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Technology Integration in Luna Central School: Challenges and Opportunities

Shemalyn Arellano Bugaring

ABSTRACT

This study explores the current state of technology integration at Luna Central School, with a focus on identifying prevailing challenges and uncovering potential opportunities for enhancing digital teaching and learning practices. Using a mixed-methods approach, the research gathered data from both learners and teachers through surveys and observations. Key findings revealed that while learners generally respond positively to technology-enhanced lessons—demonstrating increased engagement and motivation compared to traditional teaching methods—access to technological resources remains inconsistent both at home and in school. Smartphones are the most accessible devices among students, but limited access to internet connectivity, tablets, and computers poses significant barriers to equitable learning experiences.

On the instructional side, teachers showed varying levels of technological proficiency, with most identifying as intermediate users. The use of digital tools such as educational videos, interactive quizzes, and online platforms was evident, although adoption remains narrow in scope. Teachers reported increased student engagement when using technology; however, some highlighted challenges including pacing difficulties and uneven participation. Notably, administrative support was identified as a major constraint, with all respondents indicating a lack of backing from school leadership and the absence of enabling school policies to guide and sustain technology integration efforts.

The study concludes that while the potential of ICT to enrich instruction and learning is recognized by both students and teachers, its full realization is hindered by infrastructural limitations, insufficient training, and a critical lack of institutional support. Recommendations include the development of school-wide ICT policies, targeted professional development, improved access to digital tools, and strengthened leadership commitment to foster a more inclusive, effective, and sustainable integration of technology in education.

Keywords: Educational Technology Access, challenges and opportunities, Student Engagement, Technology Integration, Administrative Support

THE PROBLEM AND ITS BACKGROUND

Introduction

In today's knowledge-driven society, Information and Communication Technology (ICT) has emerged as a cornerstone of modern education. Around the world, the integration of technology into classrooms has reshaped the ways in which students learn and teachers deliver instruction. From enhancing learner engagement to improving access to educational content, ICT is widely recognized as a transformative tool that promotes inclusive and equitable quality education [1}. In technologically advanced countries such as Finland, South Korea, and Singapore, technology integration is fully embedded in national

education strategies and classroom practice, contributing to innovation, personalized learning, and higher academic achievement [2].

However, in many developing nations, the implementation of ICT in education presents complex challenges. Infrastructure limitations, insufficient teacher training, limited access to digital devices, and socio-economic disparities hinder effective technology use in schools [3]. The COVID-19 pandemic further emphasized the urgency of digital transformation while simultaneously exposing and exacerbating existing inequalities in access to learning technologies [4]. In this context, the digital divide not only reflects global inequalities but also reinforces existing educational disadvantages, especially in remote and rural areas.

The Philippines, like many other countries, has committed to integrating technology in basic education through various policies and initiatives, such as the Department of Education's (DepEd) Computerization Program, the ICT in Education Strategic Framework, and the Learning Continuity Plan implemented during the pandemic [5] [6]. While these efforts have made strides in equipping schools with digital resources and teacher training, disparities remain stark between urban and rural educational contexts. Many public schools, especially those in geographically isolated and disadvantaged areas (GIDAs), still face serious challenges in achieving meaningful ICT integration [7].

Luna Central School, situated in the municipality of Luna, Apayao in Northern Luzon, represents a microcosm of this broader national struggle. The school serves a diverse population of learners, there are learners who belong to socio-economically average groups. In this context, integrating ICT into the teaching and learning process is both a challenge and a necessity. Although some initiatives have introduced basic ICT tools to the school, several constraints persist. Furthermore, many teachers continue to struggle with adapting their pedagogical approaches to effectively utilize technology, while learners often have limited exposure to digital tools outside of school.

Despite these constraints, there are opportunities. The presence of dedicated educators, supportive school leadership, and community engagement offer potential pathways for sustainable and context-sensitive technology integration. Understanding how the school navigates both the difficulties and the possibilities of ICT use is essential for designing interventions that are culturally appropriate, locally relevant, and pedagogically sound.

