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Competency and Barriers in Using ICT among Public School Teachers in Tagoloan District

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ABSTRACT: Technology integration in education transforms teaching and learning by improving efficiency, accessibility, and student participation in the classroom. This study examines the teachers' profile, competency, and barriers that influence the use of ICT between public school teachers in Tagoloan East and West Districts during the School Year 2023–2024. Specifically, the study sought to determine the respondents' level of competency in the ICT domain and the barriers to using ICT. This study involved two hundred thirty-six (236) respondents from the public elementary and secondary schools of Tagoloan District using the Slovins formula. It used the descriptive research design and an adapted and modified survey questionnaire to collect data. The descriptive correlational method was used to evaluate the samples with statistical analysis including standard deviation, frequency, percentage, mean scores, and Pearson r correlation. The findings showed that teachers' ICT ability is significantly influenced by age, teaching experience, and attitude, and there is a notable relationship between ICT skills and barriers related to manpower, policy, and facilities. Further, enhancing teachers' ICT competence through advanced technology training and effective integration methods aims to provide proficient educational experiences for 21st-century learners and improve teaching professionalism and efficacy. It is concluded that teachers face challenges in implementing ICT policies, including limited resources, reluctance to change, technological issues, and inadequate training. Factors like age, experience, and attitude influence these barriers. Additionally, it is recommended that schools should train proficient teachers as ICT experts to assist in incorporating technology into classroom teaching. This expert should provide ongoing support and training through mentoring programs. Teachers with limited technology experience are encouraged to improve their ICT integration skills, ensuring they can adapt to current trends and provide advanced educational experiences in the 21st century.

KEYWORDS: ICT competency domain and teachers' barrier in ICT

I. INTRODUCTION

Information and communication technology (ICT) integration in education is essential in today's digital world. Recognizing its potential to enhance teaching and learning, educational institutions strive to incorporate it into lessons. However, effective utilization remains a significant challenge, particularly for public school teachers in Tagoloan East and West District, Division of Misamis Oriental. This study explores the competencies and barriers these teachers face in leveraging this fully.

Many teachers in Tagoloan District lack the necessary skills and knowledge to integrate ICT effectively, hindering pedagogical enhancement and student engagement. Insufficient ICT infrastructure, such as limited computer access, poor internet connectivity, and outdated software and hardware, poses significant barriers. Limited opportunities for training and professional development further exacerbate the competency gap, making it difficult for teachers to adapt to new technologies. Additionally, some teachers exhibit reluctance or skepticism towards ICT integration, emphasizing the need to foster a positive attitude and drive meaningful transformation.

Further, key issues include inadequate policies, insufficient infrastructure, labor shortages, and cyber threats. Addressing these challenges is crucial for developing targeted interventions to empower educators in harnessing ICT for educational advancement. According to Balaba (2022), teachers must adapt to new techniques and technologies to stay current. The Department of Education's ICT for Education Strategic Plan aims to establish competency standards, professional development, and enhanced curricula. However, it needs detailed implementation strategies regarding personnel, facilities, policies, and digital risks (Durante, 2020).

Teachers face significant workload pressures, making it difficult to learn and use new technologies. Resistance to change is a recurring issue, as some educators may feel intimidated by digital teaching methods. Support is crucial to help them recognize the benefits of the integration. Effective use can make learning more engaging and improve teaching efficiency. However, the lack of essential equipment and expertise across schools hinders effective lesson delivery. This study evaluates the ICT competencies and requirements of public school teachers in Tagoloan District, aiming to develop a needs-based capacity-building strategy. By identifying and addressing the challenges, the goal is to facilitate teachers' transition to the digital era and enhance learning opportunities for students.

Furthermore, teachers have a lot on their plates: lesson planning, grading, meetings, you name it. It might be overwhelming to attempt to fit learning and using new technologies into a schedule that is already packed. One recurring issue was resistance to change. However, several barriers hindered teachers' usage of ICT. Some of these barriers were: Teaching without technology can be uninteresting for learners. Technology helps learners stay interested and do well in their lessons. It also helps teachers work better and faster.

Specifically, as one of the teachers in Tagoloan District, one of the primary concerns highlights the challenges faced by every school. Therefore, school administrators need to enhance the ICT integration and application knowledge and abilities of each faculty member. In this study, is to evaluate the requirements for and ICT abilities of public school teachers in Tagoloan District, Division of Misamis Oriental, which were used to develop a needs-based capacity-building strategy. The goal of this study was to establish a basic framework that shapes the subsets of ICT competencies (technological and pedagogical) in all teachers at all levels (Primary, Secondary, and Higher Education); and second, to determine how various personal and contextual factors influence these subsets. Understanding how and why technology was used and the variety of devices that were available to children and young people was necessary to help educators and families make informed decisions on technology use in childhood and adolescence (Gottschalk, 2019).

Hence, the objective of this study was to provide useful insights by investigating the level of competency teachers have with ICT and identifying the obstacles they encounter. Not only must we identify the problems, but we also need to work out how to facilitate teachers' transition to the digital era of education and give them the courage to embrace it. After all, improved learning opportunities for learners result from well-equipped teachers.

