TECHNOLOGY LITERACY OF SCHOOL HEADS, TEACHERS AND PUPILS IN THE CENTRAL ELEMENTARY SCHOOLS IN THE DIVISION OF SAMAR : BASES FOR OPERATIONAL PLAN

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APPROVAL SHEET

In partial fulfilment of the requirements for the degree, **DOCTOR OF PHILOSOPHY (Ph.D.)**, this dissertation entitled **"TECHNOLOGY LITERACY OF SCHOOL HEADS, TEACHERS AND PUPILS IN THE CENTRAL ELEMENTARY SCHOOLS IN THE DIVISION OF SAMAR: BASES FOR OPERATIONAL PLAN"**, has been prepared and submitted by **MARICEL OCANA-BARDELAS**, who having passed the comprehensive examination and pre-oral defense is hereby recommended for final oral examination.

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The Researcher

DEDICATION

My humble effort I dedicate this to **God** for the gift of knowledge who made me what I am today,

To my **parents and love ones** who's affection, love, encouragement and prays of day and night makes me able to get such success and honor,

The Researcher

ABSTRACT

The study assessed the Technology Literacy of Elementary School Heads, Teachers and Pupils in the Division of Samar so as to provide input as the basis for an Operational Plan. This study employed the descriptive-development research design. It started with assessment of the technology literacy of the Elementary school heads, teachers and Grade Six Pupils in the Central Schools. Along with constructing and demonstrating knowledge on communication and collaboration, the older the pupil the lower their level of technology literacy; mothers who are self-employed or having their own business, pupils tend to have high levels of technology literacy and parents with high income, pupils tend to have high levels of technology literacy. School Heads and teachers need to undergo training on technology to enhance their competencies to help improve school performance. The School heads and teachers' level of technology literacy were at an impending proficiency along essential operational skills, constructing and demonstrating knowledge on communication and collaboration, internet use for independent learning and ethical, legal and safety issues. While, pupils were still below proficient to approaching proficiency. School heads had a higher level of technology literacy than teachers and teachers were technology literate that pupils. In the light of the findings and conclusions of the study, the researcher recommends the developing School heads and teachers competencies in using Technology by providing Technology Literacy Training as well as multi-media on classroom instruction.

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Chapter 1

THE PROBLEM AND ITS SETTING

Introduction

People live in a technological world. Living in the twenty first century requires much more from every individual, than to read, write and perform simple mathematics. Technology affects virtually, every aspects of life, from enabling citizens to perform routine tasks to requiring that they be able to perform routine tasks to requiring that they may able to make responsible, informed decisions that affect individuals, society and the environment.

According to Balmeo (2014), technology is known to be a growing part of any society today pervasively, had brought significant changes in the different fields like health, medicine, entertainment, business, trade and commerce, leisure, etc. The use of it is at least one unavoidable reality twenty years after the introduction of personal computer.

Technology provides a great deal of advantage in the delivery of equitable, quality education, thereby providing an opportunity to improve the lives of our people. The need to use new technologies to raise the quality and efficiency of education cannot be over emphasized. It is imperative that we expose our children, parents, teachers and school administrators to technology to improve the quality of education and technical proficiency of our human resources, thus leading to increased productivity and accelerated development.

Giacomini (2015) stated that major changes in technology have had an influence on education. Teachers cannot neglect the impact of new technologies and fail to incorporate them in their teaching practice because that would not cater to many students' needs. Ignoring technological advances would also entail not benefiting from an array of online teaching resources and academic material.

Teachers should consider that in today's classroom, the integration of technology, pedagogy and content leads to a deeper understanding of the different and more powerful roles that digital media can play in both teaching and learning.

On the other hand, school leaders are key factors in implementation of information and communication technology (ICT) in schools. They need to understand the capacities of the new technologies, to have a personal proficiency in their use, and be able to promote a school culture which encourages exploration of new techniques in teaching, learning and management (Arokiasamy, 2015).

In the age of information, principals must be able to integrate ICT into their daily practice and to provide consistent and positive leadership for technology use in the teaching-learning process. In fact, they must be technology leaders.

According to TSSA (Technology Standards for School Administrators) the principal's role as technology leader includes the following 10 tasks: 1) they should establish the vision and goals for technology in the school; 2) They should

carry the technology banner in the school; 3) they should model use of technology; 4) the principal should support technology use in the school; 5) they should engage in professional development activities that focus on technology and integration of technology in student learning activities; 6) they should provide professional development opportunities for teachers and staff that emphasize use of technology and that facilitate integration of technology into student learning; 7) they should secure resources to support technology use and integration in the school; 8) they should be an advocate for technology use that supports student learning; 9) they should be knowledgeable and supportive of national technology standards and promote attainment of the standards in the school, and 10) they should communicate the uses and importance of technology in enhancing student learning experiences to the school's stakeholders.

School leaders are expected to spearhead all the school improvement changes including those that are technological in nature. They, therefore, execute this duty in their capacities as technological leaders (Mwawasi,2014).

According to Arokiasamy (2015), ICT has pervaded almost every facet of our society. Around the world, ICT is ubiquitous in the business world, the workplace and at home. To ensure that schools keep pace with these developments in the larger society and to tap the enormous potential of ICT in teaching and learning, many countries have invested considerable amounts of resources to integrate ICT into education.

Inspite of how technology pervaded in the society, many researches and studies revealed on the low implementation or integration of technology in many schools. From the National Center for Educational Statistics (NCES), 99% of public elementary schools and 96% of elementary instructional rooms have access to the Internet. However, only about one-third of elementary teachers in the United States felt well prepared or very well prepared to use computers and the Internet for classroom instruction, and less experienced teachers felt better prepared to use technology than their more experienced colleagues.

In a similar but broader reaching finding, the National Assessment of Educational Progress (NAEP) reported in the 2001 US history *Nation's Report Card* that "58% of high school history students in public and private school rarely or never use computers" (National Council on Education Statistics, 2002).

In the Philippines also has the fastest growing internet population in the world, with penetration rising from 6% in 2008 to 37% in 2015. However, given the relatively low fixed internet penetration due to limited infrastructure and high costs (only 2.6% of the population has a fixed broadband subscription16), mobile is the primary device for accessing the internet, with mobile Internet adoption reaching 62% of total subscribers in the third quarter of 2014. This is the 3rd highest in South East Asia (GSMA,2014).

Hence, recognizing the importance of the school heads' and teachers' role in the educative process, this study was conceived to determine the technology literacy of school heads, teachers and pupils with the end in view of coming up

with an operational plan of the Division of Samar, which is one of the thirteen divisions in Eastern Visayas consisted of 659 elementary schools managed by school administrators with different designations such as Teacher In-Charge, Head Teacher or Principal. The schools are likewise grouped into districts headed by district supervisors with the guidance of the Education Program Supervisors.

Statement of the Problem

The study assessed the Technology Literacy of Elementary School Heads, Teachers and Pupils in the Division of Samar so as to provide input as basis for an Operational Plan.

Specifically, this study sought to answer the following questions:

1. What is the profile of the school heads and teachers in terms of the following

    1.1 age;

    1.2 sex;

    1.3 designation;

    1.4 highest educational attainment;

    1.6 number of years in administrative service/teaching service, and

    1.7. ICT training attended?

2. What is the profile of the pupils in terms of the following:

2.1 age;

2.2 sex;

2.3 average family monthly income, and

2.4 parents' occupation, and

3. What is the level of technology literacy of the three groups of respondents along the following:

3.1. essential operational skills;

3.2 constructing and demonstrating knowledge on communication and collaboration;

3.3 internet use for independent learning, and

3.4 ethical, legal and safety issues?

4. Are there significant differences in the technology literacy of the three groups of respondents along:

4.1 essential operational skills;

4.2 constructing and demonstrating knowledge on communication and collaboration;

4.3 internet use for independent learning, and

4.4 ethical, legal and safety issues?

5. Are there significant relationships between the level of technology literacy of the respondents and their profile?

6. What operational plan for improved educational management maybe developed based on the findings of the study?

Hypotheses

The study tested the following hypotheses:

1. There are no significant differences in the technology literacy of the three groups of respondents along:

    1.1 essential operational skills;

    1.2 constructing and demonstrating knowledge on communication and collaboration;

    1.3 internet use for independent learning, and

    1.4 ethical, legal and safety issues.

2. There are no significant relationships between the level of technology literacy of the respondents and their profile.

Theoretical Framework

The study was anchored from various approaches: 1) **organizational knowledge creation theory** (Von Krogh et al., 2000; Nonaka, 2003); 2) **relational information literacy theory and practice** (Bruce, 1997a; Bundy, 2004); and 3) **systems thinking methodology** (Checkland, 1999; Checkland, 2000; Somerville et al., 2006).

Bruce (2000) argued that research driven by critical theory is intended to be empowering and participatory, and is likely to be of substantial concern to practitioners. Like other research approaches, critical research is recognizable through the philosophies and views supporting it. Relational research,

specifically phenomenography, searches to expose important differences or variations in people's ways of seeing aspects of the world. This is achieved through attending to variation in what is called the "relation" between people and the phenomenon of interest. Systems thinking methodology (Somerville et al., 2006) offers a holistic systems thinking framework comprised of rich pictures, root definitions, and conceptual models. This methodology provides common language and shared tools for discussion and analysis of the complexities and interdependencies of situated issues in order to facilitate participants' efforts to make tacit professional knowledge explicit.

In addition, Somerville et al. (2006) employed a theoretical framework for IT literacy that blends Eastern and Western approaches to knowledge creation through making implied information explicit and codifying it, while also enhancing implied knowledge flow through better human interaction to generate new ideas. Numerous studies use a well expressed theoretical framework and provide the research and practitioner community with new methods of thinking about significant aspects of information literacy.

However, as Lonsdale and McCurry as cited by Ezziane (2007) argue, not all 183 new theories have added much value to existing conceptualizations of literacies. Their research review suggests that the most explicit and comprehensive theoretical framework for the investigation of literacies includes two taxonomies. The first taxonomy separates the motive of the literacy according to who benefits from literacy: the individual or society. The second

taxonomy positions various conceptual and practical aspects of literacy enhancement into two models: autonomous and ideological. Various taxonomies classify theoretical and practical perspectives according to different criteria. For example, Ba et al. (2002) classify the definitions of digital literacy according to their conceptual and operational features. They identify four major groups of definitions: technical, generic, generic with information technology, and problem-based.

Corbel and Gruba (2004) classify perspectives of computer literacy according to their conceptual origin. They identify four categories of perspectives: skills, textual practices, sociopolitical, and information. The basic IT skills perspective has a more empirical, rather than philosophical, conceptual base (Martin 2000) and a strong wide-ranging practical presence in day-to-day IT literacy teaching and assessment practices (ECDL 2004). This perspective focuses on the basic practical skills needed to use computer hardware, software, and networks. The cognitive perspective focuses on IT literacy outcomes from a generic skills angle. This view integrates IT knowledge and skills with problem-solving and information handling capabilities (Markauskaite, 2006).

Therefore, theoretical works and practical implementations emerge in different disciplinary domains such as information literacy (Eisenberg & Johnson, 2002) and interdisciplinary domains (Candy, 2004).

Conceptual Framework

The schema which would serve as the guide of the research in the conduct of this study is shown in Figure 1.

The bottom frame reflects the Public School Administrators, teachers and grade six pupils of Public Elementary Schools and one Private elementary school in the in the Division of Samar who were the respondents of the study. They were given questionnaire to get the respondents profile and the technology literacy.

Indicated in the second box is the Profile of the respondents such as the age, sex, designation, highest educational attainment, number of years in service, average family income and for the pupils, the parents occupation and number of times attended a technology literacy training.

The study would like to find out the Technology Literacy of Public school heads, teachers and pupils in the Division of Samar as well as the problems encountered by the school heads, teachers, and grade six pupils in the implementation of technology literacy in the school.

The findings of the study would serve as feedback mechanism for operational plan on technology literacy.