This study, therefore, seeks to determine the challenges and opportunities associated with technology integration in Luna Central School. By situating the inquiry within both international and local contexts, the research contributes to the global discourse on digital equity while offering practical insights for improving ICT implementation in rural Philippine schools. It aligns with the goals of Sustainable Development Goal 4 (Quality Education), which emphasizes the role of technology in ensuring inclusive and equitable learning opportunities for all [8].

Statement of the Problem

The advent of the digital age has irrevocably transformed various sectors of society, including education. Technology, with its potential to revolutionize teaching and learning, has become an indispensable tool in modern classrooms. However, many elementary schools in Luna, Apayao particularly Luna Central School, face significant challenges related to technology. Hence this study is proposed to determine the challenges and opportunities as the technology integrated in the elementary school’s classes.

The research sought to address the following questions:

1. What is the current status of ICT in Luna Central School in terms of:
   1.1. The extent of pupils' access and usage of technology resources at school and home, and
   1.2. Pupils' experiences with technology in learning?
2. What are the challenges faced by the teachers at Luna Central School in integrating technology into teaching and learning practices?
3. What is the response of teachers' technology-integrated lessons in terms of engagement and learning?
4. What opportunities exist for professional development to enhance teacher's skills in technology integration at Luna Central School?

Theoretical Framework

This study is anchored on the Constructivism and Connectivism theories as well as the Technological Pedagogical Content Knowledge (TPCK). In constructivism theory, this learning theory is rooted in the work of Piaget and Vygotsky, which suggests that learners actively construct knowledge through interaction with their environment. Digital technologies can provide rich and diverse learning environments that stimulate cognitive development. By engaging with digital tools, students can actively explore, experiment, and construct their understanding [9].

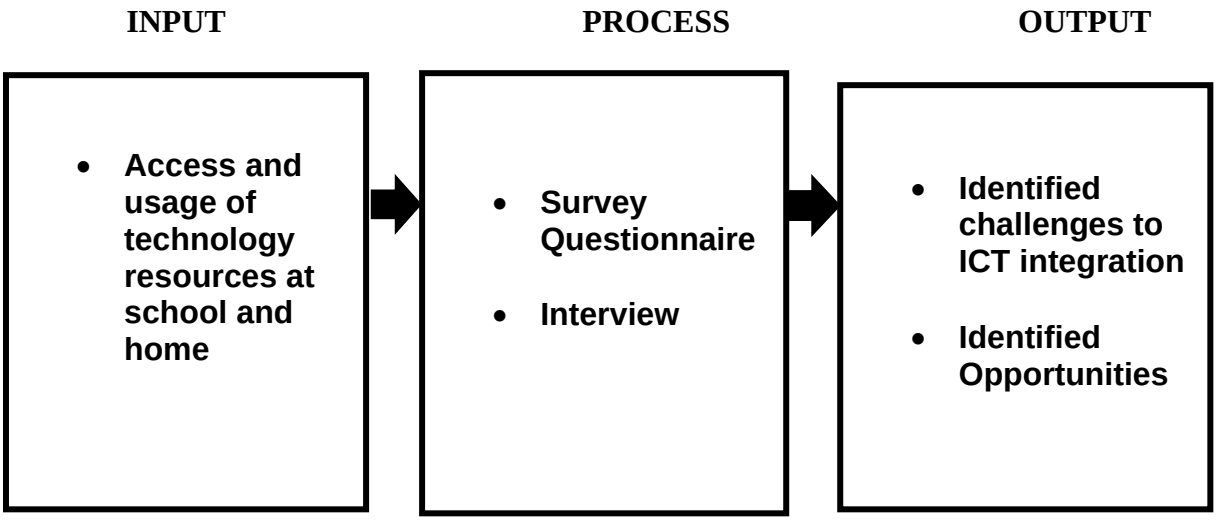
On the other hand, the Connectivism, a more recent theory, emphasizes the importance of networks and connections in learning. In the digital age, learners can access information and collaborate with others from around the world through online platforms and social media [10]. Digital technologies facilitate the creation and maintenance of these networks, enabling learners to build knowledge and skills collaboratively. Connectivism suggests that learning is not about passively absorbing information, but actively engaging with a dynamic network of knowledge and connections. It highlights the importance of critical thinking, collaboration, and lifelong learning in a rapidly changing world [11].

