emphasized that successful technology integration requires equitable access, administrative support, and sustained professional development for teachers.

It strongly suggest that while teachers recognize the value of technology in improving instruction, systemic barriers and contextual limitations continue to hinder its full implementation. Addressing these issues through adequate funding, infrastructure improvement, and continuous ICT training would enhance teachers’ confidence, competence, and commitment to innovation in the classroom.

### Chapter 3

#### Summary, Findings, Conclusion And Recommendation

This chapter presents the summary of the entire study which served as the basis for findings, conclusion and recommendation.

#### Summary

This study assessed the technology integration in teaching and learning in selected elementary schools in the province of Bohol for the school year 2025-2026 as basis for an action plan. To examine its influence on teaching effectiveness and student learning outcomes, and to identify the challenges and barriers that affect its implementation.

The study utilized a descriptive research design with a validated survey questionnaire as the primary instrument for data collection. Respondents consisted of 100 public-school teachers who were asked to assess their use of technology across several dimensions: Lesson Planning and Assessment, Student Engagement Tools, Teaching Strategies, Educational Platforms, Use of ICT Tools, Teaching Effectiveness, Student Participation and Engagement, and Student Learning Outcomes. Mean and standard deviation were used to determine the level of practice, while descriptive analysis was applied to interpret the results.

The findings of the study provided insights into teachers’ technological competence, the effects of innovation on instruction, and the institutional barriers that influence technology integration in public schools.

## Findings

The findings of the study revealed that public school teachers exhibit a high level of technology and innovation integration in their instructional practices. Results showed that teachers consistently utilize digital tools and platforms in preparing lesson plans, assessing learners, and delivering instruction. Specifically, a high level of integration was observed in Lesson Planning and Assessment ( $M = 4.31$ ), Student Engagement Tools ( $M = 4.25$ ), Teaching Strategies ( $M = 4.29$ ), Educational Platforms ( $M = 4.24$ ), and Use of ICT Tools ( $M = 4.21$ ). These findings indicate that teachers are confident and competent in applying technology to enhance lesson delivery, promote learner participation, and support various teaching tasks. This demonstrates that technology has become an integral component of classroom practices in public schools.

In addition, the teachers strongly agreed that technology significantly contributes to the improvement of their teaching effectiveness and student learning experiences. They perceived that the use of digital tools makes lessons clearer, more flexible, and engaging, thereby improving instructional quality. The data revealed that the integration of technology enhances students' motivation, participation, and understanding of lessons, as reflected in the high composite means for Teaching Effectiveness ( $M = 4.31$ ), Student Participation and Engagement ( $M = 4.38$ ), and Student Learning Outcomes ( $M = 4.35$ ). These results affirm that technology-supported instruction fosters a more interactive, learner-centered environment that enhances academic performance and overall classroom engagement.

Despite these positive perceptions, the study also highlighted several challenges and barriers that hinder the full implementation of technology and innovation in public schools. Teachers strongly agreed that they continue to face constraints such as limited access to computers and digital devices, unstable internet connectivity, insufficient training opportunities, and inadequate budgetary and technical support ( $M = 4.31$ ). Additionally, time constraints, heavy workloads, and uneven student access to digital resources remain persistent issues that affect consistent technology use. These barriers suggest that while teachers are willing and capable of integrating technology, institutional and infrastructural limitations restrict their ability to fully maximize its potential in teaching and learning.

Lastly, the findings indicate that teachers maintain a positive attitude toward technology integration and recognize its essential role in promoting effective instruction and meaningful learning. However, the sustainability and depth of integration largely depend on the availability of institutional support, adequate infrastructure, and continuous professional development. Addressing these challenges will not only enhance teachers' digital competence but also strengthen the implementation of technology-driven innovations in Philippine public education.

## Conclusion

Based on the findings of the study, it is concluded that public school teachers demonstrate a high level of technology integration across various areas of instructional practice. Teachers effectively incorporate digital tools, learning platforms, and innovative strategies in lesson preparation, delivery, and assessment. The success and sustainability of technology integration in teaching depend on the combined efforts of teachers, administrators, and policymakers. Strengthening infrastructure, providing continuous capacity-building programs, and fostering supportive leadership are essential steps toward

ensuring that technology integration becomes an enduring component of effective, equitable, and innovative education in public schools.