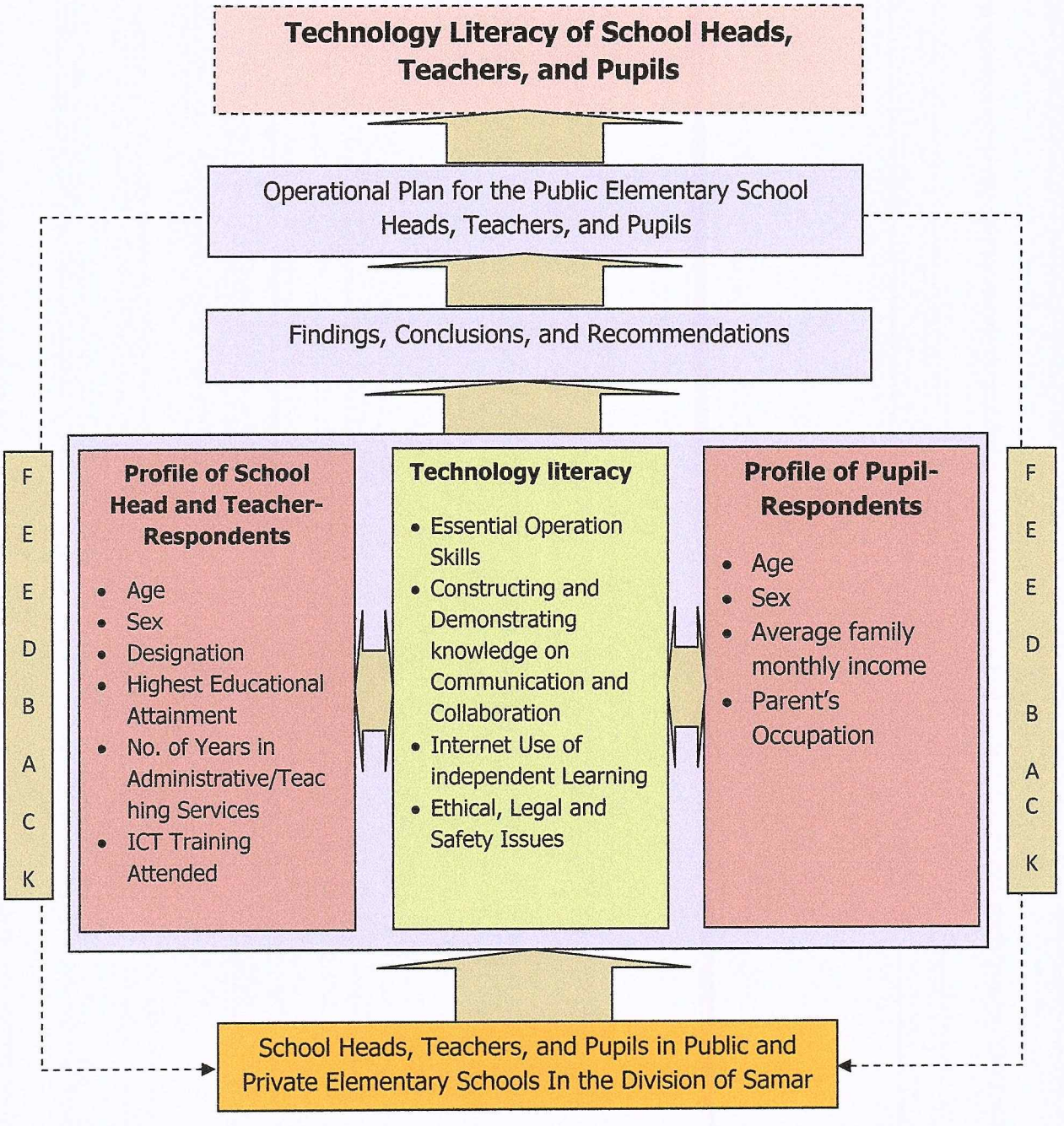

Figure 1. Conceptual Framework of the Study

Significance of the Study

With the goal of developing elementary school heads, teachers and pupils that are technology literate to achieve quality education, this study would be valuable specifically to the following stakeholders:

To the division training and development team. This would give significant insight to the Division Training and Development Team to cater the Technology Literacy Training needs of the Elementary school heads, teachers and Grade Six Pupils of the Division of Samar.

To the public school heads. This would help them asses their technology literacy needs for an effective school administration and management.

To the teachers. The findings of this study would give them insights about the technology literacy competencies and management of their school administrators for them to understand and avoid conflict and misunderstanding between them. Further, teachers must understand the importance of technology literacy as a medium of instruction.

To the pupils. This would help the school administrators and teachers to give the activities needed to develop the technology literacy skills of the pupils so will enjoy learning in school where technology literacy is given priority.

To the parents. The parents would be updated on school activities and the performance of the pupils if the school is using technology in information dissemination.

To the future researchers. Future researchers would likewise find this study invaluable as a reference in terms of the instruments or research design which they can apply in their research undertaking.

Scope and Delimitation

The study assessed the technology literacy of public School heads, teachers and pupils with the end in view of enabling an operational plan. The Division of Samar, Eastern Visayas was the research environment of the study.

The investigation involved 30 public elementary school heads, 242 teachers and 390 pupil respondents. The public elementary school head-respondents was chosen by total enumeration while the teachers and pupils were randomly chosen using stratified sampling and the number of samples were determined with the use of Sloven's Formula.

The focus of the study was limited to the following: the profile of public elementary school heads, teachers and grade VI pupils in terms of age, sex, designation, highest educational attainment, number of years in the administrative service, technology literacy trainings attended, total number of technology literacy related trainings attended. It includes the school heads, teachers and pupils technology literacy and problems encountered by them.

This study was conducted during the school year 2015-2016.

Definition of Terms

For common frame of reference for both the researcher and the readers, so as to provide a clear understanding of the concepts used in this study, the following terms are herein defined both conceptually and operationally applied in this study.

Constructing and Demonstrating Knowledge on Communication and Collaboration. This is defined as the abilities and knowledge needed to perform specific tasks such as texting and calling, connect social networkings, and can operate DVDs, VCDs, and LCD projectors.

Internet Use for Independent Learning. This is defined as the abilities and knowledge on how to manage and use internet such as; knowledge on surfing the web, upload and download information, and can access information through online.

Essential Operational Skills. This is defined as the abilities and knowledge needed to perform specific tasks. They are practical, and often relate to mechanical, information technology, mathematical, or scientific tasks. In this study, it refers to the technical skills particularly on how to operate basic computer commands, interface, and applications.

Ethical, Legal and Safety Issues. This is defined as the knowledge and awareness of the technology users on the ethical, legal and safety issues in using technology.

School heads. In a broader sense, the term pertains to the individual who manages a business, public affairs, or a persons' state. (Oxford Dictionary of Current English, 1998:11). In this study it refers to the Teacher- in charge, Head Teacher or Principal in the public elementary school of the Department of Education.

Technology. This refers to the application of scientific knowledge for practical purposes, especially in industry (www.oxforddictionary.com/definition/english/technology). In this study it refers to the machinery and devices used in teaching and learning.

Technology integration. This term conceptually defined as the use of technology tools in general content areas in education in order to allow students to apply technology skills to learning and problem-solving (http://www.merriam-webster.com/dictionary/information % 20 technology). Operationally, it is viewed as the use of technology devices such as desktop computers, laptops, handheld computers, software, or internet for instructional and communications purposes.

Technological leadership. Conceptually defined as leadership which enables others to effectively and successfully use, manage, assess, and understand technologies of the designed world (Bowen et al, 2013). Operationally, it is defined as technology leader equipped within their particular context to make informed, value-laden decisions and participate in guiding technological development.

Technology literacy. Technology literacy is the ability of an individual, working independently and with others, to responsibly, appropriately and effectively use technology tools to access, manage, integrate, evaluate, create and communicate information. In this study, technology literacy refers to the use of technology tools like cellular phones, camera, video players, mp3, computer sets and the like.

Technology plan. Technology planning is defined as "the process of determining how your organization can best use technology to further your mission which involves assessing existing resources, defining your needs, and exploring solutions and for a successful planning process it would draw on management support and the leadership of a technology team made up of a range of staff members to provide input (netaction.org). In this study, it refers to the technology plan which outlines the integration of technology in the teaching and learning.

Operational planning. This is defined as the process of planning strategic goals and objectives to tactical goals and objectives. It describes milestones, conditions for success and explains how, or what portion of, a strategic plan will be put into operation during a given operational period. An operational plan is the basis for, and justification of an annual operating budget request. A five-year strategic plan would typically require five operational plans funded by five operating budgets. (https://en.wiki/strategic_planning). In this study, it is basically defined as a plan for the implementation of strategies contained within

the Strategic Plan specifically on technology literacy of the school heads, teachers, and pupils.

Chapter 2

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents a review of both related literature and studies which have direct or indirect bearing on the research problem and the variables considered in the study.

Related Literature

Technology literacy is the ability of students to use the tools of their society with skill in an ethical, accurate, and insightful manner to meet the demands of the 21st Century workplace and world. This includes the ability to use appropriate technology responsibly to solve problems and to create knowledge and learning by Accessing, Managing, Evaluating and Analyzing, Integrating and Synthesizing, and Communicating information (Georgia Assessment Toolkit, 2013).

Technology literacy is the ability to responsibly use appropriate technology to communicate, solve problems, and access, manage, integrate, evaluate, and create information to improve learning in all subject areas and to acquire lifelong knowledge and skills in the 21st century.

Incorporating digital literacy provides opportunities to make classes and lessons more student-centered. Integrating hands-on technology into classrooms is important because students need to improve their digital literacy in order to be

successful in technology rich work and further education environments (Goodwill, 2014).

Literacy instruction traditionally refers to the teaching of basic literacy skills—reading, writing, listening, and speaking. However, in today's digital world, technology has contributed to an expanded understanding of literacy. Besides having basic literacy skills, 21st century students also need technology skills for communicating, analyzing, accessing information, thinking critically about messages inherent in the media, understanding data, and developing strong opinions (Tompkins,2010)

Innovative teaching requires the students to use technology and by themselves, realize the significance of the lesson. This was how my students acquired knowledge and skills; the knowledge in the lesson and the skills in using technology. Acquiring 21st century skills is vital for the students' success (Fernandez, 2014)

A result of the GILAS survey showed Forty two percent (42%) of public high schools do not have computers; 41% have computers but no Internet access; 17% have computers with Internet connection. Only a small proportion of households have computers (5.1% in 2003, 3.5% in 2000); less than 20% even in the most educated households(GILAS, 2014).

A school's internal administration is no longer a closed-circuit system but rather a dynamic educational ecology. Schools can no longer ignore the influence of technological development outside of the school. In particular, schools in the

information age can no longer face the rapidly changing world with an attitude that hopes to preserve the past. Similarly, the role of the principal has also changed from solely a school administrator to the current, multi-faceted role of curricular and technological leader. Therefore, the most important task of a principal is to figure out how to become an appropriate technological leader (Chang, 2012).

Some reasons for teachers to use technology in classroom instruction are to promote student agreement, to teach 21st century skills, to stay current, to have hands-on interactive learning, to vary instructional methods, to conduct research, and to communicate (Balmeo, 2014).

Students can learn that through collaboration, not competition, they can work together to make the world a better place. Students can use a vast array of technologies, including the Internet, and global collaboration to analyze, critique, and discuss critical issues (Tompkins,2010)

In the current information age, educational institutions are expected to play a crucial role, as the engine for knowledge generation and learning environment. In this regard, ICT becomes a vital means to facilitate this task. ICT has become an essential part of our daily life. Accordingly, its integration in education is inevitable and cannot be avoided (Ghavifekr et.al 2013).

The dominance of ICT in schools has inevitably altered the way principals execute their teaching and administrative duties. Using a computer is no longer a benefit for the few gifted ones but a necessity for almost all of those who wish to

be effective leaders of their school. Nowadays, the vast majority of principals in developed countries have access to a computer at school. But having access to a computer is not of such importance as using the computer productively for teaching and administrative purposes.

ICT are technologies which facilitate communication and thus the processing and transmission of information electronically. This ICT includes technologies and methods for storing, managing and processing as well as communicating information (Unachukwu, 2012).

ICT as an extension tool could enhance the flow of information in the application of school administration. Information administration consists of three main components namely Student administration, Staff Administration and General administration with Communication as an integral part of these three components(Unachukwu, 2012).

Adedapo (2007) argued that school managers need effective management of activities with the use of a computers and other Information Communication and Technology equipment Mention by (Adeyemi, 2011).

Implementing ICT into schools is the responsibility of the school principal, they need to ensure that the best interests of the students are served through effective ICT infrastructure and staff professional development. The principal is responsible that the investment, financial and otherwise, of ICT in the school is beneficial to the whole community. Principals must acknowledge the

pedagogical use of ICT in education and be prepared to lead these reforms (Gronow, 2007).

A principal facilitates teaching and learning by establishing a climate where teachers use their talents in making the learner discover and utilize their abilities to a maximum level. Further, a principal plays a very important role in the educational system (Labor, 2012).

Principals must make teachers follow him by crafting a school environment where all can take part and contribute individual resources to do more than just survive a complex progression of educational affairs. Create a positive culture where all education workers attain a high level of confidence, discipline and enthusiasm (Salonga, 2015:93).

To perform the duties of a principal effectively, the principal's own role is very much involved in using ICT. To realize their vision, principals need to be competent users of ICT, but as a learner of ICT, the principal's personal ICT competencies and understanding may not be as sophisticated as their vision (Gronow, 2007)Lee, Gaffney and Schiller (2001) (as mentioned by Gronow, 2007) listed the qualities of an ICT leader as: Understanding quality education in a networked world; Understanding of ICT as it relates to teaching and learning; Valuing the effectiveness of integrating technical and human resources; Able to operating within a networked paradigm; Appreciative of the importance of knowledge management; An excellent net worker; Having high level analytical skills; Having good interpersonal and management skills; Able to oversee the

work of other ICT staff; Able to lead the change management process; Able to provide education for all students in a digital world; Able to operate as an assistant or deputy principal (Gronow, 2007:5).

Moreover, According to Geijsel et al. 2003 (mentioned by Afshari 2012:2) a, transformational leadership has four specific dimensions: (1) Idealized influence. This dimension entails putting followers' needs first, being role models for followers, doing the right thing, demonstrating high moral standards, and avoiding the use of power unnecessarily or for personal gain. (2) Inspirational motivation. This factor describes the ways by which leaders motivate and inspire those around them, including practices aimed at creating attractive visions of future states, boosting follower goals, and inspiring enthusiasm and optimism. (3) Intellectual stimulation. This process is aimed at developing followers' capacities to higher levels and the practices of this process stimulate effort to become more innovative and creative (4) Individualized consideration. This dimension implies paying close attention to the needs and interests of the organization's members (Afshari, 2012:3).

According to Bass and Riggio 2006 (mentioned by Afshari2012:3), transformational leadership can be learned". Principals can learn the techniques through training and obtain the qualities they need to become transformational leaders.

Anderson and Dexter 2005 (mentioned by Afshari2012:3) suggested that professional development opportunities should be provided for principals to

promote their levels of ICT use and to increase their productivities. In fact, effective training programs help the principals to know and utilize computers for accessing and finding information and new knowledge. Furthermore, it helps them to develop processes for effective decision making and problem solving which eventually result in better accountability. The computer technology proved to be able to markedly improve the role of principals in the educational process. Therefore, it is very important for principals to know how to use new and existing technologies.