In addition of the theory that supports the study is the Technological Pedagogical Content Knowledge (TPCK). This framework was developed by Mishra and Koehler (2006), which highlights the importance of integrating technological, pedagogical, and content knowledge [12]. Effective technology integration requires teachers to possess a deep understanding of both the subject matter and the appropriate use of technology to enhance learning. TPCK guides educators in designing and delivering lessons that effectively integrate technology to improve student outcomes. It emphasizes that successful teaching with technology requires more than just knowing how to use tools—it demands a deep integration of all three domains (Content Knowledge (CK), Pedagogical Knowledge (PK) and Technological Knowledge (TK) [13].

Conceptual Framework

The conceptual framework of the study outlines the key factors that influence the successful integration of technology in education, as well as the potential outcomes of such integration.

Figure 1. Research Paradigm



RESEARCH METHODOLOGY

Research Design

This research employed a mixed-methods research design, combining both qualitative and quantitative approaches. This approach would allow for a comprehensive understanding of the challenges and opportunities of technology integration in Luna Central School.

Respondents of the Study

The respondents of this study comprised two distinct groups. The first group consisted of ten (10) teachers from diverse grade levels (Grades 1 to 6) within Luna Central School, situated in Poblacion, Luna, Apayao. These teacher-respondents furnished data pertaining to the challenges in technology integration, self-perception of technology skills, learners' engagement and learning and administrative support.

The second group comprised pupils from Grades 5 and 6 of the same educational institution, totaling one hundred forty-seven (147) students. The distribution of the study participants is detailed in Table 1.

Teacher and pupil-respondents

RESPONDENTS	GRADE LEVEL	GENDER		TOTAL
		Male	Female	
Teachers	**Grades 1 - 6**	**1**	**9**	**10**
Pupils	**Grade 5**	6	13	19
	Grade 6	18	13	31
Total		25	35	60

Out of the total population of one hundred forty-seven (147) Grade 5 and 6 pupils at Luna Central School, a purposive sampling strategy was employed to select fifty (50) pupils as respondents for this study. The inclusion criteria for pupil participation were based on the following criteria:

Enrollment Status: Only pupils currently enrolled in the targeted grade level or class were considered to ensure relevance to the study's focus.

Willingness and Consent: Participation was limited to pupils who voluntarily agreed to participate and whose parents or guardians provided informed consent, ensuring ethical compliance and genuine engagement.

Technology Access: Only pupils who have technology gadgets were included as respondents in the questionnaire.

Availability and Accessibility: Only pupils who were present during the data collection period and able to complete the study requirements (e.g., questionnaires, interviews) were included to maximize data completeness and reliability.

The application of these specific inclusion criteria aimed to gather rich and relevant data from pupils who could provide meaningful insights into learner's responses to technology integrated lessons compared to traditional teaching methods in terms of engagement and learning. While this resulted in a subset of the total pupil population, the purposive selection ensured that the respondents possessed characteristics pertinent to the research questions, thereby enhancing the depth and quality of the qualitative data obtained from this group. The respondents of this study included 10 teachers from various grade levels in Luna Central School located at Poblacion, Luna, Apayao and Grade 5 and 6 pupils of the same elementary school with a total of 147 pupils.

Research Instrument

A mixed-methods research instrument was utilized to examine the challenges and opportunities of technology integration in Luna Central School at Poblacion, Luna, Apayao.

There were two instruments utilized during the conduct of this study. The survey questionnaires were adopted from instruments utilized by EE. Smith, R. Kahlke,and T. Judd [13]. The data used in the study were gathered using the following instruments:

1. Questionnaire for Teachers. This is a survey questionnaire that consists of 15-items and two (2) open ended questions. The questionnaires were utilized in gathering the data on challenges met by the teachers of Luna Central School on integrating technology on their classes, learners' engagement and learning as well as administrative support and school policies. The following Five Point Likert's Scale was utilized during the study.

