

# Challenges Experienced by Teachers in the Utilization of Information and Communication Technology in the Classroom

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**Abstract**— The utilization of Information and Communication Technology (ICT) poses an imperative function in the learning environment. This study explored the lived experiences of elementary teachers in utilizing ICT in the classroom. The qualitative approach employing the phenomenological design was used. The research was conducted in all public elementary schools of the five municipal towns in the first congressional district of Zamboanga del Sur. The participants included 20 classroom teachers and subject teachers. In gathering the data and information, a researcher-made semi-structured interview guide was used. There were four central themes identified in the study, namely: lack of training on the skills needed in teaching ICT; poor internet connection; insufficient computer hardware; and pupil difficulty with technological devices. Teachers have experienced challenges in the utilization of ICT in the classroom. It is recommended that teachers and instructors receive ICT upgrading training. Schools embrace and use current technological facilities to enable an effective flow of information among teachers, students, and administrators.

**Keywords**— computer hardware, ICT, internet connection, training.

## INTRODUCTION

Several countries invested extensively in education's ICT sector (Albugarni & Ahmed, 2015). Teachers and administrators who are intimately involved in the improvement of instruction and curriculum in school are required in an educational environment where schooling systems are compared internationally and where there are rising demands for the development of twenty-first century skills (Naidoo & Petersen, 2015). Eventually, in the twenty-first century era, the utilization of Information and Communication Technology has become the driving force in transforming education throughout the world (Khokhar & Javaid, 2016). ICT use in education has become a growing demand for teaching student's knowledge and skills for the digital age (Lawrence & Tar, 2018).

The use of ICT in the classroom is essential in providing students with opportunities to learn how to operate in an information age (Taban, Abdullah & Clement, 2012). Given the widespread use of digital technologies, new competencies are required that are not addressed by the current curriculum. The new digital culture that has emerged in the aftereffects of the "Fourth Industrial Revolution," that of digitization, provides a wide range of opportunities for education, training, and learning like when teachers are technologically literate. They need to know how to incorporate IC T into the educational

program and in responding to challenges (Catalano, 2019).

According to Baporikar (2020), the challenge is something that acts as a call to make a special effort, a demand to explain, justify, or difficulty in a task that is stimulating to one who is engaged in it by its nature or character. In addition, the study of Shittu & Shittu (2015) described challenges as barriers that hinder teachers or lecturers from utilization or ICT integration in the teaching and learning process. The barriers of technology adoption in the trend of national education development support the challenges of the Era 4.0 industrial revolution flight (Mirfani, 2019). The challenges include education policies that are ineffective, a lack of ICT facilities in schools, overcrowded classrooms, and unreliable power supply (Inyang, 2017), and lack of electricity or generators (Omare, Mwalw'a, & Mutisya, 2018).

Furthermore, some obstacles to ICT utilization in Saudi schools include a lack of space, resources, and maintenance, together with lack of ICT skills among students, as well as a lack of ICT training, ICT policy and inadequate technical support in schools (Salehi & Salehi, 2012). Thus, inconsistent investments in ICT equipment, infrastructure, and resources, financing inflexibility, the need for more professional development and assistance, and the incorporation of technology into evaluations and curricular planning are

all issues that need to be addressed (Rabah, 2015; Saxena, 2017). Undesirable utilization of ICT depends on the school's ICT vision; rather than the cost of ICT infrastructure or teachers' ICT skills. The school strategic plan has a clear vision and strategy for implementing ICT (Francis, Ngugi, & Kinzi, 2017). The insufficient tools and resources and inadequate ICT-based teaching and learning expertise are also evident in using ICT in the classroom (Omare, Mwalw'a & Mutisya, 2018).