The main purpose of this study was to examine the competency and barriers to using ICT among the public school teachers in the Tagoloan District Division of Misamis Oriental during the School Year 2023-2024. Specifically, it aimed to determine the respondents' profile, identify the respondents' level of competency in using ICT , assess the level of barriers, and evaluate the significant relationship between the levels of competency and barriers considering the respondents' profile.

This study makes use of the competence in Information and Communication Technology among Public School Teachers as a dependent variable anchored on the four competency domains based on the National ICT Competency Standards (NICS) or teachers, namely Technology Operations and Concepts, Social and Ethical, Pedagogical and Professional Development.

The NICS was developed through the conduct of several activities such as comparative research on current industry's best practices in the Philippines and other countries, focused group discussions or consultation with various government and private agencies, institutions, academe, and stakeholders, and validation of shops.

Information and Communications Technology (ICT) offers access to information via telecommunication technologies to engage in the digital world and continues to improve to bring about significant changes in the educational system. In the current setting, descriptive research determined and described the level of teachers' ICT competence in various skill sets using a standardized survey questionnaire adapted from the Commission of Information and Communication Technology's National Information and Communications Technology Competency Standards NICS-Basic (Fuente & Biñas, 2020).

The Technology Operations and Concepts Domain contains competencies related to technical operations and concept and productivity of various ICT tools like computers and communication devices, as well as an application available online or offline. In addition, it includes knowledge in basic computer operations and basic troubleshooting, identifying functions of the different main.

The Social Domain, the second of the four domains in the NICS, includes competencies related to social, ethical, legal, and human issues and community linkage. This calls special attention to issues surrounding the responsible use of technology, ranging from respect for Intellectual Property to safeguarding students' privacy.

The Pedagogical Domain includes competencies related to planning, designing learning environment and experience, teaching, learning, and curriculum, assessment and evaluation, and educational technology. Teachers were looking for the best ways to lighten the thinking skills of their learners, and one significant way was to utilize ICT in the teaching process. It was also in this domain where teachers create rubrics for assessing students' academic performance using technologies and even use electronic means in administering quizzes and examinations.

The last one was the Professional Domain which includes competencies related to professional growth and development, research, innovation, and collaboration.

In general, this set of competencies aims to prepare teachers to become users of various ICTs to help both the students and their benefit from the technology. The prime benefits are (1) access to information and knowledge resources, (2) communication and knowledge sharing, and (3) work efficiency.

The department has mandated guidelines in accepting Information and Communication Technology equipment and internet access services for classroom instruction and administrative use through DepEd Order No. 28, series 2009. Through the years, public schools have received various Information and Communication Technology equipment/peripherals.

To further appreciate the study's result on the level of competency and barriers to using ICT among Public School Teachers, one may look at the correlation between teacher's ICT competency levels as variables in the study, such as Technology Operations and Concepts, Social and Ethical, Pedagogical, and through looking at the barriers in using ICT such as Manpower, Policy and Facility in a specific district.

II. METHODOLOGY

This study used descriptive research. It is designed for the researcher to collect data about the present existing situation. The primary objectives and goals of this research were to characterize the nature of the event as it emerged at the time of study and to look into the causes of specific situations. This study uses a descriptive correlational research design because the researcher wants to determine the level of competency and barriers in using ICT among Public School Teachers in terms of technology operations and concepts, social and ethical, pedagogical, professional, and barriers in using ict such as; manpower, facility, and policy.

To attain the objectives set in this study, this research design was considered the most useful in determining the level of competency and barriers to using ICT among Public School Teachers in the Division of Misamis Oriental, particularly in the Tagoloan East and West District. A questionnaire was distributed to collect data as it provides a quantitative way of data gathering, such as evidence, facts, or information stated numerically. The researcher's respondents were the selected Public School Teachers from Tagoloan East and West District, Division of Misamis Oriental, which would make data collection easier for the researcher.

The researcher used Slovin's Formula to determine the sample size. Random sampling was also used to determine the respondents of the study. The researcher visited the school and gave questionnaires to the teachers present on that day which will be limited based on sample size in every school. The municipality is split into ten (10) barangays. The District of Tagoloan East and West has nine (9) Elementary Schools, four public schools in the Junior High School category, one (1) Integrated School, and two(2) Senior High Schools.

The Division Office is located in Cagayan de Oro City and is led by the Schools Division Superintendent, who oversees the efficient operations of the Department of Education in Misamis Oriental with the assistance of the Assistant Schools Division Superintendent and the education program supervisors. There were five hundred seventy-four (574) public school teachers in Tagoloan District and random sampling using the Slovins formula was utilized to obtain data from the whole population for the study. Its purpose was to focus on features of a sample that would be relevant to make it easier for the researcher to respond to research questions. Using the Slovins formula, the total number of respondents would be two hundred thirty-six (236)

III. RESULTS AND DISCUSSION

Problem 1. What is the respondents' profile in terms of age, sex, teaching experience, and attitude towards ICT?