Teacher and Pupil Respondents

Scale	Limits of Description	Verbal Description	Interpretation
1	4.20-5.00	Strongly Agree	Very High
4	3.40-4.19	Agree	High
3	2.60 -3.39	Slightly Agree	Moderate
2	1.80-2.59	Disagree	Low
1	1.00-1.59	Strongly Disagree	Very Low

2. Questionnaire for Grade 5 and 6 Pupils. This is a survey questionnaire that consists of 21- items and one (1) question. The questionnaires were utilized in gathering the data on access and usage of technology at home and school by the Grade 5 and Grade 6 pupils of Luna Central School. The survey

instrument was used for gathering data on pupils' experience with technology in learning, engagement and learning preferences. Table shows the Document Analysis was also being done on the gathered data in the survey and interview during the conduct of the study. Appendixes B.1 and B.2 present the survey questionnaire utilized in gathering the data from the teacher and pupils-respondents.

Data Gathering Procedure

The data gathering procedure for this study was carried out systematically to ensure the collection of reliable and relevant information. The process followed the
steps below:

First was the preparation and approval. The researcher first prepared all necessary documents, including the research proposal, data gathering instruments (e.g., survey questionnaires and interview guides), and informed consent forms. These were submitted to the thesis adviser and panel for review. Upon approval, a formal letter requesting permission to conduct the study was sent to the Office of the School Head of Luna Central School. Once approval was granted, the researcher proceeded with the actual data collection.

Second was the participant selection. The study employed purposive sampling to identify key respondents such as teachers, school administrators, and ICT coordinators who are directly involved in the integration of technology in teaching and learning. Their experience and engagement with technology made them ideal participants for providing relevant insights into the challenges and opportunities faced in the school.

Third was the distribution of survey questionnaires. Survey was done through online platform to 10 teachers of Luna Central School. Likewise, online platform were also conducted among Grade 5 and Grade 6 pupils of the same school. Only 50 pupils of both Grade 5 and 6 responded out of 147 pupils. The researcher explained the purpose of the study, assured confidentiality, and asked for voluntary participation. Participants were given ample time to answer the questionnaire, typically within 3–5 days. Follow-ups were conducted to retrieve the completed forms.

Fourth was the conduct of interviews. To gather deeper insights, semi-structured interviews were conducted with three elementary teachers of Luna Central School. The interviews focused on personal experiences, perceptions of technology use in the classroom, and the barriers and enablers of effective technology integration. Interviews were recorded (with consent) and transcribed for analysis.

And the fifth was the organization of data. Upon collecting the data, the researcher reviewed all responses for completeness and consistency.

The data were then organized and encoded for their analysis.

Data Analysis

The collected quantitative data from surveys were subjected to descriptive statistics such as frequency, percentage, and mean. Qualitative data from interviews were analyzed thematically to identify recurring patterns and themes related to challenges and opportunities in technology integration. The survey instrument that was used for gathering data on pupils' experience with technology in learning, engagement and learning preferences utilized the 5 point Likert scale 1 to 5 as verbally described as "always "to "never".

Document Analysis was also being done on the gathered data in the survey and interview during the conduct of the study. Appendixes B.1 and B.2 present the survey questionnaire utilized in gathering the

data from the teacher and pupils-respondents.

Ethical Considerations

The study adhered to strict ethical standards. Participants were informed about the study's purpose, objectives, and scope, and their participation was voluntary. Data was kept confidential and anonymize, and permission was obtained from the School Head of Luna Central School. The researcher treated participants respectfully, minimized risk and harm, and reported data truthfully, avoiding fabrication, manipulation, or misrepresentation. The study was conducted in accordance with institutional policies and guidelines, ensuring the confidentiality and integrity of the data.

RESULT AND DISCUSSION

This section presents the analyzed data gathered from surveys conducted among pupils and teachers of Luna Central School, focusing on their access to, usage of, and perceptions regarding the integration of technology in the learning environment. The narrative also reflects the lived experiences, voices, and challenges faced by the stakeholders involved.