On the other hand, there is no accepted definition of what digital literacy is, but one of the most commonly used 25 covers three abilities: The ability to use digital technology, communication tools or networks to locate, evaluate, use and create information; The ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers; and a person's ability to perform tasks effectively in a digital environment. Literacy includes the ability to read and interpret media, to reproduce data and images through digital manipulation, and to evaluate and apply new knowledge gained from digital environments (Nutt,2010:2).

The principal develops personally as a powerful leader by leading the reform, without necessarily being the expert. The ICT leader gains credit for the accomplishment, giving satisfaction and ownership to the direction and decision involved in the shared vision developed by the principal, in collaboration with the school community (Gronow,2007:3).

In line with all the above mentioned literatures, the researcher would also like to mentioned different related studies.

Related Studies

A review of related studies both local and foreign was undertaken by the researcher on the technology literacy gain an insight an understanding into the development of this particular study.

Gastelu et al. (2015) conducted a study on Principals Perception of the Process of the Integration of ICT in Public Primary Schools in Veracruz, Mexico. In order to discover principals' attitudes towards incorporating ICT in public primary schools in Veracruz, a descriptive study with a quantitative approach was used. Directors from 214 public primary schools participated in the study. Representative probabilistic sampling was used with 41 principals giving a probability of occurrence of 90% with a standard error of 5%.The process of integrating ICT into the classrooms of public primary schools in the municipality of Veracruz is an unfinished process; data shows that the majority of principals has positive attitudes in this respect and they themselves have a certain degree of skills in this Malthusian technology, but mainly for carrying out their administrative work. They acknowledge deficiencies in infrastructure, training and the design of educational programs supported by ICT(Gastelu, 2015).

Balmeo (2014) conducted a study entitled Integrating Technology in Teaching Students with Special Learning Needs in the SPED Schools in Baguio

(City this study, the respondents included 53 teachers from the different schools offering special education in Baguio City. They answered to a self-made questionnaire consisting of 43 named hardware technologies and 13 named software technologies. Whiteboard resulted to be one of the most available technologies in teaching students with special learning needs, followed by Multimedia Software and electronic dictionary. With the data collected from the teachers themselves, technology integration appears to be an effective method in teaching students with special needs, whether this technology may be in software or in hardware form. Various factors, including time, knowledge in manipulation, financial resources, and the availability of this technology has affected teaching efficiency and student learning. Anent these factors, the administration, teachers and the students are considered to be the main proponents in the integration of technology for teaching-learning process to take place effectively.

Mwawasi (2014) worked on a research entitled "Technology Leadership and ICT Use: Strategies for Capacity Building for ICT integration." This study aimed at investigating how school leaders help build capacities of teachers to be able to effectively integrate ICT in their teaching and learning, at school level, in a public secondary school in Kenya. Using a qualitative case study approach, five school leaders involved in the capacity building, were purposively sampled for interviews, four teachers were engaged in a Focus Group Discussion and two teachers were observed engaged in classroom practice. Further, data was

obtained by analysing official school documents. The data analysed indicate the school leaders facilitated increased access to ICT facilities to the teachers and supported them, alongside training, to enable them explore various ways of integrating ICT in teaching and learning.

Another significant study conducted on the Teachers' Perceptions of Principals' ICT Leadership Ann-Louise Petersen University West, Sweden by Anne Louise Petersen on 2014. This article focuses on the leadership used by the principal in a collaborative ICT project. The case study chosen was a school project conducted within the NCCE project (Nordic Cross Country Education).

The EU funded project ran for three years in grades 5-9 in Sweden, Denmark and Norway. The goal of the project was to develop cross-border education models between the national education systems in the three countries. The project was based on virtual communication using digital technology. The study focuses on how the Swedish teachers from two schools involved in the NCCE project experienced the leadership of the principals in ICT related matters.

A qualitative method was used by interviewing the teachers in order to inquire about what kind of support they had received from the school leadership on pedagogical issues, technical equipment and ICT competence. The ICT leadership was analysed by Dexter's three basic features: setting direction, developing people and making the organization work. The result showed two kinds of leadership. The first one resembled a distributed leadership, where the principal worked closely with teachers and ICT managers, almost like being one

of the team. The second one resembled more a formal leadership where principals had a positive attitude towards ICT development but did not participate personally in the project work.

Mingaine (2013) conducted a study on the Leadership Challenges in the Implementation of ICT in Public Secondary Schools, Kenya. The study was designed to investigate school leadership challenge faced during implementation of ICT programs in public secondary schools in Kenya. From the study, it was evident that school leadership supported implementation of ICT through lobbying stakeholders to finance its implementation.

An article entitled "ICT Application for Administration and Management: A Conceptual Review" by Simin Ghavifekr et al (2013) deals about the various factors that influences the choices of school administrators as well as the reasons why ICT usage are adopted and why some are abandoned.

The result shows that majority of the school administrators have only intermediate level of computer expertise and possess and inadequate computer literacy. Based on the result of the study, several recommendations were made. First, School leaders need to develop ICT skills to be effective in their new role as technology usage leader. Then, ICT department of Ministry of Education in Malaysia should conduct ICT training sessions and workshop and designs various forums focusing on professional development of administrators in integrating ICT across school curriculum that will enable the administrators to become the ICT savvy leaders; Providing school administrators and teachers ICT

Tools such as laptops and software tools which will effect on their educational roles; Schools can also look for non -government sources of contributions to sponsor and aid various sources within the community to maintain sustainable level of hardware resourcing; the study also suggest that administrators need a comparative understanding of ICT integration, and must be willing to use their knowledge and resources to promote technology in their management task.

Moreover, Orit Avidov-Ungar from the University of Israel made a study on Empowerment Patterns of Leaders in ICT and School Strengths Following the Implementation of National ICT Reform. The purpose of the study was to evaluate the contribution of the ICT reform on schools' ICT leaders and schools' strengths. They also had a theoretical basis for assuming that the ICT leaders will experience personal empowerment as a result of their position and training.

The results showed that ICT leaders who reported pedagogical change at school also had significantly higher pedagogical and technological personal empowerment (Ungar,2013).

A survey on internet access and use by Filipino School children conducted by Asian Institute of Journalism and Communication reveals that Internet usage is 74 percent for all four areas, higher in both the Visayas area (90%) and Metro Manila (88%). The lowest incidence of usage is in Mindanao (47%). Mindanao and Luzon (particularly the Cordilleras which is survey site) are historically among the disadvantaged areas in the country. They have least access to social services, infrastructure and facilities, and economic opportunities. Adding

difficulty to Internet access in the Cordilleras is its topography which consists of mountain ranges. It makes Internet dependent on availability (and affordability) of cell sites and cables. About two out of five (38%) respondents have one computer in their homes. A significant proportion (42%) have no computers in their homes, with Mindanao respondents reporting the highest percentage (63%) of zero computer. This could be due to economic reasons. (Asian Institute of Journalism and Communication,2012:15)

In Brunei, Seyal (2012) made a research entitled "A preliminary study of school administrators' use of Information and Communication Technologies". The study surveyed 96 Bruneian primary schools administrators (principals) in using the Information and Communication Technologies (ICT). Out of the five subscales used to assess the ICT usage, only two: curriculum integration and need assessment were found to be significant towards the use of the ICT. The results further indicate that majority of the school administrators have intermediate level of computer expertise and possess an adequate computer literacy.

The school administrators use ICT for administrative purposes; however, the use of technology across the curriculum is still at infancy stage. The study has found some major reasons for the lack of use of ICT across curriculum.

Afshari (2012) in his study mentioned Stuart et al. (2009) explored the association between ICT competence of school leaders and the intention to master the ICT. Their findings indicated that the principals who perceived

themselves as technology leaders have high levels of ICT competence and that they use ICT frequently in their administrative and instructional tasks. Infact, competence in operating a computer and in utilizing software helps school principals to be effective technology leaders (Stuart et al., 2009). Therefore, principals as technology leaders should be fluent in the basics of word processing, spreadsheets, and presentation software.

Afshari et. al (2012) conducted a study on the "Factors Affecting the Transformational Leadership of Principals in Implementing ICT Schools" `in Malaysia. This study explored the relationships between variables related to the transformational leadership role of principals in implementing ICT in schools. All hypotheses, except the third one, were supported. This study indicated that computer competence was not a significant predictor of the transformational leadership role of principals in implementing ICT in schools (Afshari,2012).

This result implies that school principals who have knowledge and skill only about some aspect of ICT may not have intention to inspire and encourage teachers to become committed to using technology in their learning and teaching process.

This study raised some issues about the implementation of ICT in schools. Findings of this study indicate that factors such as computer use, professional development activities (with respect to the dimension of ICT and leadership) influence the leadership role of principals in implementing ICT in schools. Interestingly, computer competence had no significant direct relationship with

the transformational leadership role of principals in implementing ICT in schools.

This study compared the performances of the research model with and without inclusion of the direct effect of computer competence on the transformational leadership role of principals in implementing ICT in schools and found that the model excluding direct effect of computer competence on transformational leadership had a significantly better fit to the research data than the model including this effect (Afshari,2012).

Further, Adeyemi (2011) conducted a study entitled "Impact of Information and Communication Technology (ICT) on the effective Management of Universities in Southwest Nigeria. This paper examined the impact of information communication and technology (ICT) on the effective management of Universities in South-west Nigeria. As an ex-post facto and descriptive research, the study population comprised all the 11 public universities in the 6 States that make up southwest, Nigeria.

It was found that there was significant relationship between the use of information communication and technology (ICT) and the effective management of universities. It was also found that certain problems such as shortage of electricity supply and inadequate funding tend to inhibit the effective use of ICT in the universities.

It was therefore recommended that government in the respective State should urgently address the problem of shortage of electricity supply to the

universities and increase the funding of universities to meet up the UNESCO standard of 26% allocation from their annual budget (American Journal of Social and Management Sciences,2011).

I-Hua Chang (2011) researched on The Effect of Principals' Technological Leadership on Teachers' Technological Literacy and Teaching Effectiveness in Taiwanese Elementary Schools.

The purpose of the study was to investigate the relationships among principals' technological leadership, teachers' technological literacy, and teaching effectiveness. The survey target population consists of 1,000 teachers randomly selected from Taiwanese elementary schools. The survey asked teachers to measure the effectiveness of principals' technological leadership, teachers' technological literacy, and teaching effectiveness.

The findings show that principals' technological leadership improves teachers' technological literacy and directly encourages teachers to integrate technology into their teaching. Furthermore, teachers' technological literacy directly affects their effectiveness. Principals' technological leadership also makes teachers more effective. Principals' technological leadership, as mediated by teachers' technological literacy, can affect teaching effectiveness.

The results suggest that principals, as technology leaders, must develop and implement a vision and technology plan for their schools (Chang, 2011).

In Cyprus, Charalambous and Papaioannou (2008) conducted a study entitled "the public primary school principals' self-perceived competence and use of ICT for personal, teaching and administrative purposes.

The study surveyed a random sample of 250 public primary school principals, from April until June of 2008, in order to explore the principals' self-perceived competence and use of Information and Communication Technologies (ICT) for personal, teaching and administrative-managerial purposes in primary schools of Cyprus.

The results of the study revealed that primary school principals generally, do not feel very competent in using ICT, although the majority of them have received in-service training on ICT for personal purposes. Moreover, principals use ICT frequently but not on a daily basis. Also, principals feel more competent in using a word-processor and a search engine on the Internet than creating and using a spreadsheet or a database. Finally, it appears that principals use the computer more frequently for personal purposes, then for administrative purposes and last for teaching purposes (Charalambous,2008).

Totolo (2007) made a study on the selected principals of Botswana` The study examined information technology (IT) adoption readiness, more specifically computer technology, among principals in Botswana secondary schools. This research asked the question: Given that information technology, more specifically computer infrastructure, is in place in Botswana's secondary

schools, do the principals of these schools intend to support adoption and use by themselves, the teachers, and the students?

The research questions were as follows: what are the perceptions of the principals towards adopting computer technology in their schools? To address this question, four sub questions were posed: Do school principals report feelings of anxiety about computer adoption and use?; What are the principals' perceptions of the usefulness of computers in their schools? Do school principals report that computers are easy to use?; Do school principals intend to adopt and use computer technology in their schools?

On the principals' perceptions about the usefulness of computers, most participants reported that they found computers useful in their job. The question on the ease of use of the computer also revealed a positive response with the majority of the principals reporting that they found computers easy to use. In summary, it can be concluded that according to the reports of the principals, some principals are comfortable around computers while others are not. One of the findings from the interviews is that there are distinct groups within the research population.

There are two people who fall in one group of "Very Comfortable" users, three in a group of "Uncomfortable" users, three in a group of the "Comfortable" users, one in the "Neutral" position, and one in the stage of "Phobia." This result ties in very well with the results of the survey where the computer anxiety variable had 22 outliers.

This indicated that within the research population, there was a group of participants who reported that they experience some computer anxiety. Therefore, the interview findings were instrumental in establishing the different levels of comfort and discomfort around the computer. The reasons for the different stages of comfort and discomfort unfold throughout the discussion of the interviews (Totolo,2007).

Rose (2007) conducted a study entitled Perceptions of Technological Literacy among Science, Technology, Engineering, and Mathematics Leaders. This descriptive research study characterized and compared the perceptions of *technological literacy* among 13 leaders of professional organizations representing science, engineering and mathematics communities. The evidence suggests that these STEM leaders conceptualize it in subtly different ways and place priority upon different dimensions. The science informants tend to value the knowledge and abilities that enable them to conduct inquiry, solve problems, evaluate, and make wise decisions about technology within a larger social context. The engineering informants value the knowledge and abilities that enable them to apply engineering design in a human-synthesized world. The mathematics informants value technological knowledge and skill that enables them to understand and use technology to do and teach mathematics, as well as to make more informed decisions about personal and societal problems.