## Recommendation

In light of the study's findings and conclusions, several recommendations are proposed to strengthen the integration of technology and innovation in public school. First, school administrators and education policymakers should prioritize the enhancement of ICT infrastructure by providing sufficient computers, reliable internet connectivity, and updated digital equipment. Second, the Department of Education should institutionalize continuous professional development programs focused on ICT competency and innovative teaching strategies. Third, it is recommended that school leaders provide clear administrative and policy support to promote a culture of innovation. Fourth is a need a collaboration with local government units and community stakeholders should be strengthened to ensure equitable access for all learners, particularly those with limited connectivity or devices at home, and the last one the researcher recommends the conduct of further studies that examine technology integration in various educational contexts—such as different grade levels, subject areas, or geographic locations—to expand understanding of how digital innovation impacts teaching performance and learner outcomes.

## Chapter 4

### Output Of The Study

#### Rationale

Technology integration and innovation have become vital components of 21st-century teaching and learning. An in-depth understanding of digital tools and their applications is essential for teachers to deliver instruction that meets the competencies outlined in the Philippine Professional Standards for Teachers (PPST) and the Department of Education's ICT Framework. The findings of the study revealed that while teachers demonstrated a high level of competence in using technology, several challenges still hinder its full implementation. These include limited access to ICT resources, unstable internet connectivity, insufficient technical support, and lack of continuous training.

To address these issues, an Action Plan must be implemented to enhance teachers' performance, confidence, and mastery in integrating technology into the teaching-learning process. The proposed plan aims to equip teachers with updated digital skills, strengthen institutional support systems, and promote innovation in classroom instruction. By addressing the identified barriers, teachers will be more capable of delivering technology-enhanced lessons, improving students' engagement, and achieving desired learning outcomes. Ultimately, this initiative will contribute to the development of a more dynamic, inclusive, and technology-driven educational environment in public schools.

#### Objectives:

1. To enhance teachers' competence in integrating technology and innovation into classroom instruction.
2. To provide professional development programs and trainings that strengthen teachers' digital literacy and confidence in using digital tools.
3. Create documents and manipulate its appearances and text
4. To increase access to ICT facilities and improve the reliability of internet connectivity in schools.

5. To promote the use of learning management systems (LMS) and other educational platforms for instructional delivery and assessment.
6. To encourage the adoption of innovative teaching strategies that support student engagement and participation.
7. To establish administrative and policy support systems that sustain technology integration efforts.
8. To improve teachers' performance and students' learning outcomes through consistent and effective use of technology.

### **Target Participants**

The target participants of this action plan are the School Heads, Assistant Principals, ICT Coordinators, Master Teachers, Classroom Teachers, and Parents-Teachers Association (PTA) Officers from selected public schools within the Division of Bohol. Their collaboration is vital in implementing training programs, strengthening ICT resources, and ensuring that technology integration initiatives are sustained across grade levels and learning areas.

### **Scheme of Implementation**

The successful implementation of this action plan requires the collective commitment and cooperation of all stakeholders. School administrators shall spearhead the planning, resource allocation, and monitoring of ICT-related activities, while ICT coordinators and master teachers shall facilitate training and mentoring sessions. Teachers will actively participate in capacity-building programs and apply the acquired skills in their instructional practices. The PTA and local government units are encouraged to extend support in terms of funding, resource provision, and technical assistance.

The proposed action plan will be submitted to the Schools Division Superintendent for evaluation, approval, and integration into the division's professional development programs. Its implementation will not only improve teachers' technological proficiency but will also ensure the effective and sustainable integration of innovation in classroom instruction, ultimately enhancing both teaching quality and student learning performance.

No.	Areas of Concern	Objectives	Strategies / Activities	Persons Involved	Budgetary Requirements	Source of Budget	Time Frame	Expected Outcome	Actual Accomplishment	Remarks
1	Limited ICT tools and equipment in schools	To improve the availability and accessibility of ICT resources for teachers	Conduct ICT inventory; request for procurement of additional computers, projectors, and printers through LGU or DepEd funding	School Head, ICT Coordinator, LGU Officials	₱80,000	School MOOE / LGU Support	June–August 2025	Teachers have adequate access to ICT tools and devices		
2	Unstable internet connectivity	To ensure reliable and consistent internet connection for teaching and administrative use	Coordinate with service providers; install routers or Wi-Fi boosters in classrooms	School Head, ICT Coordinator, Service Provider	₱30,000	School MOOE	July–September 2025	Improved internet connectivity with stable access in classrooms		
3	Lack of ICT-related training	To enhance teachers' digital competence and confidence in using technology	Conduct ICT training, webinars, and peer mentoring on technology integration	Master Teachers, ICT Coordinator, Trainers	₱10,000	School MOOE / Partnership Support	Quarterly	Teachers demonstrate improved digital literacy and classroom application		