1. **Current status of ICT in Luna Central School in terms of pupils' access and usage of technology at school and home, and experience with technology in learning** **Usage and Access of Technology at School**

Statement	**Mean**	**Verbal Description**
1. Are you allowed to use a tablet or computer during your class activities?	2.64	Sometimes
2. Do you have access to the internet when using technology in school?	2.56	Rarely
3. Do you watch educational videos during your lessons in class?	3.50	Often
4. Do you use interactive tools like online quizzes or games during learning activities?	3.00	Sometimes
5. Do you use technology to research or look for information related to your lessons?	2.40	Rarely
Weighted Mean	**2.82**	**Sometimes**

The data indicate that technology integration within Luna Central School is present but inconsistent. Learners **sometimes** use tablets or computers during class activities with a mean of 2.64, and **rarely** have access to the internet at school with a mean of 2.56. This limited connectivity is a significant barrier, likely restricting the full potential of technology-enhanced learning. Watching educational videos is **often** incorporated with a mean of 3.50, suggesting that teachers leverage multimedia to supplement instruction. However, the **sometimes** use of interactive tools with a mean of 3.00 and the **rare** use of technology for research with a mean of 2.40, imply that deeper, student-driven engagement with digital resources is not yet fully realized. These findings highlight both the progress and the constraints in the school's current technology landscape, with access and infrastructure remaining critical issues.

Usage and Access of Technology at Home

Statement	Mean	Verbal Description
1. Do you use a smartphone, tablet, or computer at home?	3.72	Often
2. Do you use the internet at home to help with your schoolwork?	3.28	Sometimes
3. Do you watch educational videos (like on YouTube or DepEd TV) at home?	3.00	Sometimes
4. Do your parents or family members help you use technology for learning at home?	4.14	Often
5. Do you play educational games or use learning apps at home?	3.02	Sometimes
Weighted Mean	**3.43**	**Sometimes**

At home, students report **often** using devices with a mean of 3.72 and receiving substantial family support in technology use having a mean of 4.14, which is a notable opportunity for extending learning beyond the classroom. Internet use to support schoolwork occurs **sometimes** with a mean of 3.28, and educational videos are also watched **sometimes** with a mean of 3.00. The **sometimes** engagement with educational games and learning apps having a mean of 3.02 suggests moderate but not optimal use of technology for learning at home. The strong family involvement is a key asset, indicating that parental support could be leveraged to reinforce technology-based learning.

Experience with Technology in Learning

Statement	Mean	Verbal Description
1. Does your teacher use a computer, tablet, or projector during lessons?	4.38	Always
2. Do you use digital tools (like videos, games, or quizzes) to help you learn in class?	3.42	Often
3. Do you feel excited or more interested in class when technology is used?	4.00	Often
4. Are you asked to answer questions or do activities using a digital device during lessons?	3.18	Sometimes
5. Do you work with your classmates using technology (like group games or online quizzes)?	3.02	Sometimes
Weighted Mean	**3.60**	**Often**

Teachers at Luna Central School always use digital devices during lessons as reflected in the mean of 4.38, reflecting a high level of teacher-led technology integration. Learners often use digital tools for learning with a mean of 3.42, feel often excited and interested when technology is used as manifested by its mean of 4.00, and are sometimes asked to complete activities using digital devices having a mean of

3.18. Collaboration through technology with classmates occurs sometimes as indicated by the mean of 3.02, indicating room for growth in fostering digital collaboration and interactive learning experiences.