Table 1. Distribution of Respondents' Age

Age	Frequency	Percentage
61 years old and above	3	1.30
51 – 60 years old	51	21.60
41 – 50 years old	47	19.90
31 – 40 years old	96	40.70
30 years old below	39	16.50
Total	**236**	**100%**

Table 1 shows the respondents' profile in terms of **age**. Results showed that the **Highest Frequency of 96 (40.70%)** teachers' age was from **31-40**. This means that the respondents manifested a relatively young teaching population, as the age group of 31 to 40 years old accounts for the largest frequency of instructors. This means further that it is significant because it

implies that many educators can be digitally literate, given that younger people frequently have a higher level of comfort and familiarity with information and communication technology. It was also supported by the study of Lucas et al., (2021), younger instructors are more proficient in using digital technology than their older counterparts.

On the other hand, the table shows the **Lowest Frequency of 3 (1.30%)** was age **61 years old and above**. This means that only a few of the teachers were old in the service and this age uses digital technology less than younger generations. This implies that cognitive decline or disinterest may make older persons less likely to use digital technologies, which needs closer investigation. Moreover, studies have indicated that senior citizens are quite capable of learning new skills, even technical ones if they have the right kind of assistance and learning opportunities. It is evident from personal experience and knowledge that elderly individuals are less capable of learning or using new technology. In reality, a great deal of elderly people exhibit extraordinary adaptability and endurance when it comes to using new techniques and innovations. Still, they can encounter certain difficulties and obstacles in the process.

According to Rosell (2021), one of the biggest challenges older persons face is a lack of access to or experience with technology. Older people might not have had the same opportunity to learn about and experience using computers, cellphones, or the internet as younger generations who have grown up in a digital world. They could thus feel overpowered or scared by the idea of picking up new technology.

Table 2. Distribution of Respondents' Sex

Sex	Frequency	Percentage
Male	30	12.70
Female	206	87.30
Total	**236**	**100%**

Table 2 shows the respondents' profile in terms of **sex**. It revealed that the **Highest Frequency of 206 (87.30%)** was **Female**. This means that there are more female teachers in the district where the study was conducted. This further means that they were considerably over-represented in the teaching profession. Moreover, it also implies that long-standing gender imbalance in the education sector is shown in the significant number of women in teaching positions, both in elementary and secondary school. The commitment and experience of female educators should be recognized and celebrated, but this also presents significant issues about gender equity and representation in the profession of education. This means that the result has provided strong evidence for the global perspective that there are more women teachers than men in the Tagoloan District. This is also supported by the study by Grey (2020) that the majority gender of teachers in the Philippines are female, with about 89.58% of teachers in public elementary and 77.06% in public secondary schools being female.

Furthermore, according to Brains' (2021) research, women began to view teaching as a respectable professional option starting in the middle of the 1800s. Women were sought after for their self-discipline, personal responsibility, and what was perceived as a natural nurturing skill needed for young children to be sent out of the house and into the classroom when public schools were founded across the nation. However, when all of those who made up these numbers were reminded of the many women who heeded the call to become teachers, many of them were driven by a strong sense of purpose and dedication to their learners. More than simply a job, teaching gave many of these women a route to financial independence, a feeling of purpose in molding young minds, and a reason to be proud of their professional achievements. It's critical to acknowledge the variety of experiences, goals, and backgrounds held by the women who make up the district's educators.

On the other hand, the **lowest frequency of 30 (12.70%)** were **Male** teachers. This means that few males have an interest in this profession. It is attributed to gender differences in occupational preferences and social roles. This further means that the opportunity cost of becoming a teacher relative to choosing another profession is high for men. Men give up a higher potential salary by choosing teaching over a non-teaching career. Efforts to raise the share of male teachers are likely to have limited success until the underlying structural economic incentives are addressed. That is, the higher wages in non-teaching jobs, tend to pull men away from teaching (Adetunji, 2019). To close the gender gap in teaching, institutional and economic factors that affect men's career choices in this field must be addressed. Programs that increase the financial incentives for teaching, such as competitive pay and benefits packages, as well as those that challenge cultural prejudices and promote more gender diversity in the teaching profession, may fall under this category.

In conclusion, the high proportion of female teachers in the district is a testament to the dedication, perseverance, and passion that women have for teaching, not just the result of figures. By acknowledging their contributions and advancing their viewpoints, we can create a more human-centered educational strategy that is advantageous to both teachers and students.

Creating an equal and equitable teaching profession requires a holistic approach that considers the institutional barriers as well as the personal elements influencing men's involvement in the classroom.