4	Teachers' workload and time constraints	To lessen teachers' workload through ICT-supported systems	Create digital repository of lesson exemplars, templates, and assessment tools	ICT Coordinator, Master Teachers	₱5,000	School MOOE	August–December 2025	Teachers utilize digital resources to save preparation time		
5	Hesitancy and low confidence in using new technologies	To build teachers' confidence and motivation in technology use	Implement peer coaching and classroom demonstrations of ICT best practices	Master Teachers, Department Heads	Minimal	None (school-based)	Quarterly	Teachers show increased confidence and engagement in digital teaching		
6	Difficulty in aligning technology with curriculum goals	To assist teachers in developing ICT-based lesson plans aligned with learning objectives	Develop contextualized exemplar lesson plans integrating digital tools	Department Heads, ICT Teachers	₱3,000	School MOOE	August–November 2025	Teachers integrate ICT tools in 100% of subject lessons		
7	Lack of clear ICT policy and leadership guidance	To institutionalize ICT integration through formal school policy	Formulate and adopt a School ICT Policy and Implementation Guidelines	School Head, ICT Committee	₱2,000	School MOOE	September–December 2025	School ICT policy approved and implemented		
8	Unequal	To promote	Organize communi-	School Head,	₱20,000	PTA / LGU /	July–Octo-	In-creased		

	student access to devices and internet	digital inclusion among learners	ty Wi-Fi hubs and device donation drives	PTA, LGU, NGO Partners		NGO	ber 2025	number of students with access to digital learning tools		
9	Insufficient budget for ICT maintenance and upgrades	To ensure sustainability of ICT resources	Include ICT maintenance and upgrades in the School Improvement Plan (SIP)	School Head, Budget Officer	₱15,000	SIP / MOOE Allocation	Annually	Continuous maintenance and availability of ICT tools		
10	Low student engagement in technology-based activities	To enhance student motivation and learning outcome	Integrate multimedia, gamified apps, and project-based learning	Classroom Teachers, ICT Coordinator	₱10,000	School MOOE	School Year 2025–2026	Improved student participation and higher performance levels		

### References

1. Abun, D., Magallanes, T., & Encarnacion, M. (2020). Teachers' attitudes and competencies on the use of educational technology: Implications for teaching performance. *International Journal of Research Publications*, 54(1), 1–15. <https://doi.org/10.47119/IJRP100541420202002>
2. Cabero-Almenara, J., & Llorente-Cejudo, C. (2020). The role of ICT in the teaching–learning process: Benefits, barriers, and future directions. *Education and Information Technologies*, 25(5), 1–21. <https://doi.org/10.1007/s10639-019-09944-2>
3. Department of Education (DepEd). (2017). *Philippine Professional Standards for Teachers (PPST)*. Department of Education Order No. 42, s. 2017. Pasig City, Philippines.
4. Department of Education (DepEd). (2020). *DepEd ICT Literacy Framework for Teachers and School Leaders*. Department of Education – Information and Communications Technology Service.

5. Hennessy, S., Onguko, B., Ang'ondi, E., Namalefe, S., Harrison, D., & Wamakote, L. (2010). Developing the use of ICT to enhance teaching and learning in East African schools: Review of the literature. Cambridge Education.
6. Obispo, L. C. (2023). Teachers' perception on technology integration and its influence on student engagement. *Asia Pacific Journal of Educational Research*, 5(2), 112–128.
7. Sung, Y., An, J., & Thomas, M. (2024). Technology integration in education: How digital tools support active learning and innovation in classrooms. *Computers & Education*, 205, 104859. <https://doi.org/10.1016/j.compedu.2023.104859>
8. UNESCO. (2022). Technology in education: A tool on whose terms? Global Education Monitoring Report. United Nations Educational, Scientific and Cultural Organization. <https://www.unesco.org/gem-report>
9. UNESCO. (2019). ICT Competency Framework for Teachers (Version 3). United Nations Educational, Scientific and Cultural Organization. <https://unesdoc.unesco.org/ark:/48223/pf0000371024>
10. Villanueva, M. C., & Salazar, J. P. (2019). Challenges in integrating ICT in public schools: Basis for developing a training program for teachers. *Philippine Journal of Education Studies*, 94(1), 54–70.
11. World Bank. (2020). Reimagining human connections: Technology and education during the COVID-19 crisis. Washington, DC: The World Bank.