3. Challenges Faced by the Teachers at Luna Central School in Integrating Technology into Teaching and Learning Practices

Statement	Mean	Verbal Description
1. I experience difficulty due to limited availability of technological devices in the classroom.	3.5	Slightly agree
2. Unstable or slow internet connection affects my ability to use technology effectively in teaching.	3.7	Agree
3. I lack sufficient training or professional development in using educational technology tools.	4.0	Agree
4. Technical issues or lack of technical support hinder my use of technology in the classroom.	4.1	Agree
5. I find it challenging to manage class time effectively when using technology in lessons.	3.2	Slightly agree
Weighted Mean	**3.7**	**Agree**

The data gathered from teacher-respondents at Luna Central School reveal that significant challenges continue to impede the effective integration of technology in classroom instruction. With an overall weighted mean of 3.7, teachers generally agree that these obstacles are substantial and persistent. Among the most pressing issues are technical barriers, as evidenced by a strong consensus regarding frequent technical issues and the lack of adequate technical support having a mean of 4.1. Unstable or slow internet connectivity indicated a mean of 3.7, further compounds these infrastructural deficiencies, making it difficult for teachers to consistently utilize digital tools and resources.

Another critical challenge identified is the lack of sufficient training or professional development in the use of educational technology. Teachers agree as reflected in the mean of 4.0 that more targeted and ongoing training is necessary to build their confidence and competence in integrating technology effectively into their teaching practices. Additionally, while the limited availability of technological devices in classrooms received a moderate level of agreement with a mean of 3.5, it nonetheless represents a logistical hurdle that restricts the full realization of technology's potential in education.

Time management also emerges as a concern, though to a lesser extent. Teachers only slightly agree as manifested by the mean of 3.2 that the use of technology disrupts class time, suggesting that while some difficulties exist, many educators have developed adaptive strategies to manage their lessons effectively, even when incorporating digital tools.

Overall, these findings highlight that infrastructural limitations and insufficient training are the most critical barriers to successful technology integration at Luna Central School. Despite these challenges, teachers demonstrate a notable degree of resilience and adaptability, striving to incorporate technology into their teaching as effectively as possible, albeit under less-than-ideal circumstances. This underscores the need for systemic improvements in both infrastructure and professional development to bridge the gap between the intent to integrate technology and its practical execution in the classroom.

4. The response of teachers to technology-integrated lessons in terms of engagement and learning

Statement	Mean	Verbal Description
1. The learners feel more interested in lessons that use technology than in traditional lessons.	4.1	Agree
2. The learners learn better when my teacher uses technology, like videos, games, or presentations.	4.4	Agree
3. The learners participate more in class when we use digital tools compared to regular lessons.	4.6	Strongly Agree
4. The learners remember the lessons more when technology is used in teaching.	4.1	Agree
5. Technology-integrated lessons help learners understand the topic better than traditional teaching.	4.3	Agree
Weighted Mean	4.3	Agree

The survey results from teacher-respondents at Luna Central School clearly demonstrate a strong consensus regarding the positive impact of technology on learner engagement and academic outcomes. With a high weighted mean of 4.3, teachers overwhelmingly agree that the integration of technology significantly enhances the learning experience for learners. Teachers observe that students participate more actively in class when digital tools are incorporated into lessons, as indicated by the highest mean of 4.6 for student participation. This heightened engagement is complemented by improved retention, with a mean of 4.1 suggesting that students remember lessons better when technology is utilized. Furthermore, there is strong agreement among teachers that technology fosters greater comprehension, with a mean of 4.3 for students' understanding of topics, and increases students' interest in lessons, also reflected by a mean of 4.1.

Administrative Support

Weighted Mean	4.3	Agree
1. The school administration encourages teachers to use technology in classroom instruction.	4.38	Agree
2. There are clear school policies that support the integration of technology in teaching and learning.	3.42	Slightly Agree
3. The school provides training or professional development on the use of educational technology.	3.30	Slightly Agree
4. The administration allocates budget or resources for improving technology access in the classroom.	3.28	Slightly Agree
5. Technical support is available in our school when problems with devices or connectivity arise**.**	3.02	Slightly Agree
Weighted Mean	**3.48**	**Agree**

These findings collectively highlight technology's role as a powerful pedagogical tool at Luna Central School. The data validate the capacity of technology to foster active engagement, deepen understanding,

and stimulate learners' interest. As such, technology integration not only modernizes instructional practices but also aligns with student-centered learning paradigms, ultimately supporting more effective and meaningful educational experiences. The findings regarding administrative support and school policies at Luna Central School reveal a nuanced picture. While teachers generally agree that some level of support exists, as reflected by a weighted mean of 3.48, their responses highlight notable inconsistencies in the nature and effectiveness of this support.