The factor that prevents teachers from integrating ICT into the curriculum is limited of class time, and this discourages teachers from using ICT (Salehi & Salehi, 2012; Ibrahim & Sango, 2017). Furthermore, teachers face a lack of incentives and support across schools are other impeding factors in the use of ICT resource and lack of appreciation of the benefits of ICT used (Fallata, 2016). Furthermore, teachers' professional competency and perceived benefits in ICT and teacher cooperation affect teachers' perceptions of the use of digital content for the interest of student-centered education (Li, Yamaguchi & Takada, 2018). Finally, ICT is hampered by the still-weak socialization and low level of IT literacy among education's top leaders, particularly at the education unit management level (Mirfani, 2019).

Teachers are indispensable to adjust to the teaching and learning process (Raman & Yamat, 2013). ICT is a valuable tool for enhancing performance, collaboration, learning experience, and learning goals (Albugarni & Ahmed, 2015). However, despite having adequate technical support, teachers do not use ICT in the classroom (Raman & Yamat, 2013; Dube, 2017) due to perceived building blocks when it comes to the use of information and communication technology (Nikolopoulou & Kapodistrian, 2016).

Basak and Govender (2015) "identified eight challenges that prevent teachers from implementing ICT in the classroom namely: fear of failure/anxiety among instructors about their ICT knowledge/lack of self-confidence in ICT; lack of technological expertise / lack of ICT tools and software skills a scarcity of qualified ICT coordinators to help teachers in integrating ICT in the classroom and lab, as well as a positive school culture; Negative Attitude & Teachers' Reluctance to Change attitudes /attitude toward technology/opposition to organizational change/opposition to the intervention from outside sources; Time management issues / there isn't enough time each day to adequately incorporate technology into the curriculum; a lack of training and

practice / a lack of appropriate staff training and quality training for teachers, school personnel and administrators; accessibility Issues, inadequate access/ /inadequate numbers of computer systems / inadequate simultaneous internet access /the lack of hardware and software /inadequate computer resources /lack of appropriate infrastructure / poor ICT resources in schools; inadequate technical support /insufficient assistance /waiting for websites to load /failure to connect to the internet / administration's lack of assistance/ insufficient on-site assistance for teachers using technology /a lack of assistance supervising students when using computers; others obstacles integrating ICT instruction in classrooms / inadequate course content and instructional programs /visibility and trialability/lack of link between personal ICT use and lack of institutional support /lack of assistance in supervising children when using technological equipment/ perceptions of instructors /personal and psychological factors /lack of financial assistance." These issues influence the use of ICT by teachers in the classroom (Fallata, 2016).

Many schools struggle with implementing information and communication technology (ICT) into their classroom instruction (Saxena, 2017). Green (2016) cited that teachers become hesitant to incorporate technology into curriculum-driven lessons because of time constraint issues, insufficient number of devices, concerns about professional development/training, and a lack of knowledge to integrate ICT. Haney (2018) stated the possible issues on the use of ICT in the classroom. "(a) Some teachers resist technology adoption due to their skepticism of technology, believing that technology will aggravate pupils' behavioral problems and slow the pace of their cognitive development; and (b) resource constraints continue to be an issue. Teachers are encouraged ICT as problem-solving tools to strengthen their instruction (Teo et al., 2015).

In Zamboanga del Sur Division schools have utilized ICT in teaching in response to DO No. 26, s. 2009. There are public elementary schools that are recipient of DepEd Computerization Program (DCP) which provides with ICT tools such as, minimum of 10 computer units, projector, printer, laptop for mobile teacher and meeting projector screen house in school E-classroom. Some selected big schools have 50" flat screen televisions in their classrooms. Other television sets were taken from PTA projects for SSES curriculum. For public school teachers, access to technology remains

an issue. As observed there are teachers who did not utilize such ICT tools in the classroom in regular basis but only during classroom observation demonstration that is done quarterly. The usage of ICT as instructional tool is not consistent with their classroom learning activities. Moreover, teachers' attitudes and motivation face by various challenges in the use of ICT. These observations motivated the researcher to conduct the study.

This study explored the challenges experienced by teachers' in using information and communication technology in the classroom.