Table 3. Distribution of Respondents' Teaching Experience

Years of Teaching Experience	Frequency	Percentage
21 years and above	48	20.30
16 – 20 years	15	6.40
11 – 15 years	44	18.60
6 – 10 years	85	36.00
5 years and below	44	18.60
Total	**236**	**100%**

Table 3 shows the respondents' profile in terms of **teaching experience**. Results show that the **highest frequency of 85 (36%)** are teaching from **6-10 years**. This means that many of the respondents have been teaching for 6 to 10 years already, and these years of service have enough experience in using ICT in teaching. Moreover, as a researcher, this outcome supports the notion that effective ICT integration into education requires expertise. This further means that educators who have been teaching for a while are likely to have acquired valuable skills, knowledge, and strategies that enable them to use technology to enhance their lesson plans and engage students more effectively especially the new generation teachers who were technologically inclined. It also highlights how crucial it is to improve digital literacy and use technology-driven teaching strategies since educational technology and ICT-based resources have been improved. Additionally, the required technological facilities and ICT-based tools for instruction and learning have been upgraded in recognition of the idea that improving ICT in schools would have significant pedagogical and educational advantages for educators and students alike (Wang & Zhao, 2022).

Moreover, the findings of Kalra (2018) found that new instructors had a more positive outlook on using ICT in the classroom than their more experienced peers, which is very evident in the district. It shows in the result that most of the teachers were new but had enough teaching experience and were using ICT in giving their lessons to the learners. Many respondents have enough years of teaching experience, which is advantageous for the efficient use of ICT in education as it is associated with better educational results and increased competence in technology integration.

On the other hand, the **lowest frequency of 15 (6.40)** was **16-20 years and in the service**. This means that respondents with this number of years in the service still need to adopt ICT in their profession to be competent teachers in today's digital age. Longer-tenured teachers may feel more at ease using traditional methods of teaching and may perceive less need for adjusting their established practices. This indicates that teachers are already established enough in their teaching careers to employ the traditional method of teaching. Based on the researchers' view, learners now rely a lot on technology in their everyday lives. Teachers with longer years of experience may feel less motivated to learn new technologies if they are nearing retirement.

On the other hand, some experienced teachers might have a negative attitude towards ICT, viewing it as a distraction rather than an enhancement to teaching. So, teachers should learn how to use technology to keep up with the changes in society. One of the reasons why teachers should be equipped with the use of ICT is to enhance the students' learning for them to learn more effectively and efficiently (Kumar et al. 2022).

Furthermore, in education, teachers who have reached a higher level of maturity will find it more difficult to receive training on how to use technology in the classroom effectively (Training Older Teachers in Using Digital Tools, 2019). In summary, even though instructors with different levels of experience may find it difficult to incorporate ICT into their lessons, doing so is an essential task that will help students succeed in the digital era. School leaders should actively promote and model the use of ICT to develop quality learning and improve teachers' attitudes towards its use. Developing clear policies that mandate and support the use of ICT in teaching practices will enhance teachers' skills and attitudes. Teachers with 16 to 20 years of experience must embrace it to guarantee that all instructors are capable in the current digital era. A multidisciplinary approach that combines targeted training, fair resource allocation, motivational enhancement, and supporting institutional policies is needed to address the barriers to its adoption. Schools can assist experienced teachers in overcoming these barriers and improving their professional abilities by cultivating a culture that appreciates and encourages ICT integration.

Table 4. Distribution of Respondents' Attitude towards ICT

Indicators	Mean	SD	Description
As a teacher, I…			

can effectively use ICT to enhance student engagement in the learning process.	3.25	0.92	Positive
feel adequately prepared, through training or professional development, to integrate ICT into my teaching practices.	3.08	0.83	Positive
find it challenging to balance traditional teaching methods with the integration of ICT tools.	2.87	0.86	Positive
believe that the resources and support provided are sufficient for me to use ICT effectively in the classroom.	3.03	0.84	Positive
actively seek opportunities for continuous professional development related to ICT integration.	3.19	0.88	Positive
handle challenges or technical issues that arise during ICT use effectively.	2.94	0.80	Positive
involve students in decision-making processes regarding the use of ICT in the classroom.	2.98	0.82	Positive
open to embracing new ICT tools and technologies in your teaching practice.	3.24	0.87	Positive
act as a barrier to the effective use of ICT in teaching.	2.41	0.92	Slightly Negative
assure the availability of adequate ICT resources in school impacts your willingness to use them in teaching.	2.99	0.81	Positive
Overall	**3.00**	**0.85**	**Positive**

Legend: 3.50-4.00 (Strongly Agree/Very Positive, 2.50-3.49 (Agree/Positive 1.50-2.49 (Disagree/Slighty Negative) 1.00-1.49 (Strongly Disagree/Very Negative)

Table 4 shows the respondents' profile in terms of **Attitude towards ICT**. With an overall mean of 3.00 (SD=0.85), described as **Agree** and interpreted as **Positive**. This means that the respondents have a favorable attitude toward integrating ICT into their lesson plans and are aware of the benefits and limitations of using technology in the classroom. This further means that the desire to implement new ICT technologies and engage in ongoing professional development is strengthened by the idea that resources and support systems are sufficient. Nevertheless, teachers continue to actively address problems like combining ICT with traditional methods and resolving technological problems. This means further that most of the teachers' respondents manifested positive attitudes towards working well in using the different ICT paraphernalia, understanding and effectively using the internet and network applications and resources, and having enough knowledge and skills in information and data management.