Further, a study on The Impact of Professional and Non-professional Teachers' ICT Competencies in Secondary Schools in Nigeria by Nwachukwu

(2006). This research paper sets out to identify and evaluate the relevant strategies professional and non-professional ICT instructional material utilization competencies play in stimulating students' academic achievement during and after instruction.

To achieve the purpose of this study, several statistical procedures were employed and the used tool was simple to meet the need of the categories of respondents used. The results of the findings points out that variety of techniques are needed for teachers to effectively utilize ICT instructional materials in the teaching and learning processes (Ololube,2006).

Nalugon (2015), Researched on the Influence of information and communication Technology utilization on teachers' performance: Towards enhancing technology-driven schools. This research paper sought to investigate how the utilization of Information and Communication Technology influences the teachers' performance among the Religious of the Virgin Mary Secondary schools in Luzon.

The simple descriptive survey and descriptive-correlational research methods were employed in exploring the influence between variables. The level of influence of the teachers' utilization of ICT resources on their performance was statistically analysed using multiple regression analysis. In this study, it was found that the teachers' utilization of ICT software resources in RVM schools in Luzon exerted significant influence on their performance in terms of promotion

of learning environment, diversity of learners, curriculum implementation and spiritual growth.

In addition, the teachers' utilization of ICT hardware resources exerted significant influence on their performance in terms of social regard for learning, planning, assessing and reporting, community linkages, personal growth and professional development, and spirituality. An ICT Strategic Plan was derived from the findings of the study to further improve the teachers' utilization of ICT resources (Nalugon,2015).

Mangaliman (2011) conducted a study on Leadership Competencies and Ethical Management Behavior of School Administrators in the Division of Leyte. The Findings of the study revealed the following: school administrators had minimal experience in their present station; found competent in their leadership competencies and they manifested ethical behaviour in managing the schools.

A research on Teachers' perspectives on the integration of information and communication technologies (ICT) in school counselling conducted by Masagca (2008), this qualitative study presents the different perspectives of teacher-participants from selected areas in Luzon, Philippines on the use and application of ICT in guidance counselling and the school counsellor's advocacy role.

A snowball sampling technique was used that required the participants to recommend others who are into ICT integration. The open-ended format or interview schedule was utilized to investigate the different (a) uses of ICT [e.g.

internet, e-mail], (b) problems/issues/gaps on the use and application of ICT or computer technology, and (c) innovative ways in using/applying ICT in school counselling. Results indicated that the views of the teacher-participants on ICT use generated the themes on (1) storing, encoding and preparing of materials/documents, (2) retrieving, distributing and utilizing data/information related to school counselling, and (3) other uses for entertainment, leisure and recreational activities. As to the potential uses of ICT, the subjects generated various uses as what they practice and what they have learned from their graduate courses on technology in education and knowledge management in education.

The issues and problems mostly relate to the economic aspects, costs, administrators' attitudes towards the use of ICT, quality of information and on the issue of commercialism. Innovative programs presented dealt on the individual needs of the pupils and on the career services, but not on the ways to improve the professional capabilities of the guidance counsellor(Masagca,2008).

A study on Educational Television- Aided Instruction and Pupils' Academic Achievement in the Division of Leyte: Inputs to Curriculum Development was worked on by Josol (2008). Based on the findings and conclusions formulated the following are recommended: Most female teachers and school heads implementers being mostly young and middle-aged , with the minimum experience and program involvement, respectively, program

implementers must be given as much exposure as necessary to within service or continuing education that focus on ETV or multi-media utilization(Josol,2008).

Magno (2006) conducted a study on Digital divide in Philippine schools. The study found out the following results: Top ten major obstacles to ICT Use for teaching and learning: In decreasing order –Lack of enough computers; Lack of enough technical support for operating and maintaining ICT resources ; Lack of teacher training opportunities; Lack of space for computers; Lack of funds for operations maintenance of equipment, purchase of supplies and electricity; Insufficient peripherals; Teachers' lack of knowledge/skills in using the computers and the Internet for instructional purposes; Insufficient staff to supervise students using; computers/Internet; Lack of time for teachers to explore use of computers and Internet; Not enough copies of software for educational use. Areas of ICT use in schools needing support: Information on how to use ICT to support the Curriculum; Use of ICT for administrative work; Developing the information-handling skills of students and teachers; Guidance over ICT capabilities prescribed at the national, regional and division levels; Use of ICT for both underachieving and gifted students; Use of ICT for pupils with sensorial or physical disabilities (Magno,2006).

The foregoing studies show resemblance to the present work since they pose consideration of ICT competencies and management of school administrators. The aforementioned literature and studies provided the researcher with a better grasp and perspective of this research work.

Chapter 3

METHODOLOGY

This chapter presents the methods and procedures employed in the conduct of the study. It specifically discusses the research design, instrumentation, validation of the instrument, sampling procedure, data gathering procedure and statistical treatment of data.

Research Design

This study employed the descriptive-development research design. It started with the assessment of the technology literacy of the Elementary school heads, teachers and Grade Six Pupils in the Central schools. The researcher used a questionnaire in-order to get the school heads profile, teachers and grade six pupils and problems encountered to effectively implement ICT in the school. The researcher employed stratified sampling in determining the teacher and pupil-respondents, while, total enumeration for the school head-respondents. The data was analyzed using frequency counts, percentage, arithmetic means, standard deviation, weighted means, Analysis of Variance, and Pearson Product Moment Correlation Coefficient.

Instrumentation

As previously mentioned, the researcher used a questionnaire checklist to gather data from the respondents.

The questionnaire checklist was prepared by the researcher and designed in a manner that obtained the desired data for the research problem which is the technology literacy of Elementary School Heads, Teachers and Grade Six Pupils in the Division of Samar. Part I deals on the Socio-demographic profile of the respondents such as age, sex, status, monthly salary, educational background, length of experience in the present position, technology trainings attended. Part II deals on information regarding the technology literacy of school heads, teachers and pupils of the elementary schools in the division of Samar.

The draft of the questionnaire checklist was prepared by the researcher taking into account instruments made by some researchers, and submitted to the research adviser and other experts for comments and suggestions as to their content, appropriateness and validity. All the suggestions for enrichment was carefully studied and incorporated in the drafted questionnaire checklist of the study.

Validation of Instrument

To determine the validity of the Questionnaire checklist, the following procedure was utilized, 1.) Dry run for the school heads, teachers and grade six pupils who are not respondents of the study. Since all the Elementary school administrators in the Samar Division were involved in the study, the dry run was conducted at Catbalogan City Division. They were appraised that the

questionnaire checklist was on the process of drafting and so they were free to suggest for its improvement.

To establish the reliability of the instrument, the researcher ascertained the consistency of the responses. The test- retest method where the same questionnaire was administered twice to the same group of respondents in an interval of one week was made (Calwin,1994:66). The responses for the two try outs was recorded, tallied and process through computation of Pearson- Product Moment Correlation Coefficient having reliability coefficients of 0.83 for school heads, 0.87 for teachers, and 0.89 for pupils. The questionnaire checklist was reproduced with the suggestions incorporated therein.

Sampling Procedure

The researcher employed stratified random sampling in the selection of the teacher and pupil-respondents. Sloven's formula was used to determine the number of teachers and pupils involved in the study. There were 390 pupils and 241 teachers involved in the study in the Division of Samar.

Total enumeration was utilized for the 30 school head-respondents involved in the study.

Data Gathering Procedure

After the approval of the Dean of College of Graduate Studies of the University, the researcher sought the permission of the Schools Division Superintendent to conduct the study to the elementary school administrators in

the Division of Samar. Then the approved request was presented to the school administrators. The questionnaire was administered personally to the individual respondents to ensure a high percentage of retrieval.

Statistical Treatment of Data

The data gathered was recorded, tallied, tabulated and analysed and interpreted. Both descriptive and inferential statistical tools was utilized such as frequency counts, percentage, arithmetic means, standard deviation, weighted means, ANOVA and Pearson product moment correlation coefficient with the aid of some statistical software, such as Microsoft excel and SPSS. In testing whether there was significant differences and relationship among variables, 0.05 level of significance was used.

Frequency counts and percentages. The statistical tool used to present the profile of the respondents the school administrators as to their number and category.

Arithmetic means. This statistic determine the profile of the school head, teachers and grade six pupils such as age, administrative experience and technology literacy trainings attended.

Standard deviation. This ascertained the variability of the individual data with reference to arithmetic means.

ANOVA. This statistical tool was used to determine significant differences among levels of technology literacy of the three groups of respondents.

Pearson r. This statistical test was used to determine the relationship between respondents' level of technology literacy and their profile variates.

Chapter 4

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter presents the analyses of the data obtained and the corresponding interpretation in connection with the specific questions of the study.

Profile of the School Head and Teacher-Respondents

Tables 1-5 present the profile of the school heads and teacher-respondents with respect to their age and sex, designation, highest educational attainment, number of years of administrative experience/teaching service and ICT training attended.

Age and sex. Table 1 presents the age and sex distribution of school head and teacher-respondents.

It can be seen that six school head-respondents or 20.0 percent are at the age of 43 - 45 wherein two of them are male and four are female and only one fall in the age bracket of 61-63 which is a female school head-respondents.

The mean age of the school head-respondents are posted at 47.00 years with a standard deviation of 8.09 years old.

Along with teacher-respondents' age and sex distribution, 56 or 23.2 percent belonged to age bracket of 42 - 44 years old wherein 2 are male and 54 are female. Notable, that there are only few teacher-respondents belonged to age

Table 1

Age and Sex Distribution of the School Head and Teacher-Respondents

Age	Male		Female		Total	Percent
	f	Percent	f	Percent		
School Head						
64-66	0	0.0	2	10.0	2	6.7
61-63	0	0.0	1	5.0	1	3.3
58-60	1	10.0	1	5.0	2	6.7
55-57	1	10.0	1	5.0	2	6.7
52-54	1	10.0	1	5.0	2	6.7
49-51	1	10.0	2	10.0	3	10.0
46-48	1	10.0	1	5.0	2	6.7
43-45	2	20.0	4	20.0	6	20.0
40-42	1	10.0	3	15.0	4	13.3
37-39	0	0.0	2	10.0	2	6.7
34-36	1	10.0	1	5.0	2	6.7
31-33	1	10.0	1	5.0	2	6.7
Total	10	100.0	20	100.0	30	100.0
Mean	45.00 years		43.30 years		47.00 years	
SD	7.81 years		10.44 years		8.09 years	
Teacher						
> 50	7	21.9	27	12.9	34	14.1
48-50	0	0.0	12	5.7	12	5.0
45-47	2	6.3	15	7.2	17	7.1
42-44	2	6.3	54	25.8	56	23.2
39-41	4	12.5	28	13.4	32	13.3
36-38	5	15.6	20	9.6	25	10.4
33-35	2	6.3	14	6.7	16	6.6
30-32	2	6.3	12	5.7	14	5.8
27-29	3	9.4	9	4.3	12	5.0
24-26	3	9.4	8	3.8	11	4.6
21-23	2	6.3	10	4.8	12	5.0
Total	32	100.0	209	100.0	241	100.0
Mean	40.41 years		42.32 years		42.08 years	
SD	11.75 years		10.78 years		10.90 years	

of 24-26 years old in which three of them are male and 8 are female. The mean age of the teacher-respondents posted at 42.08 years old with a standard deviation of 10.90 years. Evidently, majority of the school head and teacher-

respondents are at late forties and dominated by female teacher- respondents with the number of 210 against 32 for the male since the teaching profession is mostly taken up by females than males.

Designation/position. The designation/position profile of the school head and teacher-respondents is shown in Table 2.

As can be seen, majority of the school head-respondents are principal I accounted to nine or 6.70 percent followed by principal II (6 or 20.00%). The rest of the school head-respondents are teacher-in-charge, head teacher I, head teacher II, Head teacher III, and principal III.

Table 2

Designation/Position of the School Head and Teacher-Respondents

Position	f	Percent
School Heads		
Teacher-in-Charge	3	10.00
Head Teacher 1	3	10.00
Head Teacher II	2	6.70
Head Teacher III	4	13.30
Principal I	9	30.00
Principal II	6	20.00
Principal III	2	6.70
Not Specified	1	3.30
Total	**30**	**100.00**
Teacher		
Teacher I	62	25.70
Teacher II	39	16.20
Teacher III	90	37.30
Master Teacher I	36	14.90
Master Teacher II	8	3.30
Not Specified	6	2.50
Total	**241**	**100.00**

On the other hand, majority of the teacher-respondents are in teacher III position accounting to 90 or 37.30 percent followed with 39 or 16.20 percent are teacher I. The highest position/designation of the teacher-respondents is Master Teacher II (8 or 3.30%) while the least is teacher I.

Educational background. Table 3 reveals the educational background of the school head and teacher-respondents.

Table 3

Educational Attainment of the School Head-Respondents

Educational Attainment	f	Percent
School Head		
with MA units	6	20.00
MA CAR	9	30.00
w/Ph.D. units	11	36.70
Ph.D./Ed.D. CAR	2	6.70
Ph.D./Ed.D. Grad	1	3.30
Not Specified	1	3.30
Total	**30**	**100.00**
Teacher		
Baccalaurete Degree Holder	41	17.01
w/ MA/MS Units	100	41.49
MA CAR	89	36.93
MA/MS Graduate	10	2.07
Ph.D. CAR	1	0.41
Total	**241**	**100.00**

It appears that majority of the school heads are with Doctoral Units accounting to 11 or 36.70 percent of them followed by nine or 30.00 percent of them are MA/MS CAR. The highest educational attainment obtained by the school head is Ph.D./Ed. D. graduate while the least have with MA/MS Units.

In other words all of them pursued further studies after college as one of the qualifications for their promotions.