## METHODS

### *Research Design*

This study employed the Moustakas' transcendental phenomenological design in investigating the challenges that teachers faced in the utilization of ICT. Transcendental phenomenology assists the researcher in understanding what an experience means to the people who have had it and can offer a detailed account of it (Moustakas, 1994). Individual descriptions are used to extract general or universal interpretations; or the essences of the experience's structures. The cornerstone of transcendental phenomenology of science is meaning.

Transcendental phenomenology is an effective method for gathering and analyzing data that elucidate the essence of human experience (Moustakas, 1994). It enabled the researchers to create an objective essence by pooling subjective experiences from several individuals. The two inquiries, "how" and "what," gives a framework for asking inquiries and documenting responses. This method allowed the stories to be delivered from the participants' perspectives rather than the researcher's (Moustakas, 1994).

### *Research Setting*

The study was conducted in the public elementary schools of the five municipalities in the First Congressional District of Zamboanga del Sur, namely: Municipality of Molave, Municipality of Tambulig, Municipality of Mahayag, Municipality of Dumingag, and Municipality of Josephina.

### *Participants of the Study*

The participants of the study were the twenty elementary school teachers selected through purposive sampling. The criteria in selecting the respondents were: 1) currently handling ICT classes, 2) have at least one year

experience in teaching ICT, and 3) had given the consent to participate.

### *Instrument*

The interview was done in a face-to-face manner. A semi-structured interview is conducted with each participant. Each interview lasted between 20-30 minutes, and interviews were audiotaped and transcribed verbatim. Meetings were held in the participants' homes or in the schools, and the researcher will conduct all interviews.

A semi-structured interview guide was used in the conduct of the interview. The interviewer also has some freedom to probe and explore additional questions in response to what was seen as significant replies (Bryman, 2004) while at the same time allowing rapport and empathy to develop between the researcher and the participant. An interview schedule was prepared to aid the researcher with the structure and flow of the interview. The participant was presented with a similar set of questions relating to overall live experiences and their impact on their lives.

The questions were mainly open-ended questions with a small number of closed questions relating to age, sex, civil status, educational attainment, number of years teaching, seminars attended related to ICT and the availability of technological devices in school, at home and internet connection. The semi-structured interview guide is reflected in Appendix D.

**Data Collection** Before conducting this study, the researcher ensured secured consent of all participants. Participants were given advanced notice before the interview, a broad outline of the subject to be discussed, an indication of the type of information required of the participant, the research being carried out, and how the information they provide will be used. After the identification of the final participants, scheduled interviews were conducted. The conversations were digitally recorded and transcribed. The discussions were conducted in two days, and each one lasted for approximately forty-five minutes to one hour. The researcher marked the interview time, noted participants' behavior, and reflected them in her journal for review and transcription purposes.

Starting the interviews, the researcher would have greeted the participants and state the purpose of the discussions. The participants were informed again of the right to withdraw at any time and maintain confidentiality. They are asked to review drafts of the



written report of the study and give additional feedback to establish the accuracy of the findings. One of the procedures for verifying is this type of checking the accuracy of the data (Creswell, 2016).

The interview protocol (Challenges Experienced by Teacher in Utilization of Information and Communication Technology in the Classroom) was followed. The questions were open-ended, as a characteristic of phenomenological interviews. The participants were encouraged to share with the researcher the details of their experiences. Probing questions were asked to gain a detailed description of the experience needed for the study and clarify the meanings of participants' statements regarding their experiences of the challenges they encountered in the utilization of ICT in the classroom.

**Ethical Considerations.** Autonomy is respect for the freedom to decide or to self-determination through the process of informed consent. The written informed consent for the participants' were an ongoing manner throughout the study, and they were informed of the following: aim of the study; any foreseeable risk participation; potential benefits to themselves or others; confidentiality protections; researcher's contact information for answers to questions regarding the study; conditions of participation, including the right to refuse or withdraw at any time.

### **Data Analysis**

In this study, Moustakas' (1994) data analysis technique of phenomenological reduction was used. The transcripts of all participants gathered from the interviews were analyzed using the methods of Moustakas. The following are the steps in the phenomenological reduction which serves as guide in analyzing the data gathered: (1) bracketing, (2) horizontalization, (3) clustering (4) textural description, (5) structural description, and (6) textural-structural synthesis.