Based on the researcher's understanding, the teachers can operate the various ICT tools when they have enough knowledge, especially in today's modern technology. According to Mannila et al. (2018), educators who possessed ICT expertise showed eagerness to include ICT in their teaching methods. A pattern identified among both male and female educators led to hypothesize a relationship between a teacher's age group and their attitude toward ICT integration in the classroom.

Moreover, the result revealed that the indicator **As a teacher, I am confident that I can effectively use ICT to enhance student engagement in the learning process** obtained the highest mean rating of 3.25 (SD=0.92) with the description of **Agree** and interpreted as **Positive**. This means that it suggests a favorable mindset toward the ability of ICT to raise student involvement and engagement levels in the classroom. This further means that they believed that using technology in teaching makes learning more interesting and more interactive for the students. As observed by the researcher, educators who had training and professional development opportunities tend to feel more confident in using ICT effectively in their lessons. Knowing the rapid pace of technological advancements, teachers need opportunities for continual learning to stay updated with the latest tools and trends in ICT. In the study of Baytar, et. al., 2023, they said that in the current digital age, the integration of information and communication technologies (ICT) into teaching practices has become a determining factor in learning quality.

On the other hand, the indicator **As a teacher, I act as a barrier to the effective use of ICT in teaching** got the lowest mean rating of 2.41 (SD=0.92), described as **Disagree** and interpreted as **Slightly Negative** result. This means that the majority of respondents don't think that using ICT in the classroom effectively is hindered by personal concerns. This implies that there is hope for overcoming both individual struggles and barriers to using technology for learning. Moreover, they see how important ICT integration is in their lessons. They understood that ICT can enhance learning experiences and prepare students for the digital age. Based on the researcher's insight, teachers' information and communication technology (ICT) skills are an important factor in incorporating such resources into the teaching-learning process. ICT tools can make learning more interactive and engaging for

students, especially in the lower grades. According to the study of Hu et. al (2021), the use of ICT in teaching practice can provide a variety of teaching or learning environments (e.g., multimedia-based learning, virtual reality, game-based learning) to meet learners' personalized needs.

Problem 2. What is the respondents' level of competency in using ICT in terms of technology operations and concepts, social and ethical, and pedagogical and professional?

Table 5 shows the summary of respondents' **level of competency using ICT** with an overall mean of 3.52 (SD=1.14), interpreted as **Competent.** It means the relationship between the level of competency in using ICT among public school teachers and their performance. This implies that knowing ICT is very important to all teachers in the district. This further means that teachers had better be monitored and assessed from time to time to improve their ICT competence and to fully integrate ICT in the classroom for effective teaching and learning.

Moreover, it appears that respondents' skill levels vary to some extent, as indicated by the 1.14 standard deviation. There exist variations in competency levels within standards, signifying both strengths and opportunities for development, even if the mean competency level suggests a reasonable degree of ability overall. Hennessy et al. (2022) said that it demonstrates how technology can revolutionize and improve teacher professional development by utilizing its distinctive qualities, expanding accessibility, and encouraging educators to continuously improve their abilities to remain effective in the always-changing educational environment.

The variable **Social and Ethical** obtained the highest overall mean rating of 3.74 (SD=1.10), interpreted as **Competent**. This means that the teachers understood, observed legal practices, and identified and practiced ethical use of information communication and technology. Based on the researcher's discernment, because of different ICT training or webinars, they were able to acknowledge the proper use of ICT in their daily work, recognize the owner of the sources, make use of technology in making their lesson interactive, and develop their ICT literacy. Technology adoption throughout educational systems might have a positive impact on TPD (Hennessy et al., 2022).

In addition, Kumar et al. (2022) mentioned that learners now rely a lot on technology in their everyday lives. So, teachers should learn how to use technology to keep up with the changes in society. Being a competent teacher in using ICT is essential in today's digital age.

The variable **Professional** got the lowest mean rating of 3.10 (SD=1.22), interpreted as **Somewhat Competent**. This means there were teacher-respondents who were not technologically inclined, especially older-aged teachers as manifested by the result of the study. As observed, there is a need for teachers to engage in online training for professional development especially the older ones. In the study of Briones (2018), she mentioned that training on the use of ICT to create applications and software that can be used in the teaching and learning process, such as creating web-based quizzes to assess their understanding online, providing them with web-based activities that enable the learners to explore the web and let the students create their web-based materials on certain topics. Workshop on developing ICT-based instructional materials, exhibit, try-out, and sharing of the ICT-based instructional materials enables the teacher to create an ICT-based instructional material.