In the same manner, Table 3 shows the highest educational attainment of the teacher-respondents. It can be seen that majority of them have MA/MS units having frequency count of 100 or 41.49 percent followed by 89 or 36.93 teachers wherein they have attained MA/MS CAR.

This finding only indicated that teaching profession is now coupled with further studies for professional and personal growth of the teachers.

It appeared that the two groups of respondents considered education as necessary for the professional growth so that they pursued advance education.

No. of years in Administrative/teaching. Table 4 presents the number of years of administrative experience of the school head-respondents and number of years of teaching experience by the teacher-respondents.

The details of the number of years of administrative experience of the school heads reveal that their administrative experiences are thinly distributed from 2 to 18 years of experience having a mean of 8. 64 years with a standard deviation or 4.40 years. Obviously, most of the respondents in the group is at their early years as school heads which only implies that the energy levels are still at its peak.

Taking a glance on the teachers' number of years in teaching, 43 or 17.84 percent are having the experience as teacher ranging 9-12 years, followed by 39 or 16.18 percent are at their experience bracket of 7-20 years and the remaining

Table 4

Number of Years in Administrative/Teaching Experience of the School Head and Teacher-Respondents

No. of Years in Admin	f	Percent
School Head		
18	1	3.33
15	2	6.67
14	1	3.33
13	1	3.33
12	1	3.33
11	2	6.67
10	6	20.00
8	6	20.00
7	2	6.67
6	1	3.33
4	3	10.00
3	3	10.00
2	1	3.33
Total	30	100.00
Mean	8.64 years	-
SD	4.40 years	-
Teacher		
37 - 40	1	0.41
33 - 36	4	1.66
29 - 32	8	3.32
25 - 28	18	7.88
21 - 24	28	11.62
17 - 20	39	16.18
13 - 16	37	15.35
9 - 12	43	17.84
5 - 8	33	13.69
1 - 4	29	12.03
Total	**242**	**100.00**
Mean	**14.73 years**	**-**
SD	**8.84 years**	**-**

respondents are distributed in the other experience bracket specified. Noticeably, the mean number of years in teaching is posted at 14.73 year with a standard

deviation of 8.84 years. This only implies that teacher-respondents are not yet of their retireable age.

The two groups of respondents had accumulated a remarkable length of service in their respective occupation or profession. This indicated that they had specialized their expertise and competence in their respective fields.

ICT training attended. Table 5 explains the number of ICT training attended by the school head and teacher-respondents.

Table 5

Literacy Training Attended by the School Head and Teacher-Respondents

No. times of Literacy Training Attended	School Head		Teacher	
	F	Percent	F	Percent
5	3	10.00	5	2.07
4	3	10.00	6	2.49
3	5	16.67	12	4.98
2	5	16.67	23	9.54
1	10	33.33	66	27.39
0	4	13.33	106	43.98
Not Specified	0	0.00	23	9.54
Total	**30**	**100.00**	**241**	**100.00**
Mean	**2 trainings**	**-**	**1 training**	**-**
SD	**2 trainings**	**-**	**1 training**	**-**

It can be noted that out of 30 school head-respondents, 10 or 33.33 percent of them attended for about one ICT training while only four or 13.30 percent of them have not yet attended any ICT training. It only shows that almost all of the school heads have already background knowledge about ICT.

At a glance of the teacher group, it is notable that on average teachers attended only one ICT training accounting 66 or 27. 39 percent compared to 106 or 43.98 percent of the teachers that have not yet attended of the said training.

The two groups of respondents had the quest for enhancing their expertise so that when opportunity came their way to attend trainings, they grabbed it.

Profile of Pupil-Respondents

Tables 6 - 8 present the profile of the pupils in terms of age and sex, average monthly family income and parents' occupation.

Age and sex. Table 6 reveals the age and sex of the pupil-respondents.

Table 6

Age and Sex Distribution of the Pupil-Respondents

Age	Male		Female		Total	Percent
	f	Percent	f	Percent		
10	8	5.37	3	1.24	11	2.82
11-13	125	83.89	222	92.12	347	88.97
14 and above	16	10.74	16	6.64	32	8.21
Total	149	100.00	241	100.00	390	100.00

As presented, there are 347 or 88.97 percent of the pupils are having an age of 11-13 years old wherein 125 are male and 222 are female while 11 or 2.82 percent of them have an age of 10 years old. This finding shows that the pupil-respondents are in their primary level in education.

Average family monthly income. Table 7 discloses the average family monthly income of the pupil-respondents.

Table 7

Average Family Monthly Income of the Student-Respondents

Average Family Monthly Income	f	Percent
26,000 & above	11	2.82
21,000 - 25,000	17	4.36
16,000 - 20,000	47	12.05
11,000 - 15,000	26	6.67
6,000 – 10000	36	9.23
5,000 & below	240	61.54
Not Specified	13	3.33
Total	390	100.00

In can be gleaned that out of 390 pupil-respondents, 240 or 61.54 percent of them had an average family monthly income below Php5,000.00; 47 or 12.05 percent have an income of Php16,000 – 20,000 per month, and 36 or 9.23 have an income of Php6,000 – 10,000 a month. The highest monthly income revealed is posted at Php26,000 above accounting to 11 or 2.82 percent of the student-respondents.

The result can be implied that monthly family income of the pupil-respondents maybe not enough to support the basic necessities in life.

Parents' Occupation. Table 8 reflects the occupation of the pupil-respondents parents.

Looking at the parents occupation, mostly of the fathers are engaged in farming/fishing accounting to 174 or 44.60 percent; 64 or 16.40 percent are self-employed/engaged in own business, and 58 or 14.90 percent are engaged to government services like public teacher, soldier, policeman, fireman, etc.

Table 8

Parents' Occupation of the Student-Respondents

Parents' Occupation	Father		Mother	
	f	Percent	f	Percent
Farming/Fishing	174	44.6	86	22.05
Self-employed/engaged in own business	64	16.4	123	31.54
*Government Service like public teacher, soldier, policeman, firemen, etc.	58	14.9	51	13.08
*Employed in Private company/private employer	32	8.2	14	3.59
OFW	10	2.6	9	2.31
Housewife			34	8.72
Not Specified	52	13.3	73	18.72
Total	**390**	**100.0**	**390**	**100.00**

With regards to the mothers occupation, most of them are self-employed/engaged in own business having a frequency count of 31.54 percent followed by 86 or 22.05 percent of them are engaged in farming/fishing. While some them are engaged to government services like public teacher, soldier, policeman, fireman, etc; employed in private company/private employer, OFW and the others are housewife.

Level of Technology Literacy of the Three Groups of Respondents

This section discusses the level of technology literacy of the school heads, teachers, and pupil-respondents along with four components, namely: Essential operational skill, Constructing and demonstrating knowledge on communication and collaboration, Internet use for independent learning, and Ethical, legal and safety issues.

Essential operational skills. As to essential operational skills, the levels of technology literacy of the three groups of respondent are shown in Table 9. For the school head-respondents, there are only four skills that they are rated "Proficient" in which the top three skills that they school heads were considered proficient were: indicator number 1 which says "I know how to use the computer for encoding school related purposes" with a weighted mean of 3.07; indicator 2 which says "Can apply font, change font size and use features bold or underline" with a weighted mean of 2.97, and indicator 2 which says "I know how to print a file" with a weighted mean of 2.86. The rest of the skills revealed that school-respondents were still at "Approaching Proficiency" level of technology.

As a whole the grand mean of the group posted at 2.14 or "approaching proficient" level.

Looking into the teachers' group, the only essential operational skill that was rated as "Proficient" having a weighted mean of 2.51 was number 1 "I know how to use the computer for encoding school related purposes". While the least

Table 9

Level of Technology Literacy of School Head, Teacher, and Pupil-Respondents Along Essential Operational Skills

	Indicators	Respondents' Category						Combined Mean/Inter-pretation	
		SH		Teacher		Pupil			
		Xw/Inter-pretation		Xw/Inter-pretation		Xw/Inter-pretation			
1.	I know how to use the computer for encoding of school related tasks.	3.07	P	2.51	P	1.88	AP	2.49	AP
2.	I can copy and paste documents from different applications.	2.83	P	2.32	AP	1.51	AP	2.22	AP
3.	I know how to check computer, monitor and wall outlet for power connections and I can trouble shoot basic things before contracting the technology specialist.	2.48	AP	1.51	AP	1.35	BF	1.78	AP
4.	I can install new hardware such as modem, network card and speakers and I can use a printer and scanner.	2.07	AP	1.50	BF	1.23	BF	1.60	AP
5.	I can trouble shoot local printer problems.	1.55	AP	1.10	BF	0.89	BF	1.18	BF
6.	I can adjust the appearance of desktop and create shortcuts; Re-name Icons and identify different kinds of icons.	2.07	AP	1.62	AP	1.35	BF	1.68	AP
7.	Can apply font, change font size and use features bold or underline.	2.97	P	2.23	AP	1.50	BF	2.23	AP
8.	I regularly use spell checker.	2.31	AP	1.82	AP	1.55	AP	1.89	AP
9.	Can set margins and page properties.	2.76	P	2.06	AP	1.33	BF	2.05	AP
10.	Can insert page breaks, create columns, create headers and footers and add automatic page numbers.	2.31	AP	1.82	AP	1.13	BF	1.75	AP
11.	Can format a flier and use page lay-out programs.	1.93	AP	1.50	BF	1.03	BF	1.49	BF
12.	Can make a power point presentation.	2.25	AP	1.74	AP	1.12	BF	1.70	AP
13.	Can add multi- media effects like animations, videos and sounds on the powerpoint presentation that I use as a medium of instruction.	1.83	AP	1.60	AP	1.20	BF	1.54	AP
14.	Can create a simple spreadsheet (i.e. excel) to make a simple graph or chart and know how to add labels.	1.66	AP	1.51	AP	0.99	BF	1.39	BF

Table 9 continued

	Indicators	Respondents' Category						Combined Mean/Inter-pretation	
		SH		Teacher		Pupil			
		Xw/Inter-pretation		Xw/Inter-pretation		Xw/Inter-pretation			
15.	I can change the format of the spreadsheets to anything I need or want.	2.00	AP	1.40	BF	1.02	BF	1.47	BF
16.	Can open create and place pictures into documents using painting, drawing or image editing programs.	1.83	AP	1.70	AP	1.52	AP	1.68	AP
17.	I regularly update and use a virus checker and know when it is time to call a technology specialist.	2.10	AP	1.56	AP	1.10	BF	1.59	AP
18.	I can trouble shoot a network printer problem; understand what a print pool does and how to manage it. I can install a print driver.	1.69	AP	1.17	BF	0.90	BF	1.25	BF
19.	I know how to back up data and have a systematic plan in place to back up files regularly	1.72	AP	1.37	BF	1.05	BF	1.38	BF
20.	I know how to print a file.	2.86	P	2.23	AP	1.46	BF	2.18	AP
21.	I know how to use a scanner.	2.21	AP	1.66	AP	1.09	BF	1.65	AP
22.	I can troubleshoot basic things before contracting the technology specialist.	1.62	AP	1.17	BF	0.97	BF	1.25	BF
23.	Can create and draw graphics using software such as Photoshop or illustrator and I know when to use which type of program.	1.45	BF	1.14	BF	1.02	BF	1.20	BF
24.	Can edit image within software using cropping, resizing and rotating.	2.07	AP	1.66	AP	1.59	AP	1.77	AP
25.	I can make video clips that is use for instruction.	1.75	AP	1.45	BF	1.48	BF	1.56	AP
	Grand Total	**53.39**		**41.35**		**31.26**		**42**	
	Grand Mean	**2.14**	**AP**	**1.65**	**AP**	**1.25**	**BF**	**1.68**	**AP**

Legend: 3.51 - 4.00 Highly Proficient (HP)
2.51 - 3.50 Proficient (P)
1.51 - 2.50 Approaching Proficient (AP)
0.51 - 1.50 Below Proficient (BF)
0.00 - 0.50 Never Tried (NT)

mean of 1.10 "Below Proficient" was given to indicator number 5 "I can trouble shoot local printer problems".

Noticeably, the grand mean of the group posted at 1.65 or "Approaching proficiency" level.

As for the pupils' group, it appeared that of the different skills presented, their level of technology literacy reached only up to approaching proficient. Specifically, there were 20 skills that their level is still at "below proficient" and five skills were at "Approaching Proficiency" level.

In general, the grand mean of the group posted at 1.25 or "Below Proficient".

In summary, the three groups arrived at different levels of technology literacy based on the essential operational skills that is, teachers and school heads had "Approaching proficient" level while pupils were still at "Below Proficient".

The grand mean of the combined assessment of the respondents was 1.68 or "Approaching Proficiency".

Constructing and Demonstrating Knowledge on Communication and Collaboration. Tables 10 and 11 depict levels of technology literacy of the three groups of respondents along constructing and demonstrating knowledge on communication and collaboration.

The school head rated one indicator as "Highly proficient" with a weighted mean of 3.66 (I regularly use a cellular phone for texting and calling). While the least mean of 1.23 which interpreted as "Below level" which says "I have a tablet and I use it for sending messages and for calling".

The grand mean of the group posted at 2.43 or "Approaching Proficiency".