Bracketing is a technique employed to reduce the impacts of preconceived assumptions and impressions held before the investigation's commencement. It is a process of suspending judgments and prejudices, often known as the 'epoché.' As a result, from a subject and population selection through interview design, data collecting and interpretation, and presentation of study findings, I achieved a deep level of inquiry.

Horizontalization technically refers to the listing of all verbatim terms relevant to the investigation. Initially, I

examined each proposition with equal weight. Then I ignored remarks that I thought irrelevant, repetitive, overlapping, or outside the focus of the research. Horizons are regarded as the constituent and relevant elements of the phenomena since they are the leftover sections after the data has been refined (Moustakas, 1994).

Clustering is the third stage in deriving research conclusions. It entails distilling experiences into invariant horizons, developing essential themes, and validating the invariant horizons with numerous data sources. I grouped the statements into themes and ensured that each theme is suggested with just one interpretation when reducing them to vistas. This is referred to as putting the phenomena into a "textural language." To confirm the study's invariant horizons, I evaluated the findings of research studies that employed techniques other than the data-gathering methods utilized in the study, such as observation, field note-taking, focus group interviews, and relevant literature. This validation procedure is critical to the representations' correctness and clarity.

Textural description, sometimes known as 'what happened,' refers to a narrative that details how the phenomena were seen. To generate a textural description of the participants' experiences, I took verbatim extracts from the interview and provided a narrative of the meaning units generated from the themes.

Structural description, or 'how it happened,' is incorporating creative variety, which is a clever view and insights, to the textural description. An imagined variation is defined as a mental experiment that analyzes the specifics and structures of the participants' experiences while being removed from natural tendency via epoché. To produce a structural description, it is attached to each paragraph of textual descriptions.

During the textural-structural synthesis process, I compiled the meaning units of each participant and created a composite of textural and structural descriptions that they all shared. A narrative or synthesis represents all of the players and was written in the third person. The fundamental purpose of this third stage in Moustakas' technique was to capture the essence of the phenomenon's experience.

### **RESULTS AND DISCUSSION**

This research included twenty teachers with ages 26 to 56 years old. There were seventeen females and three

males. Seventeen out of twenty are married, while three teachers are single. They have been teachers at the government schools for three to thirty-two years. They work as classroom advisers and subject teachers. In upland, lowland, and remote barangays across the municipalities of Zamboanga del Sur. The study yielded four themes: lack of training on the skills needed in teaching ICT; poor internet connection; insufficient computer hardware for ICT instruction; and pupils' difficulty with technological devices.

### ***Lack of Training on the Skills needed in Teaching ICT***

One of the difficulties that must be highlighted in the current context is the lack of training or technical skills in using ICT in the classroom. This may make teachers hesitant to modify their teaching approaches. Teachers need to calibrate their talent/ability to acquire the necessary skills, knowledge, and attitude. Teachers must step outside of their comfort zone and integrate ICT into the instructional setting. Better technical abilities are required to prepare instructors to use from ICT use. Teachers' technical mastery of ICT abilities is not a sufficient basis for successful ICT integration in the classroom. When teachers are digitally knowledgeable and trained to use ICT, they can have higher-order thinking skills, provide creative and individualized options for students to express their understandings, and leave students better prepared to deal with ongoing technological change in society and the workplace. (Goodwin, 2012). 'One-time training' is insufficient. The participants cited,

*"Based on the experiences I had, we could not deny that though we like ICT in the class, we know how to use it, but the problem is the availability of these gadgets because it takes a lot of money to have it. And sometimes also we already have the technology but even myself, I experience a problem how to use it. Learning how to use takes time this gadget" (P8)*

*"Though I almost to retire, I'm still I want to have more training in ICT to help me and enhance me" (P6)*

*"My skills in the computer is not good and I have no budget for internet load" (P20)*