Table 5. Summary Distribution of Respondents' Level of Competency using ICT

Variables	Mean	SD	Interpretation
Technology Operations and Concepts	**3.67**	**1.15**	**Competent**
Standard 1	3.82	1.10	Competent
Standard 2	3.80	1.15	Competent
Standard 3	3.62	1.14	Competent
Standard 4	3.45	1.19	Somewhat Competent
Social and Ethical	**3.74**	**1.10**	**Competent**
Standard 1	3.59	1.20	Competent
Standard 2	3.77	1.07	Competent
Standard 3	3.80	1.06	Competent
Standard 4	3.81	1.07	Competent
Pedagogical	**3.56**	**1.10**	**Competent**

Standard 1	3.41	1.14	Somewhat Competent
Standard 2	3.67	1.13	Competent
Standard 3	3.71	1.09	Competent
Standard 4	3.53	1.11	Competent
Standard 5	3.77	1.00	Competent
Standard 6	3.26	1.15	Somewhat Competent
Professional	**3.10**	**1.22**	**Somewhat Competent**
Standard 1	3.47	1.08	Somewhat Competent
Standard 2	2.95	1.23	Somewhat Competent
Standard 3	2.89	1.35	Somewhat Competent
Overall	**3.52**	**1.14**	**Competent**

Legend: 4.50-5.00 (Aways/Highly Competent), 1.50-2.49 (Rarely/Slightly Competent)
3.50-4.49 (Often/Competent) 1:00-1.49 (Never/Incompetent)
2.50-3.49 (Sometimes/Somewhat Competent)

However, when ethical and social standards are taken into consideration, there is no significant relationship between the performance of public school teachers in Tagoloan District and their degree of ICT expertise. It suggests that the way technology is integrated to enhance the nation's educational system is unaffected by social or ethical standards. In the study by Bilbao et al. (2019) and Oco (2022), it mentioned that learners still need guidance on how to use and regulate technology use. The learners of the 21st Century are even more advanced than some of the teachers. As there are positive and negative effects of technology use, learners had better know the difference.

Problem 3. What is the level of barriers based on manpower; policy, and facility?

Table 6. Summary of the Respondents' Level of Barriers Using ICT

Variables	Mean	SD	Interpretation
Manpower	2.66	1.17	Performed
Policy	2.86	1.04	Performed
Facility	2.68	1.07	Performed
Overall	**2.73**	**1.09**	**Performed**

Legend: 4.50-5.00 (Always/Very well-performed), 1.50-2.49 (Rarely/Fairly Performed)
3.50-4.49 (Often/Well-performed), 1:00-1.49 (Never/Less performed)
2.50-3.49 (Sometimes/Performed)

Table 6 shows the level of **barriers to using ICT** with an overall mean of 2.73 (SD=1.09), interpreted as **Performed**. It means that all schools in the two districts have computer units, most of the teachers use ICT in delivering their lessons, and maintenance facilities, and they follow policy in using technology. Furthermore, the Department of Education (DepEd) has developed specific criteria for the adoption and use of ICT equipment and connection to Internet services in educational settings and administrative duties, as detailed in DepEd Order No. 28, series 2009. Public schools have gotten a variety of ICT equipment and devices over the years. To supplement and broaden the scope of the DepEd Computerization Program, it is critical to prioritize the acquisition and use of ICT equipment and internet connectivity, ensuring that schools are well-equipped to capitalize on the benefits of technology in education. This prioritization is consistent with the larger objective of improving educational quality and equipping students for the 21st century.

The variable **Policy** obtained the highest overall mean rating of 2.86 (SD=1.04), interpreted as **Performed**. This means that the majority of teachers may abide by the rules regarding the use of technology. This implies that complete obedience to policies in all circumstances could be hampered by difficulties or obstacles. As observed by the researcher, some of the teachers encounter various barriers when using ICT in their educational practices. These obstacles may consist of problems with technology, a lack of money, insufficient training, or resistance to change. To successfully address these challenges, it is important to create specific solutions that take into consideration the unique problems that educators encounter. Following ICT policies is essential

for maintaining a secure, ethical, and efficient technology environment within an organization. It helps protect sensitive information and ensures compliance with laws and regulations.

Additionally, challenges with policy compliance can be caused by a lot of things, such as inadequate knowledge or comprehension of the policies, conflicting priorities, resource limitations, and technological obstacles. To effectively address these issues, teachers need constant assistance, training, and communication in addition to the tools, resources, and incentives they need to adhere to regulations.

Bilbao et al. (2019) said that the way to enhance and regulate ICT use is to formulate and implement policies to guide appropriate decisions. The learners of the 21st Century are even more advanced than some of the teachers. However, learners still need guidance on how to use and regulate technology use. As there are positive and negative effects of technology use, learners had better know the difference. They must know how they can be protected from the hazards that technology brings to their lives.

However, the variable **Manpower** got the lowest overall mean rating of 2.66 (SD=1.17), interpreted as **Performed**. This means that teachers do not have enough abilities and knowledge to successfully use modern technology. This implies that few of the teachers have access to ICT policy, attended training about the use of modern technology, and are eager to develop themselves in this challenging education era. This indicates that although some teachers could have continuous access to ICT policies and training opportunities, others would not because of their familiarity with traditional approaches or their fear of the unknown. Some teachers may be reluctant to embrace new technology. A lack of confidence or a sense that one's workload has increased might be the cause of resistance.

In the researcher's observation, as technology continues to evolve, having ICT skills allows teachers to adapt to new tools and methodologies. This adaptability is crucial in preparing students for the rapidly changing workforce and technological landscape. This was supported by the study of Ode et al., (2021), that educational institutions must fund programs that promote teachers' professional development to address manpower-related issues. This might entail making training programs more widely available, encouraging creativity and lifelong learning, and rewarding teachers who succeed at integrating technology into the classroom.