Teachers strongly agree that the school administration encourages the use of technology in classroom instruction, with a high mean score of 4.38. However, this encouragement does not consistently translate into concrete, tangible support. The ratings for clear school policies supporting technology integration as shown by its mean of 3.42, provision of training or professional development with a mean of 3.30, allocation of budget or resources having a mean of 3.28, and availability of technical support as indicated by the mean of 3.02 are comparatively lower, indicating lukewarm or only moderate institutional backing.

These results suggest that while the administration's endorsement of technology use is evident, the institutional frameworks necessary for effective technology integration-such as adequate funding, systematic training, and reliable technical assistance-remain underdeveloped. Consequently, much of the responsibility for integrating technology falls on individual teachers, who must navigate these gaps largely on their own.

In sum, the data point to administrative support that is more aspiration than operationalized. This disconnects between verbal encouragement and the provision of actionable policies and resources poses a risk to the long-term sustainability and success of technology integration efforts at Luna Central School. Without addressing these systemic shortcomings, the full potential of technology in enhancing teaching and learning may remain unrealized.

Opportunities in Technology Integration

One of the major challenges in integrating technology into education is the gap between how ready teachers are and the kind of support they actually receive from their schools. There are several meaningful opportunities for professional development that help teachers improve their skills in integrating technology into their teaching. One key opportunity that given by the teacher is through **hands-on training workshops**, which allow teachers to actively try out digital tools like Google Classroom, interactive whiteboards, or educational apps. These workshops are most effective when they're practical and tied directly to classroom use. Teachers were given webinars, video tutorials, and modules to help them use digital tools for remote learning. Many educators reported increased confidence in using platforms like Zoom, Microsoft Teams, and learning management systems because of these sessions. But in the other hand not all of them can participate " Napipili lang naman ang mga sasali" one other the teacher replied.

Another valuable opportunity is **peer mentoring and collaboration**. "Sometimes we help one another, kapag may hindi ako alam tawag ako agad kay Sir and gladly they are just one call away even they have their own class. For instance, in some public schools, tech-savvy teachers serve as ICT coordinators or "tech mentors" to support their colleagues. They share tips on using apps for assessment, managing online classes, and even creating engaging digital content. This kind of peer support builds trust and encourages continuous learning.

Online courses and certifications also play a big role. Programs like the **Google Certified Educator** training are popular worldwide and allow teachers to earn credentials while learning how to use digital tools effectively. These can be done at a teacher's own pace and are often available for free or at a low cost." Masipag akong maghanap online ng mga seminars lalo na yung mga may certification, nadadagdagan yung mga kaalaman ko. Kapag teachers kasi tayo hindi tayo napapagod mag-aral lalo na sa pagpapakalawak ng kaaalaman natin sa edukasyon ngayon ganit ang technology".

Another pressing challenge is the gap between teacher readiness and institutional support. Many educators are enthusiastic about incorporating technology into their teaching practices, yet they often lack the necessary training, resources, and systematic support to do so effectively. This mismatch curtails their ability to fully harness the educational potential of digital tools.

Furthermore, there is a noticeable discrepancy between policy ambition and actual implementation. While school policies frequently emphasize innovation and digital integration, they often fall short when it comes to actionable strategies, such as dedicated budgets, technical support teams, or follow-through plans. This results in a lack of sustainability and coherence in tech-driven educational initiatives.

Amid these challenges, there are notable opportunities that schools can build upon. For instance, strong teacher advocacy for technology, evidenced by a high mean score of 4.38 in administrative encouragement, reflects a solid foundation for collaborative policy development and reform. Teachers' willingness to embrace technology can be a driving force in shaping more grounded and responsive institutional strategies.

Summary, Conclusion and Recommendation

Summary of Findings

The study examined the current state of technology integration at Luna Central School by analyzing pupil and teacher perspectives across four major domains: access and usage at school and home, classroom experience, learner engagement, and the challenges faced by teachers in implementing technology.