Teachers must be exposed to ICTs regularly to assess and pick the most relevant resources. The development of suitable instructional practices, on the other hand, is regarded as more vital than technical knowledge of it. ICT technologies are critical in enhancing access to and

the quality of teacher education. It is feasible to train many teachers to utilize various ICT technologies, and instructors from all areas may attend and obtain skills to further their teaching careers (Tarus, 2015). When instructors have technical skills and are equipped with ICT tools, the value of ICT applications improves, which benefits both instructors and students—a crucial tool for channeling the classroom to a wide range of educational possibilities in all learning areas. With regard to DepEd mandate on ICT utilization. Educators are encouraged to embrace technological tools to determine professional development with good manifestation ICT skills and engage them in teaching instruction beyond the four walls of the classroom.

The needs to have training in ICT is one of the very significant aspect of teachers' capacity in realizing the change in the educational process. A deficiency in this area may ruin the process of learning and greatly affect the pupils' performance as well. The needs of training are a good indication that teachers are able to recognize and evaluate their personal ability in the utilization of ICT in their respective classroom and that certain needs should be addressed. In this way, there should be training conducted to cater different needs of professional and technical needs.

Teachers lack training and assistance. Overcoming these consensus should be the top priority for institutions. ICT provides limitless sources of knowledge in ELT, and instructors must be prepared to meet new education problems and technology (Silvianti & Yusuf, 2015). One of the highlights in the realm of education is ICT navigation. Educators are challenged to think outside the four walls of their classroom. Technology applications continue to advance significantly in the classroom context, with video creation/editing being a top priority on their training list and demands.

*"I think we need training in computer troubleshooting, video making and editing and other technology training" (P3)*

*"My training needs are video making and video editing" (P5)*

*"My training needs are making graphics and video making" (P14)*

*"I like to have training on graphics, video making, editing, and photo editing" (P17)*

*“I like to train more on graphics and video making” (P18)*

*“I need more basic training on computer operation” (P10)*

*“I need more training on graphics and more on PowerPoint presentation” (P13)*

They think that video production and editing are teaching tools that improve learning techniques in the classroom. The skills can overcome the literacy gap among instructors, students, administrators, and parents in this new normal setup in which investigation of the learning environment in a more realistic life context is important. Making and editing videos are an excellent way for teachers to contextualize topics. Through the process, children become more engaged, expressive, and reinforced. The instructor, however, has difficulties with technical skills, equipment, and time.

**Poor internet connection**

One of the issues with using ICT in the classroom is an inconsistent or non-existent internet connection. Undoubtedly, these are areas where there is no internet connection. Some participants claimed to have sluggish or unreliable internet, limiting teachers' use of ICT in the classroom.

*“Internet connection has always been the biggest challenge in the utilization of ICT in the classroom, also a lack of support for educational staff and students. Inadequate teacher competencies for using specific software, as well as insufficient funding for teachers' professional development in the ICT field.” (P4)*

*“The challenges I face in using ICT in the classroom is the lack of on-hand knowledge of the computer and internet connection” (P3)*

*“Unfortunately no internet connection in school and no assistance from the administration” (P19)*

The internet is the medium by which information stored in files or documents on a computer is disseminated. It provides a variety of services and information, including online chat, file sharing, e-mail, interconnected Web pages, and other World Wide Web publications. Thus, the Internet ushers a new era of knowledge generation and dissemination - the soft form (Agil & Ahmad, 2011).

Upland communities, far-flung barangays, and isolated locations all have the same problem: no internet connectivity in schools, affecting instructors' motivation to use ICT in the learning process and students' performance. More users slow down internet connectivity. In such cases, teachers must choose between using alternate methods of instruction, or returning to established methods.

**Insufficient Computer Hardware for ICT Instruction**

The number of computers in school is not adequate for all students. This limitation deprives some learners of the benefits of information and communication technology (ICT) in the learning process. They remain not computer literate because of the lack of exposure. Inadequacy of computer in the schools.