Additionally, the results emphasize how crucial it is to give educators enough assistance and training to help them deal with the difficulties involved in integrating ICT. Programs for professional development should be created with teachers' unique needs and concerns in mind, giving them the tools, resources, and information, they need to integrate ICT into their teaching. Providing teachers with chances for collaboration and information exchange will help them get beyond obstacles when it comes to utilizing ICT. Teachers may work together to solve shared problems and enhance ICT integration across educational settings by creating a supportive environment where they can share ideas, best practices, and advice from one another.

In furtherance, the Department of Education is making technology and communication stronger by following a rule called DepEd Order No. 1, s. 2007. This regulation aims to improve the use of technology and communication in education. DepEd has begun and completed technological programs and projects in Basic Education, Management, and how the department works over the years.

Hence, academics and stakeholders in education face possibilities as well as problems due to the high degree of perceived obstacles to ICT use among teachers. Through an awareness of the particular characteristics of these barriers and the utilization of educators' adaptability and resilience, focused interventions may be created to assist teachers in successfully incorporating ICT into their lesson plans and realizing the full potential of this technology to improve student learning. Technology today can improve education, but only with proper utilization. Students may not fully benefit from new technology tools if teachers lack the appropriate abilities, which might influence their learning outcomes and preparation for a tech-driven society.

Problem 4. Is there a significant relationship between the levels of competency and barriers considering the respondents' profiles?

Table 7. Relationship between Levels of Competency and Barriers Using ICT Considering the Profile of the Respondents

Competency in Using ICT Variables	**Barriers to Using ICT**			**OVERALL** *r-value* *p-value*
	Manpower *r-value* *p-value*	**Policy** *r-value* *p-value*	**Facility** *r-value* *p-value*	
Technology Operations and Concepts	**0.189 (WPR)**	**0.186 (WPR)**	**0.150 (WPR)**	**0.151 (WPR)**

	0.047* S	**0.016* S**	**0.021* S**	**0.043 S**
Social and Ethical	0.003 (NLR) 0.963 NS	**0.156 (WPR) 0.016* S**	**0.154 (WPR) 0.018* S**	**0.114 (WPR) 0.039* S**
Pedagogical	0.001 (NLR) 0.996 NS	**0.154 (WPR) 0.018* S**	**0.165 (WPR) 0.011* S**	**0.119 (WPR) 0.027* S**
Professional	0.003 (NLR) 0.963 NS	**0.128 (WPR) 0.050* S**	**0.195 (WPR) 0.003* S**	**0.122 (WPR) 0.032* S**

Legend: *significant at p<0.05 alpha level S – significant NS – not significant

r-Values	***Description***	***r- Values***	***Description***
0.00 – 0.09	No Linear Relationship (NLR)	0.10 – 0.49	Weak Positive Relationship (WPR)
0.50 – 0.69	Moderately Positive Relationship (MPR)	0.70 – 0.99	Strong Positive Relationship (SPR)
1.00	Perfect Linear Relationship (PLR)		

Table 7 shows the relationship between the levels of competency and barriers to **using ICT considering the profile of the respondents**. All of the four competencies in using ICT demonstrated a **Significant** result in the study as indicated by a positive relationship between the correlation r-value and probability value less than 0.5 alpha level which led to the rejection of the null hypothesis. This means that the study has a significant relationship between competency in using ICT and the barriers to using ICT. This further means that a positive correlation between barriers to ICT adoption and competency levels, indicating that barriers to ICT adoption decrease as individual competency levels increase. This demonstrates how competency and barriers to ICT integration are related. As a researcher, it was critical to address skill gaps to successfully reduce barriers by prioritizing professional development, promoting ethical ICT use, and enhancing pedagogical strategies, educators can leverage technology to enrich tepaching and learning experiences for students.

Age, sex, position, teaching experience, and availability of technology do not affect teachers 21st century skills in the classroom observation tool for the first and second periods when grouped according to their profile. This means that most teachers lack access, opportunities, and resources to develop 21st-century skills. If technology is readily available to all teachers, regardless of their positions or experience, it lessens the impact of technology access on the development of 21st-century skills (Cabahug et al., 2024).

According to the study of Okoye et al. (2022), it is essential to create conditions that enable universities to have access to educational technologies and funds to help develop educational tools/models that are specially tailored to the region's realities and technological requirements. For instance, the deployment of adequate infrastructures, networks, and internet connection that enable those digital technologies to function. Besides, the digital infrastructures are essential for the teachers and learners to thrive in this new digital-savvy or unprecedented changes in the way learning takes place. Furthermore, educational institutions may empower teachers to effectively use technology to enhance teaching and learning experiences for all students by placing a high priority on training, support, and the incorporation of technology into teacher education programs.