Pupils reported that access to technology at school is somewhat limited but present. Among the different uses, watching educational videos is the most common activity. However, access to the internet and using technology for research in class are less frequent, pointing to potential areas for development.

In contrast, pupils have greater access to technology at home. Many shared that they regularly use devices and receive strong support from their families when it comes to using technology. This indicates that the home environment is generally more supportive of tech-based learning than the school setting.

Pupils' experiences with technology in the classroom are largely positive. They observe that teachers often use digital tools, which makes lessons more interesting and exciting for them. This frequent exposure to technology appears to enhance the overall learning atmosphere.

Pupils demonstrated a high level of engagement during tech-integrated lessons. They described their experiences as enjoyable and said that technology helped them better understand the lessons. This suggests that digital tools can be effective in increasing both motivation and comprehension among learners.

Teachers highlighted several challenges that hinder the effective use of technology in teaching. These include a lack of technical support, limited opportunities for training, and unstable internet connectivity. Such issues make it difficult to fully integrate technology into daily teaching practices.

Despite the challenges, teachers strongly believe that technology positively influences student learning. They observed improvements in learner participation and noted that digital tools help students grasp lessons more effectively.

Teachers shared moderately positive views on the support provided by the school administration. While they feel encouraged by school leaders, they also expressed concern over the absence of clear policies, inadequate training programs, and limited funding. These gaps suggest a need for stronger institutional backing to sustain meaningful technology integration.

Conclusion

This study explored the integration of technology in teaching and learning at Luna Central School through the eyes of both pupils and teachers. The findings reveal a story of both promise and challenge—a school community that is aware of the potential of digital tools, yet still navigating the hurdles of meaningful implementation.

For the pupils, technology represents a powerful learning companion. While access at school remains limited—particularly for internet-based research—pupils clearly benefit from the digital experiences they do have. Watching educational videos and using devices in class appear to spark curiosity and make learning more engaging. At home, where access and support are stronger, technology use is even more frequent, showing how family involvement can significantly boost digital learning.

Teachers, on the other hand, see the value of technology in the classroom but face real-world constraints. Despite limited training opportunities, weak internet connections, and minimal technical support, they remain optimistic. Many observe increased pupil participation and improved understanding when digital tools are part of the lesson. Their commitment is evident, even as they call for more concrete support—better infrastructure, clearer policies, and sustained professional development.

Overall, the study paints a picture of a school in transition—one where the desire to embrace technology is strong, but success depends on stronger institutional backing and targeted interventions. With the right support, Luna Central School can move from basic access toward a more inclusive, effective, and future-ready approach to technology in education.

Recommendations

1. **Enhance Internet Connectivity and Access to Devices at School:** To fully support digital learning, Luna Central School should invest in improving its internet infrastructure and increasing the availability of devices in classrooms. While students show a strong interest in using technology, limited access at school restricts their learning opportunities. Strengthening these areas will help bridge the gap between home and school environments, ensuring that all learners can benefit equally from technology.
2. **Provide Regular Training and Technical Support for Teachers:** Teachers play a vital role in integrating technology into learning, but many struggle due to lack of training and technical support. It is recommended that the school provide regular professional development focused on practical, classroom-friendly digital tools. Additionally, having a designated tech support person or team would help teachers address issues quickly and confidently.
3. **Develop Clear Policies and Sustainable Funding Plans for ICT Integration:** For technology use to be consistent and effective, school administrators should create clear guidelines and policies that support ICT integration. This includes allocating funds not just for equipment, but also for

maintenance, software, and teacher training. A well-defined plan will give teachers the structure they need while ensuring that resources are used wisely.

4. **Encourage Parent and Community Involvement in Digital Learning:** Since students receive strong support at home, the school can build on this by involving parents and the wider community in its tech-related initiatives. Workshops, orientations, or parent-teacher dialogues on digital literacy can create a shared vision for how technology enhances learning. When schools and families work together, students are more likely to thrive in both environments.

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