Table 10

Level of Technology Literacy of School Head and Teacher-Respondents Along Constructing and Demonstrating Knowledge on Communication and Collaboration

	Indicators	Respondents' Category				Combined Mean/Inter-pretation	
		SH		Teacher			
		Xw/Inter-pretation		Xw/Inter-pretation			
1.	I regularly use a cellular phone for texting and calling.	3.66	HP	3.36	P	3.51	P
2.	I can use other applications in my cellular phone like camera, video, recorder and audio player.	3.34	P	3.21	P	3.28	P
3.	I can connect social networking sites using my cellular phone.	2.97	P	2.73	P	2.85	P
4.	I can do researches related to my job using my cellular phone.	2.55	P	2.53	P	2.54	AP
5.	I have a tablet and I use it for sending messages and for calling.	1.23	BF	1.56	AP	1.4	BF
6.	I can use other applications in my tablet like camera, video, audio recorder and music player.	1.78	BF	1.9	AP	1.84	AP
7.	I know how to use my tablet to connect on social networking sites and do researches related to my job and studies.	1.77	BF	1.69	AP	1.73	AP
8.	I can assist co – workers on using different applications on the tablet.	1.74	BF	1.58	AP	1.66	AP
9.	I can use a digital camera for taking pictures and recording videos.	2.59	AP	2.47	AP	2.53	AP
10.	I can transfer pictures and videos to my computer.	2.62	AP	2.28	AP	2.45	AP
11.	I can operate a DVD/ VCD Player.	3	P	2.96	P	2.98	P
12.	I use DVD/ VDCD player as a medium of instruction.	2.41	AP	1.76	AP	2.09	AP
13.	I use my netbook/ laptop with projector as a medium of instruction.	2.34	AP	1.49	BF	1.92	AP
14.	I can assists co-workers in using technology for instruction.	2.41	AP	1.81	BF	2.11	AP
15.	I can use technology to monitor progress of my pupils/teachers.	2.1	AP	2.05	AP	2.08	AP
	Grand Total	**36.5**		**33.4**		**34.9**	
	Grand Mean	**2.43**	**AP**	**2.23**	**AP**	**2.33**	**AP**

Legend: 3.51 - 4.00 Highly Proficient (HP)
2.51 - 3.50 Proficient (P)
1.51 - 2.50 Approaching Proficieny (AP)
0.51 - 1.50 Below Proficient (BF)
0.00 - 0.50 Never Tried (NT)

To give focus on the teachers' assessment on the level of technology literacy along constructing and demonstrating knowledge on communication and collaboration, it can be noted that the highest level obtained by the teachers among all indicators were "Approaching Proficiency". The top three indicators were: indicator 1 "I regularly use a cellular phone for texting and calling" having a weighted mean of 3.36, Indicator 2, "I can use other application in my cellular phone like camera, video, recorder, and audio player" with a mean of 3.21, and "I can operate a DVD/VCD player" with a mean of 2.96. Indicator 13 was given least mean of 1.49 which was "I use my netbook/laptop with projector"

In totality, the group posted a grand mean of 2.33 or "Approaching Proficiency".

Giving attention to the assessment of the pupil as to their level of technology literacy in this component, it shows they were still at "Approaching Proficiency" level. Specifically, the behavior with highest mean of 3.09 was Indicator 2, "I can use other application in my cellular phone like camera, video, recorder, and audio player". The least mean of 1.11 was given to which was "I use my netbook/laptop with projector in presenting work and school related activities" The grand mean of the group posted at 1.84 or "Approaching Proficient".

In summary, the three groups arrived at the same level of technology literacy "Approaching Proficiency" based on constructing and demonstrating

knowledge on communication and collaboration. But, numerical disparities were noted among the three groups.

The grand mean of the three groups of respondents was 2.17 interpreted as "approaching proficiency".

Table 11

Level of Technology Literacy Pupil-Respondents Along Constructing and Demonstrating Knowledge on Communication and Collaboration

	Indicators	Xw/Inter-pretation	
1.	I regularly use a cellular phone for texting and calling.	2.81	P
2.	I can use other applications in my cellular phone like camera, video, recorder audio player, calculator, calendar and games.	3.09	P
3.	I can connect social networking sites using my cellular phone.	1.89	AP
4.	I can do researches related to my lessons using my cellular phone.	2.10	AP
5.	I have a tablet and I use it for sending messages and for calling.	1.60	AP
6.	I can use other applications in my tablet like camera, video, audio recorder and music player.	1.89	AP
7.	I know how to use my tablet to connect on social networking sites and do researches related to my lessons and studies.	1.55	AP
8.	I can assist my classmates and friends on using different applications on the tablet.	1.44	BF
9.	I can use a digital camera for taking pictures and recording videos.	1.97	AP
10.	I can transfer pictures and videos to my computer.	1.56	AP
11.	I can operate a DVD/ VCD Player.	2.49	AP
12.	I use DVD/ VDCD player in school activities.	1.38	AP
13.	I use netbook/ laptop in presenting my work/reporting and other school related activities.	1.11	BF
14.	I can assists classmates and friends in using technology in school.	1.61	AP
15.	I can use technology to monitor my progress in school.	1.16	BF
	Grand Total	**27.65**	-
	Grand Mean	**1.84**	**AP**

Legend: 3.51 - 4.00 Highly Proficient (HP)
2.51 - 3.50 Proficient (P)
1.51 - 2.50 Approaching Proficieny (AP)
0.51 - 1.50 Below Proficient (BF)
0.00 - 0.50 Never Tried (NT)

Internet use for independent learning. Table 12 shows the weighted means of the indicators used to determine the level of technology literacy of the three groups of respondents as to internet use for independent learning.

Of the 12 indicator listed under this third component, the school heads considered indicator 1 "I can save/download copies of web pages and graphics on my harddrive, flashdrive and compact disc" having highest mean of 2.48 interpreted as "Approaching Proficiency". The least rated was indicator 5 "I know how to integrate email with other technologies such as voicemail, phone and fax" with a weighted mean of 1.47 interpreted as "Below proficient".

Overall level of technology of the school head-respondents was "Approaching Proficiency" with a weighted mean of 2.03.

On the part of the teachers, ranked first was indicator 1 "I can start up browser to surf the web" at a weighted mean of 2.07 and the least ranked was indicator 5 "I know how to integrate email with other technologies such as voicemail, phone and fax" with a weighted mean of 1.23 interpreted as "Below proficient".

The grand mean was 1.69 interpreted as "Approaching Proficiency".

For the pupil-respondents, they asserted they were most "Approaching proficiency" in indicator 4 "I can upload data like pictures and videos in social networking sites" with a weighted mean of 1.60 and they were least "below proficient" in indicator 11 "I evaluate internet sites for accuracy".

Overall, the pupils admitted that they were "below proficient" as indicated by a grand mean of 1.27.

Table 12

Level of Technology Literacy of School Head, Teacher, and Pupil-Respondents Along Internet Use for Independent Learning

	Indicators	Respondents' Category						Combined Mean/Inter-pretation	
		SH		Teacher		Pupil			
		Xw/Inter-pretation		Xw/Inter-pretation		Xw/Inter-pretation			
1.	I can start up browser to surf the web.	2.47	AP	2.07	AP	1.57	AP	2.04	AP
2.	I can save/download copies of web pages and graphics on my hard drive, flash drive and compact disc.	2.48	AP	2.02	AP	1.37	BF	1.96	AP
3.	I regularly surf the internet for new researches related to my job.	2.43	AP	1.87	AP	1.53	AP	1.94	AP
4.	I regularly use email and know how to use documents as attachments.	1.80	AP	1.54	AP	1.13	BF	1.49	BF
5.	I know how to integrate email with other technologies such as voicemail, phone and fax.	1.47	BF	1.23	BF	1.08	BF	1.26	BF
6.	I regularly use email to send important data such as to submit reports, to disseminate important information to the recipients and for other purposes.	1.90	AP	1.33	BF	1.18	BF	1.47	BF
7.	I can assist my co -workers on surfing the web.	2.13	AP	1.60	AP	1.44	BF	1.72	AP
8.	I can upload data like pictures and videos in social networking sites.	2.30	AP	2.03	AP	1.60	AP	1.98	AP
9.	I regularly use the social networking sites for announcements, sharing of job-related information and other important updates.	1.90	AP	1.59	AP	1.11	BF	1.53	AP
10.	I regularly access information through online resources including encyclopedias, libraries, education and government web-sites and electronic catalogs.	1.97	AP	1.75	AP	1.03	BF	1.58	AP
11.	I evaluate internet sites for accuracy.	1.79	AP	1.57	AP	1.02	BF	1.46	BF
12.	I actively participate on social media to share my views.	1.72	AP	1.62	AP	1.21	BF	1.52	AP
	Grand Total	**24.36**		**20.22**		**15.27**		**20**	
	Grand Mean	**2.03**	**AP**	**1.69**	**AP**	**1.27**	**BF**	**1.66**	**AP**

Legend: 3.51 - 4.00 Highly Proficient (HP)
2.51 - 3.50 Proficient (P)
1.51 - 2.50 Approaching Proficiency (AP)
0.51 - 1.50 Below Proficient (BF)
0.00 - 0.50 Never Tried (NT)

In summary, the three groups of respondents had the different levels of technology as to the internet use for independent learning.

Looking at the combined mean, the grand mean of the three groups of respondents posted at 1.66 being interpreted as "Approaching Proficiency" also.

Ethical, legal and safety issues. The levels of technology literacy of the three groups of respondents as to the ethical, legal and safety issues are presented in Table 13.

The school head-respondents level along ethical, legal and safety issues was "Approaching proficiency" as reflected by a grand mean of 2.36. This value was the result of the assessment of the five indicators obtaining weighted means within the 2.03-2.70 interpretation range. Of the five indicators, indicator 4 "Is aware that technology is in a state of continual change/advancement" obtained the highest mean at 2.70 interpreted as 'Proficient'. The least in weighted mean was indicator 2 at a weighted mean of 2.03 which says "Identify an appropriate procedure to follow when an appropriate content is encountered in a computer". Similarly, the teachers viewed their level of technology as "Approaching proficiency" as revealed by a grand mean of 2.18. Indicator 5 was considered by them as they were "Proficient" which says "Is aware that technology is in a state of continual change/advancement" with weighted mean of 2.59. The least ranked indicator interpreted as "Approaching proficiency" indicator was indicator 3 "display an awareness of potentially inappropriate media use in regards to technology" with a weighted mean rating of 1.97.

Table 13

Level of Technology Literacy of School Head, Teacher, and Pupil-Respondents Along Ethical, Legal and Safety Issues

	Indicators	Respondents' Category						Combined Mean/Inter-pretation	
		SH		Teacher		Pupil			
		Xw/Inter-pretation		Xw/Inter-pretation		Xw/Inter-pretation			
1.	I understand and follow copyright laws pertaining to software and /or internet resources, including duplicating and/or plagiarizing text and media files and use appropriately cite electronic references.	2.33	AP	2.05	AP	1.14	BF	1.84	AP
2.	Identify an appropriate procedure to follow when in appropriate content is encountered in a computer.	2.03	AP	2.04	AP	1.00	BF	1.69	AP
3.	Display an awareness of potentially inappropriate language/ inappropriate media use in regards to technology.	2.17	AP	1.97	AP	1.05	BF	1.73	AP
4.	Is aware that technology is in a state of continual change/ advancement.	2.70	P	2.59	P	1.06	BF	2.12	AP
5.	Identify security risks that are involved when giving out personal information; understand there is no guarantee of privacy in a network and recognize report potential online predators, maintain password security and understand the need for virus scans, firewalls and filters.	2.55	P	2.24	AP	1.13	BF	1.97	AP
	Grand Total	**11.78**		**10.89**		**5.38**		**9.35**	
	Grand Mean	**2.36**	**AP**	**2.18**	**AP**	**1.08**	**BF**	**1.87**	**AP**

Legend: 3.51 - 4.00 Highly Proficient (HP)
2.51 - 3.50 Proficient (P)
1.51 - 2.50 Approaching Proficient (AP)
0.51 - 1.50 Below Proficient (BF)
0.00 - 0.50 Never Tried (NT)

On the other hand, pupils admitted they were "Below proficient" along ethical, legal and safety issues as supported by a grand mean of 1.08. Ranked first in the level of technology was indicator 1 "I understand and

follow copyright laws pertaining to software and/or internet resources, including duplicating and/or plagiarizing text and media files and use appropriately cite electronic references" with a weighted mean of 1.14 and ranked last was indicator 2 "Identify an appropriate procedure to follow when an appropriate content is encountered in a computer" with a weighted mean of 1.00.

In summary, the three groups of respondents arrived at different assessment regarding the ethical, legal and safety issues. They assessed them as "Approaching Proficiency." Taking into consideration the numerical rating each group gave, it could be noted that they differed.

Comparison of the Levels of Technology Literacy Among the Three Groups of Respondents

The results of the statistical tests comparing differences in the levels of technology literacy of the three groups of respondents as regards to essential operational skills, constructing and demonstrating knowledge on communication and collaboration, internet use for independent learning, and ethical, legal and safety issues are presented and discussed in this section using ANOVA and Tukey's test.

Essential operational skills. As to essential operational skills, the differences in the levels of technology literacy of the three categories of respondents are shown in Tables 14.

Table 14

Comparison Among the Levels of Technology Literacy of the Three Groups of Respondents Along Essential Operational Skills

Respondents' Category	n	Mean	SD
School Head	25	2.14	0.47
Teacher	25	1.65	0.38
Pupil	25	1.25	0.26
Total	75	1.68	0.52

ANOVA

Sources of Variation	SS	df	MS	F	p-value	Evaluation
Between Groups	9.82	2	4.91	34.48	3.13E-11	Significant
Within Groups	10.25	72	0.14			
Total	20.07	74				-

Post Hoc Analysis - ***Tukey simultaneous comparison t-values*** ***(d.f. = 72)***

Pair	t-value	tabular t-value (α = 0.05	Evaluation
School Head & Teacher	4.51	2.40	Significant
School Head & Pupil	8.29	2.40	Significant
Teacher & Pupil	3.78	2.40	Significant

The ANOVA table reflects a calculated F-value of 34.48 having p-value of 3.13E-11 which is lesser than the 0.05 significance level in which this result implies that a significant difference exists.

As reflected in same table, the result of the Tukey's test reveals a significant difference in perception between school head and teacher since the computed t- value of 4.51 is very much greater than the 2.40 critical t-value at 0.05 significance level. It meant that the levels of technology of the school heads and teachers were different in terms of their essential operational skills. This meant school head had high levels of technology literacy than teachers.