Additionally, teachers who lack a solid grasp of these fundamental concepts may encounter challenges when utilizing ICT for both instruction and learning. Aside from that, technical assistance and resources are frequently offered by schools to handle problems about technology concepts and operations. This covers help desks, online courses, workshops, and other types of support targeted at resolving the technological issues and demands of educators. Institutions may better assist instructors in removing obstacles to ICT usage by concentrating on enhancing competency in these fundamental areas. As teachers' competency

in using ICT increases, the barriers to adopting and integrating these technologies decrease. This relationship underscores the importance of building ICT skills among educators to overcome challenges and maximize the benefits of technology in education.

Baylan (2020) as well as Oco and Comahig (2023) mentioned that there is a need for school administrators to send teachers with relevant training/seminars not only in in-school training but also at the regional or national level to ensure that they keep themselves abreast with the latest teaching methodologies. They should keep their positive performance in terms of their productivity, commitment to duty, punctuality, teaching strategies used inside the classroom, and in making their instructional materials. Encouraging them to go further in education since well-informed and updated teachers inspire students to learn and do more with their studies, thereby affecting student achievement and boosting their teaching and work performance.

Moreover, to comprehend the state of technology integration in educational settings, one must be knowledgeable about Information and Communication Technology and the obstacles that prevent public school instructors from using it. To create professional development programs that are specifically tailored to teachers' needs and help them overcome obstacles to using ICT as a useful teaching tool, it is essential to have a thorough understanding of these variables (Garbin, 2019).

In conclusion, efforts to remove obstacles should be a crucial component of initiatives aimed at enhancing ICT competency among educators, even though the association between levels of proficiency in ICT and barriers to its application may be low but still statistically significant. Education institutions may more effectively promote the integration of ICT into teaching and learning activities by comprehending the unique obstacles encountered by various groups of educators and putting targeted interventions into place. Overall, the relationship between the levels of competency in terms of technology operations and concepts and barriers to using ICT considering the profile of the respondents was weak and significant as indicated by the correlation r-value and probability value less than 0.05 alpha level which led to the rejection of the null hypothesis. This implies that levels of competency in terms of technology operations and concepts and barriers to using ICT considering the profile of the respondents are related to each other.

IV. CONCLUSIONS

Based on the results of the respondents' profile, it shows that Tagoloan District manifested a relatively young teaching population, as evidenced by the fact that the age group of 31 to 40 years old accounts for the largest frequency of teachers. It revealed that there were more female teachers in the district than males. Most of the teachers in the district have been teaching for 6 to 10 years already, and these years of service have enough experience in using ICT in teaching. The data interpretation shows that teachers have a favorable attitude toward integrating ICT into their lesson plans and are aware of the benefits and limitations of using technology in the classroom.

Additionally, the result showed that **social and ethical** got the highest mean wherein teachers from the two districts were competent and understood, observed legal practices, and identified and practiced ethical use of information communication and technology. Teachers who are favorable about technology and who are reasonably young and experienced are also competent at utilizing it appropriately and efficiently. It shows that they are better able to integrate technology into their teaching because of their previous experience and attitude. The positive attitude that the young, experienced teachers have towards technology enables them to use it appropriately, increasing the effectiveness and engagement of their teaching.

On the other hand, **teachers' positive attitudes and experience** enhance their excellent competency in the moral and legal use of technology. This competency is essential for encouraging responsible ICT use that improves student engagement and effectiveness in learning. However, the result shows that barriers concern with implementation of policy. There are institutional problems that might make it difficult to use ICT effectively. Teachers have specific obstacles that make it challenging for them to completely adhere to ICT regulations, even with their high level of expertise. These difficulties imply that, to guarantee continuous policy adherence, institutional support and resources are just as vital as individual teaching qualities such as a positive attitude and experience.

Lastly, **teachers' age, teaching experience, and positive attitude toward ICT** have an impact on how competent teachers are in using ICT in teaching. However, these characteristics also have an impact on the difficulties they encounter, indicating a complicated relationship in which teachers with greater training and a positive attitude are more competent at utilizing ICT but continue to come across barriers that need to be addressed. This emphasizes how crucial it is to provide expertise and good attitudes, but also to make sure there is enough assistance and funding available to overcome structural barriers to ICT use.

The study reveals that teachers are competent as well as ethical and efficient use of technology is significantly influenced by their characteristics, including their attitude towards ICT, teaching experience, and age group. Further, it was also revealed that teachers face barriers in implementing ICT policies which includes limited resources, reluctance to change, technological issues, and inadequate training. Factors like age, experience, and attitude influence these barriers. Overcoming these requires focused assistance.

V. RECOMMENDATIONS

Based on the findings and conclusions generated from this study, the researcher has formulated the following Recommendations:

1. School ICT coordinators can boost older teachers' adoption of technology by providing specialized training, coaching, and mentorship, thereby enhancing their confidence and preparedness for ICT use.
2. Encourage teachers to take ICT training, LAC sessions, and pedagogical skills with an emphasis on areas where they are weak and training upskilling on ICT integration into teaching to improve their skills in teaching.
3. Schools should train proficient teachers as ICT experts to assist in incorporating technology into classroom teaching, providing ongoing support and training through mentoring programs.
4. Teachers with limited technology experience are encouraged to improve their ICT integration skills, ensuring they can adapt to current trends and provide advanced educational experiences in the 21st century.

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