*“The first challenge is the lack of computers in the school, then next is the unavailability of internet connection, we also lack of the proper training about this ICT Pupils who don't have gadget are not that motivated to continue to learn about ICT.”(P2)*

*“What challenges us in our school is the unavailability of internet connection. Also, the number of computers is not adequate to the number of pupils.” P11*

*“As of now, one of the challenges is that the school only receives the first batch of DCP package, hence, so the school needs another batch of computer package so that the learners or the whole school can use or can utilize the package. As of now there is only one unit of desktop that the school is using. How about if classes will resume with face instruction and if it needs to use the ICT. Learners cannot use it without another batch of computers for their learning and for classroom teaching.”(P1)*

*“Internet connection and technological devices.” (P13)*

A lack of computers will impede the ICT utilization in the classroom. ICT deployment can be costly, and the use of computers shared with other instructors is highly cumbersome. In this digital age, ICT use in the classroom is critical for pupils. Teachers have to utilize ICT in teaching but there is a shortage of computers in schools. (Ghavifekr (2016).

The absence of computer supply in the school technically hinders learning opportunity. In light of this matter, DepEd authorities may consider the necessity of this platform, identify and provide initiatives on the sufficient supply of updated technological facilities as



part of learning and better performance of the educational system.

### *Pupils' difficulty with technological devices*

Teachers adopt suitable measures to aid in the use of ICT in the classroom as part of their initiative. Although technology have been used to some extent to assist learners, it is pupils' difficulty with technological devices that is partly encountered in some level of classroom setting, particularly in far-flung barangays. In the study, the participant mentioned that she discovered that some pupils are not familiar with technological devices.

"Pupils are not familiar with technological devices such as cellphones, laptops, computers and more As a teacher, I make sure first to download every educational lesson related to my topic so that I can already play the video or audio without any interruption in the school." (P4)

The impact of technology on children's daily lives is significant in today's society, with children referred to as natives and generation (Bosworth & Goodyear 2017). Ordinary pen and paper for academic instruction and learning may become obsolete. Mobile technology, including apps, devices, and various learning aids, is one of the critical mainstays of life today. Technology in the educational arena is rapidly increasing along with the number of available devices and applications. A significant allocation has been distributed to school systems to implement the concept of technology into the classroom by providing students and teachers with mobile devices (Tanguay, 2016). An abundance of technology is already available to teachers and students, including smart boards, smart printers, laptops, tablets, and other devices (Eleazer, 2020). The adaptive technology skills are required to provide significant guidance for child protection and careful engagement with digital information as part of the natural growth and development rights (Huda et al., 2017). However, it has been discovered that using ICT that is not tailored to educational purpose has a negligible effect on educational outcomes (Srijamdee, 2020).

In most cases, far-flung barangays are the most affected in this situation. Hence, teachers are encouraged to extend a helping hand in the practice of their profession. They can apply ICT in various ways to enhance technological learning among learners. School administrators may also take notice of actual school condition so that appropriate actions can be taken.

### CONCLUSION

Information and communication technology is critical for any organization to remain competitive. In the education sector, ICT has aided the enhancement of modern methods of learning and teaching, through assistance in the delivery of high-quality education and preparing students for the information and technology age (Mogwe, Balotlegi 2020) However, teachers encounter challenges such as the lack of training on the skills in teaching ICT, poor internet connection, insufficient computer hardware for ICT instruction and pupils' difficulty with technological devices. Teachers should participate in ICT training. School administrators should evaluate teachers' performance in order to identify the training needs and develop profession growth programs.

Based on the study's findings and conclusions, it is recommended that teachers and instructors receive ICT upgrading training. Schools adopt and use current technological facilities to improve communication within the education system through the effective flow of information among teachers, students, and administrators. A proposed enhancement training plan at the school level may address teachers challenges on the use of ICT specifically in the teaching and learning process. Teachers may also get ICT upgrading training. Future studies need to look other variables that could suggest programs on how to further uplift teachers' technical skills as part of professional growth.

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