A significant difference in the levels of technology along essential operational skills existed between school heads and pupils since the obtained t-value of 8.29 was very much greater than the critical t-value of 2.40 at 0.05 significance level. There was a difference between school heads and pupils regarding their levels of technology.

On the same manner, a significant difference existed in perceptions between teachers and pupils along their levels of technology literacy since the obtained t-value of 3.78 was very much greater than the critical t-value of 2.40 at 0.05 significance level.

Constructing and demonstrating knowledge on communication and collaboration. The differences in perceptions of the three categories of respondents as to constructing and demonstrating knowledge on communication and collaboration are presented in Table 15.

Significant differences in perceptions existed among the three categories of respondents as to their levels of technology literacy along constructing and demonstrating knowledge on communication and collaboration since the F ratio calculated of 3.53having p-value of 0.0382 and 0.05 significance level. To determine where the difference existed, Tukey's tests were conducted and results are shown in Table 15.

As revealed by the entries of the table, a computed t-value of 2.62 was obtained which was higher than the critical t-value of 2.43 at significance level of 0.05. This implied significant difference between technology literacy level of the

school heads and pupils. The school heads had high levels of technology literacy than pupils.

Table 15

Comparison Among the Levels of Technology Literacy of the Three Groups of Respondents Along Constructing and Demonstrating Knowledge on Communication Collaboration

Respondents' Category	n	Mean	SD
School Head	15	2.43	0.65
Teacher	15	2.23	0.62
Pupil	15	1.84	0.58
Total	45	2.17	0.65

ANOVA

Sources of Variation	SS	df	MS	F	p-value	Evaluation
Between Groups	2.69	2	1.35	3.53	.0382	Significant
Within Groups	16.00	42	0.38			
Total	18.69	44				-

Post Hoc Analysis - *Tukey simultaneous comparison t-values (d.f. = 42)*

Pair	t-value	tabular t-value (α = 0.05	Evaluation
School Head & Teacher	0.93	2.43	Not Significant
School Head & Pupil	2.62	2.43	Significant
Teacher & Pupil	1.69	2.43	Not Significant

Internet use for independent learning. Table 16 give the results of the ANOVA and Tukey's tests performed between the levels of the three groups of respondents on the NCBTS along internet use for internet use for independent learning.

Table 16

Comparison Among the Levels of Technology Literacy of the Three Groups of Respondents Along Internet Use for Independent Learning

Respondents' Category	n	Mean	SD
School Head	12	2.03	0.33
Teacher	12	1.69	0.27
Pupil	12	1.27	0.22
Total	36	1.66	0.41

ANOVA

Sources of Variation	SS	df	MS	F	p-value	Evaluation
Between Groups	3.45	2	1.73	22.60	6.58E-07	Significant
Within Groups	2.52	33	0.08			
Total	5.97	35				-

Post Hoc Analysis - *Tukey simultaneous comparison t-values (d.f. = 33)*

Pair	t-value	tabular t-value (α = 0.05	Evaluation
School Head & Teacher	3.06	2.46	Significant
School Head & Pupil	6.71	2.46	Significant
Teacher & Pupil	3.66	2.46	Significant

An F ratio of 22.60 was obtained among the three groups of respondents having p-value of 6.58E-07 at 0.05 significance level. This implied a significant difference among the three groups of respondents.

As reflected in same table, the result of the Tukey's test reveals a significant difference in perception between school heads and teachers since the computed t- value of 3.06 is very much greater than the 2.46 critical t-value at 0.05 significance level. It meant that the levels of technology of the school heads and teachers were different in terms of their internet use for independent

learning. This meant school head had high levels of technology literacy than teachers.

A significant difference in the levels of technology along essential operational skills existed between school heads and pupils since the obtained t-value of 6.71 was very much greater than the critical t-value of 2.46 at 0.05 significance level. There was a difference between school heads and pupils regarding their levels of technology.

On the same manner, a significant difference existed in perceptions between teachers and pupils along their levels of technology literacy since the obtained t-value of 3.66 was very much greater than the critical t-value of 2.46 at 0.05 significance level.

Ethical, legal and safety uses. Table 17 give the results of the ANOVA and Tukey's tests performed between the levels of the three groups of respondents on the NCBTS along ethical, legal and safety uses.

An F ratio of 51.19 was obtained among the three groups of respondents having p-value of 1.33E-06 at 0.05 significance level. This implied a significant difference among the three groups of respondents.

As reflected in same table, the result of the Tukey's test reveals a no significant difference in perception between school heads and teachers since the computed t- value of 1.30 is very much greater than the 2.67 critical t-value at 0.05 significance level. It meant that the levels of technology of the school heads

and teachers were the same in terms of ethical, legal and safety issues. This meant school head had the same levels of technology literacy with the teachers.

Table 17

Comparison Among the Levels of Technology Literacy of the Three Groups of Respondents Along Ethical, Legal and Safety Issues

Respondents' Category	N	Mean	SD
School Head	5	2.36	0.27
Teacher	5	2.18	0.25
Pupil	5	1.08	0.06
Total	15	1.87	0.62

ANOVA

Sources of Variation	SS	df	MS	F	p-value	Evaluation
Between Groups	4.81	2	2.40	51.19	1.33E-06	Significant
Within Groups	0.56	12	0.05			
Total	5.37	14				-

Post Hoc Analysis - *Tukey simultaneous comparison t-values (d.f. = 12)*

Pair	t-value	tabular t-value (α = 0.05	Evaluation
School Head & Teacher	1.30	2.67	Not Significant
School Head & Pupil	9.34	2.67	Significant
Teacher & Pupil	8.04	2.67	Significant

A significant difference in the levels of technology along ethical, legal and safety existed between school heads and pupils since the obtained t-value of 9.34 was very much greater than the critical t-value of 2.67 at 0.05 significance level. There was a difference between school heads and pupils regarding their levels of technology.

On the same manner, a significant difference existed in perceptions between teachers and pupils along their levels of technology literacy since the

obtained t-value of 8.04 was very much greater than the critical t-value of 2.67 at 0.05 significance level.

Relationships Between the Level of Technology Literacy of the School Heads and their Profile

The results of the correlational analyses between school heads' profile and their level of technology literacy are presented in Tables 18 with their discussions.

Table 18

Correlation Between the Level of Technology Literacy of the School Head-Respondents and Their Profile

Profile		Technology literacy Components			
		EOS	CDKCC	IUIL	ELSS
Age	r-value	-.310	-.250	-.347	-.098
	Sig. (2-tailed)	.108	.200	.071	.620
Sex	r-value	.007	-.026	.021	.211
	Sig. (2-tailed)	.975	.903	.921	.322
Position	r-value	-.261	-.265	-.276	-.115
	Sig. (2-tailed)	.179	.173	.156	.562
Educational Attainment	r-value	.266	.054	.142	.279
	Sig. (2-tailed)	.171	.785	.470	.151
No. of Years in Administrative Experience	r-value	-.126	-.122	-.362	-.204
	Sig. (2-tailed)	.547	.562	.075	.328
No. of Literacy Training Attended	r-value	.263	.183	.086	.109
	Sig. (2-tailed)	.169	.341	.656	.574

Legend:
EOS - Essential Operational Skills
CDKCC - Constructing Demonstrating Knowledge on Communication & Collaboration
IUIL - Internet Use for Independent Learning
ELSS - Ethical, Legal and Safety Issues

Essential operational skills. Shown in Table 18 are the results of the correlational analysis between school heads' level of technology literacy along essential operational skills and school heads' profile variates.

Inspection of the entries of the table reveals that school heads' profile such as, age, sex, position, educational attainment, number of years in administrative experience, and number of literacy trainings attended were not significantly correlated to their level of technology literacy with regards to their essential operational skills. Thus, schools head profile has nothing to do with the essential operational skills of the school heads.

Constructing and demonstrating knowledge on communication and collaboration. Shown in Table 18 are the results of the correlational analysis between school heads' level of technology literacy along constructing and demonstrating knowledge on communication and collaboration and school heads' profile variates.

Inspection of the entries of the table reveals that school heads' profile such as, age, sex, position, educational attainment, number of years in administrative experience, and number of literacy trainings attended were not significantly correlated to their level of technology literacy with regards to their constructing and demonstrating knowledge on communication and collaboration. Thus, schools head profile has nothing to do with their literacy in terms of constructing and demonstrating knowledge on communication and collaboration of the school heads.

Internet use for independent learning. Shown in Table 18 are the results of the correlational analysis between school heads' level of technology literacy along internet use for independent learning and school heads' profile variates.

Inspection of the entries of the table reveals that school heads' profile such as, age, sex, position, educational attainment, number of years in administrative experience, and number of literacy trainings attended were not significantly correlated to their level of technology literacy with regards to their internet use for independent learning. Thus, school head profile has nothing to do with their literacy in terms of internet use for independent learning.

Ethical, legal and safety issues. Shown in Table 18 are the results of the correlational analysis between school heads' level of technology literacy along ethical, legal and safety issues and school heads' profile variates.

Inspection of the entries of the table reveals that school heads' profile such as, age, sex, position, educational attainment, number of years in administrative experience, and number of literacy trainings attended were not significantly correlated to their level of technology literacy with regards to their internet use for independent learning. Thus, schools head profile has nothing to do with their literacy in terms of internet use for independent learning.

Relationships Between the Level of Technology Literacy of the Teachers and their Profile

The results of the correlational analyses between teachers' profile and their level of technology literacy are presented in Tables 19 with their discussions.

Essential operational skills. Shown in Table 19 are the results of the correlational analysis between teachers' level of technology literacy along essential operational skills and profile variates.

Table 19

Correlation Between the Level of Technology Literacy of the Teacher-Respondents and Their Profile

Profile		Technology literacy Components			
		EOS	CDKCC	IUIL	ELSS
Age	r-value	-.600**	-.519**	-.594**	-.447**
	Sig. (2-tailed)	.000	.000	.000	.000
Sex	r-value	-.166*	-.137*	-.128	-.050
	Sig. (2-tailed)	.018	.050	.068	.478
Designation	r-value	-.316**	-.202**	-.288**	-.166*
	Sig. (2-tailed)	.000	.002	.000	.011
No. Years in Teaching	r-value	-.525**	-.426**	-.500**	-.348**
	Sig. (2-tailed)	.000	.000	.000	.000
No. of Literacy Training Attended	r-value	.359**	.331**	.322**	.237**
	Sig. (2-tailed)	.000	.000	.000	.000
Educational Attainment	r-value	-.016	.027	.009	.027
	Sig. (2-tailed)	.820	.697	.895	.698

Legend:
*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
EOS - Essential Operational Skills
CDKCC - Constructing Demonstrating Knowledge on Communication & Collaboration
IUIL - Internet Use for Independent Learning
ELSS - Ethical, Legal and Safety Issues

Scrutiny of the entries of the table reveals that teachers' educational attainment was not significantly correlated to their level of technology literacy. Teachers' age, sex, designation, number of years in teaching, and number of literacy trainings attended were significantly correlated their level of technology literacy having r-values of -0.600, -0.166, -0.316, -0.525, and 0.359 with p-values of lesser than 0.05 significance level. This result meant further the following: the older the teacher the lower the level of technology; male teacher tend to have high level of technology; as the teacher attained high positions, teachers tend to have low level of technology literacy; teachers tend to have low level of technology literacy when they have lower number of years in teaching, and teachers tend to have high level of technology when they attended more seminars and trainings in ICT literacy.

Constructing and demonstrating knowledge on communication and collaboration. Shown in Table 19 are the results of the correlational analysis between teachers' level of technology literacy along constructing and demonstrating knowledge on communication and collaboration and teachers' profile variates.

Scrutiny of the entries of the table reveals that teachers' educational attainment was not significantly correlated to their level of technology literacy. Teachers' age, sex, designation, number of years in teaching, and number of literacy trainings attended were significantly correlated their level of technology literacy having r-values of -0.519, -0.137, -0.202, -0.426, and 0.331 with p-values of

lesser than 0.05 significance level. This result meant further the following: the older the teacher the lower the level of technology literacy on constructing and demonstrating knowledge on communication and collaboration; male teacher tend to have high level of technology literacy; as the teacher attained high positions, teachers tend to have low level of technology literacy; teachers tend to have low level of technology literacy when they have lower number of years in teaching, and teachers tend to have high level of technology literacy when they attended more seminars and trainings in ICT literacy.

Internet use for independent learning. Shown in Table 19 are the results of the correlational analysis between teachers' level of technology literacy along internet use or independent learning and school heads' profile variates.

Scrutiny of the entries of the table reveals that teachers' educational attainment and sex profile was not significantly correlated to their level of technology literacy. Teachers' age, designation, number of years in teaching, and number of literacy trainings attended were significantly correlated to their level of technology literacy having r-values of -0.594, -0.166, -0.348, and 0.237 with p-values of lesser than 0.05 significance level. This result meant further the following: the older the teacher the lower the level of technology literacy with regards to internet use for independent learning; as the teacher attained high positions, teachers tend to have low level of technology literacy; teachers tend to have low level of technology literacy when they have lower number of years in

teaching, and teachers tend to have high level of technology literacy when they attended more seminars and trainings in ICT literacy.

Ethical, legal and safety issues. Shown in Table 19 are the results of the correlational analysis between teachers' level of technology literacy along ethical, legal and safety issues and school heads' profile variates.

Scrutiny of the entries of the table reveals that teachers' educational attainment and sex was not significantly correlated to their level of technology literacy along ethical, legal and safety issues. Teachers' age, designation, number of years in teaching, and number of literacy trainings attended were significantly correlated their level of technology literacy having r-values of -0.447, -0.166, -0.348, and 0.237 with p-values of lesser than 0.05 significance level. This result meant further the following: the older the teacher the lower the level of technology literacy in relation to ethical, legal and safety issues; as the teacher attained high positions, teachers tend to have low level of technology literacy; teachers tend to have low level of technology literacy when they have lower number of years in teaching, and teachers tend to have high level of technology literacy when they attended more seminars and trainings in ICT literacy.

Relationships Between the Level of Technology Literacy of the Pupils and their Profile

The results of the correlational analyses between pupils' profile and their level of technology literacy are presented in Tables 20 with their discussions.

Essential operational skills. Shown in Table 20 are the results of the correlational analysis between pupils' level of technology literacy along essential operational skills and profile variates.

Table 19 reveals that pupils' sex and father's occupation were not significantly correlated to their level of technology literacy along essential operational skills. Pupils' age, mothers occupation, and average family monthly income were significantly correlated their level of technology literacy having r-values of -0.111, 0.295, and 0.600 with p-values of lesser than 0.05 significance

Table 20

Correlation Between the Level of Technology Literacy of the Pupil-Respondents and Their Profile

Profile		Technology literacy Components			
		EOS	CDKCC	IUIL	ELSS
Age	r-value	-.111*	-.119*	-.128*	-.141**
	Sig. (2-tailed)	.029	.019	.012	.006
Sex	r-vale	-.088	-.052	-.076	-.087
	Sig. (2-tailed)	.083	.312	.134	.087
Mother's Occupation	r-value	.295**	.313**	.304**	.242**
	Sig. (2-tailed)	.000	.000	.000	.000
Father's Occupation	r-value	-.018	.087	.000	-.007
	Sig. (2-tailed)	.746	.121	.999	.896
Average Family Monthly Income	r-value	.600**	.503**	.533**	.431**
	Sig. (2-tailed)	.000	.000	.000	.000

Legend:
*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
EOS - Essential Operational Skills
CDKCC - Constructing Demonstrating Knowledge on Communication & Collaboration
IUIL - Internet Use for Independent Learning
ELSS - Ethical, Legal and Safety Issues

level. This result meant further the following: the older the pupil the lower the level of technology along essential operational skills; mothers who are self employed or having an own business, pupils tend to have high level of technology literacy particularly in the essential operational skills, and parents with high income, pupils tend to have high level in technology along essential operational skills.

Constructing and demonstrating knowledge on communication and collaboration. Shown in Table 20 are the results of the correlational analysis between pupils' level of technology literacy along constructing and demonstrating knowledge on communication and collaboration and pupils' profile variates.

Based on the correlational analysis, pupils' sex profile and father's occupation were not significantly correlated to their level of technology literacy along constructing and demonstrating knowledge on communication and collaboration. Pupils' age, mothers occupation, and average family monthly income were significantly correlated their level of technology literacy having r-values of -0.119, 0.313, and 0.503 with p-values of lesser than 0.05 significance level. This result meant further the following: the older the pupil the lower the level of technology along constructing and demonstrating knowledge on communication and collaboration; mothers who are self employed or having an own business, pupils tend to have high level of technology literacy particularly in the constructing and demonstrating knowledge on communication and

collaboration, and parents with high income, pupils tend to have high level in technology along constructing and demonstrating knowledge on communication and collaboration.

Internet use for independent learning. Shown in Table 20 are the results of the correlational analysis between pupils' level of technology literacy along internet use or independent learning and pupils' profile variates.

Based on the correlational analysis, pupils' sex profile and father's occupation were not significantly correlated to their level of technology literacy along internet use or independent learning. Pupils' age, mothers occupation, and average family monthly income were significantly correlated their level of technology literacy having r-values of -0.141, 0.242, and 0.431 with p-values of lesser than 0.05 significance level. This result meant further the following: the older the pupil the lower the level of technology along internet use or independent learning; mothers who are self-employed or having an own business, pupils tend to have high level of technology literacy particularly in the internet use or independent learning, and parents with high income, pupils tend to have high level in technology along internet use or independent learning.

Ethical, legal and safety issues. Shown in Table 20 are the results of the correlational analysis between pupils' level of technology literacy along ethical, legal and safety issues and pupils' profile variates.

Based on the correlational analysis, pupils' sex profile and father's occupation were not significantly correlated to their level of technology literacy

along ethical, legal and safety issues. Pupils' age, mothers occupation, and average family monthly income were significantly correlated their level of technology literacy having r-values of -0.141, 0.242, and 0.431 with p-values of lesser than 0.05 significance level. This result meant further the following: the older the pupil the lower the level of technology along ethical, legal and safety issues; mothers who are self-employed or having an own business, pupils tend to have high level of technology literacy particularly in the ethical, legal and safety issues, and parents with high income, pupils tend to have high level in technology along ethical, legal and safety issues.

Chapter 5

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter contains the summary of findings, the conclusions derived from the findings and the corresponding recommendations.

Summary of Findings

The study crystallized the following salient findings:

1. Majority of the school heads' age was posted at age bracket of 43 – 45 years old while most of the teachers were belonged to 42-44 years old.

2. School heads and teachers were dominated by female.

3. The modal designation/position of the school heads were principal I while teacher III position for the teachers.

4. Most of the school heads had attained doctoral units while teachers had MA/MS units.

5. The average number of years of administrative experience of the school heads was posted at 8.64 years with standard deviation of 4.40 years. Moreover, teachers had an average number of years in teaching for about 14.72 years with standard deviation of 8.84 years.

6. Majority of the school heads attended for about 1 – 3 ICT literacy training while 43.98 percent of the respondents claimed that they had not yet

attended any literacy training and 41.91 percent of them attended literacy training for 1 – 3 literacy trainings.

7. Most of the pupil had an age of 11-13 years old.

8. Majority of the pupil-respondents had an average family monthly income of Php5,000 and below.

9. Majority of the pupil-respondents parents particularly the fathers were engaged in farming/fishing. On the other hand, the mothers were mostly self-employed/engaged in own business.

10. The School heads, teachers, and pupils' level of technology along essential operational skills were at "Approaching Proficiency".

11. The School heads, teachers, and pupils' level of technology along Constructing and demonstrating knowledge on communication and collaboration were at "Approaching Proficiency".

12. The School heads, teachers, and pupils' level of technology along essential operational skills were at "Approaching Proficiency".

13. The school heads and teachers had the same level of technology literacy along internet use for independent learning with "Approaching Proficiency" level. Meanwhile, pupils were at "below proficient" level of technology literacy along internet use for independent learning.

14. The school heads and teachers had the same level of technology literacy along ethical, legal and safety issues with "Approaching Proficiency"

level. Meanwhile, pupils were at "below proficient" level of technology literacy along ethical, legal and safety issues.

15. Significant differences exist between the levels of technology literacy along essential operational skills among school heads, teachers, and pupils. In particular, school heads had higher level of technology literacy than teachers and pupils and in same manner, teacher had high level of technology literacy than pupils.

16. Significant differences exist between the levels of technology literacy along constructing and demonstrating knowledge on communication and collaboration among school heads, teachers, and pupils. In particular, school heads had higher level pupils.

17. Significant differences exist between the levels of technology literacy along internet use of independent learning among school heads, teachers, and pupils. In particular, school heads had higher level of technology literacy than teachers and pupils and in same manner, teacher had high level of technology literacy than pupils.

18. Significant differences exist between the levels of technology literacy along ethical, legal and safety uses among school heads, teachers, and pupils. In particular, school heads had higher level of technology literacy than pupils and in same manner, teacher had high level of technology literacy than pupils.

19. School heads' profile variates such as age, sex, position, educational attainment, number of years in administrative experience and number of literacy trainings attended were not significantly correlated to their level of technology literacy such as essential operational skills, constructing and demonstrating knowledge on communication and collaboration, internet use for independent learning and ethical, legal and safety issues.

20. Teachers' profile variates such as age, sex, designation, number of years in teaching and number of literacy trainings attended were significantly correlated to their level of technology literacy such as essential operational skills, constructing and demonstrating knowledge on communication and collaboration. Meanwhile, teachers' age designation number of years in teaching and number of literacy training attended were significantly correlated to internet use for independent learning and ethical, legal and safety issues.

21. Pupils' profile variates such as age, mothers' occupation, and average family monthly income were significantly correlated to their level of technology literacy such as essential operational skills, constructing and demonstrating knowledge on communication and collaboration, internet use for independent learning and ethical, legal and safety issues.

22. Considering that the school heads and teachers were generally rated at approaching proficiency on level of technology along three areas as well as significant difference exist among the three groups of respondents, these may serve as basis for designing an operational plan for enhancement.

11. Along constructing and demonstrating knowledge on communication and collaboration, the older the pupil the lower their level of technology literacy; mothers who are self-employed or having an own business, pupils tend to have high level of technology literacy and parents with high income, pupils tend to have high level in technology literacy.

12. Along internet use or independent learning, the older the pupil the lower their level of technology literacy; mothers who are self-employed or having an own business, pupils tend to have high level of technology literacy, and parents with high income, pupils tend to have high level in technology literacy.

13. Along ethical, legal and safety issues, the older the pupil the lower their level of technology; mothers who are self-employed or having an own business, pupils tend to have high level of technology literacy, and parents with high income, pupils tend to have high level in technology literacy.

14. School Heads and teachers need to undergo a training on technology to enhance their competencies to help improve school performance.

Conclusions

On the basis of foregoing findings the study came up with the following conclusions:

1. The School heads and teachers' level of technology literacy were at an impending proficiency along essential operational skills, constructing and

demonstrating knowledge on communication and collaboration, internet use for independent learning and ethical, legal and safety issues. While, pupils were still at below proficient to approaching proficiency.

2. School heads had higher level of technology literacy than teachers and teachers were technology literate than pupils.

3. School heads' profile variates such as age, sex, position, educational attainment, number of years in administrative experience and number of literacy trainings attended has nothing to do with their level of technology literacy such as essential operational skills, constructing and demonstrating knowledge on communication and collaboration, internet use for independent learning and ethical, legal and safety issues.

4. Along essential operational skills, it shows that the older the teacher the lower the level of technology; male teacher tend to have high level of technology; as the teacher attained high positions, teachers tend to have low level of technology literacy; teachers tend to have low level of technology literacy when they have lower number of years in teaching, and teachers tend to have high level of technology when they attended more seminars and trainings in ICT literacy.

5. Along constructing, demonstrating knowledge on communication and collaboration, the older the teacher the lower the level of technology literacy on constructing and demonstrating knowledge on communication and collaboration; male teacher tend to have high level of technology literacy; as the

teacher attained high positions, teachers tend to have low level of technology literacy; teachers tend to have low level of technology literacy when they have lower number of years in teaching, and teachers tend to have high level of technology literacy when they attended more seminars and trainings in ICT literacy.

6. Along internet use for independent learning, the older the teacher the lower the level of technology literacy with regards to internet use for independent learning; as the teacher attained high positions, teachers tend to have low level of technology literacy; teachers tend to have low level of technology literacy when they have lower number of years in teaching, and teachers tend to have high level of technology literacy when they attended more seminars and trainings in ICT literacy.

7. Along ethical, legal and safety issues, the older the teacher the lower the level of technology literacy in relation to ethical, legal and safety issues; as the teacher attained high positions, teachers tend to have low level of technology literacy; teachers tend to have low level of technology literacy when they have lower number of years in teaching, and teachers tend to have high level of technology literacy when they attended more seminars and trainings in ICT literacy.

8. The older the pupil the lower the level of technology along essential operational skills; mothers who are self-employed or having an own business, pupils tend to have high level of technology literacy particularly in the

essential operational skills, and parents with high income, pupils tend to have high level in technology along essential operational skills.

9. Along constructing and demonstrating knowledge on communication and collaboration, the older the pupil the lower their level of technology literacy; mothers who are self-employed or having an own business, pupils tend to have high level of technology literacy and parents with high income, pupils tend to have high level in technology literacy.

10. Along internet use or independent learning, the older the pupil the lower their level of technology literacy; mothers who are self-employed or having an own business, pupils tend to have high level of technology literacy, and parents with high income, pupils tend to have high level in technology literacy.

11. Along ethical, legal and safety issues, the older the pupil the lower their level of technology; mothers who are self-employed or having an own business, pupils tend to have high level of technology literacy, and parents with high income, pupils tend to have high level in technology literacy.

Recommendations

In the light of the findings and conclusions of the study, the researcher recommends the following:

1. Developing School heads and teachers competencies in using Technology by providing Technology Literacy Trainings as well as multi-media on classroom instruction.

2. Teachers who are not computer literate or non-computer users should undertake computer trainings so that they could acquire sufficient knowledge/skills necessary for them to become efficient users of computers as tools in classroom instruction.

3. To improve students' level of technology literacy, desirable change in teachers' classroom practices is imperative to achieve the desired competency level of the learners and address issues of concern recognized by the teachers themselves.

4. Provision of physical infrastructure and necessary technical support to make ICT accessible and useful to students, teachers, administrators and school support staff.

5. Policy makers and educational planners should formulate realistic policies and plans toward a more widespread and efficient computer use in instruction in various higher and basic education institutions.

6. A similar study maybe conducted in the Second Congress District of Samar so that a general development program can be enhanced to train school heads and perspective school heads.

7. Monitoring and evaluation on the implementation of Project Technology Literacy.

Chapter 6

A PROPOSED RETRAINING PROGRAM FOR PUBLIC ELEMENTARY SCHOOL HEADS AND TEACHERS

This chapter presents the proposed retraining program for public elementary school heads, teachers and pupils of public elementary schools in the division of Samar based on the findings and recommendations of the study.

Rationale

On going learning and self development of school heads and teachers are critical to carry out the mission of any organization more so now than in education. In order to be successful, schools must provide effective professional development training for school heads and teachers.

The objective of this proposal is to serve as a working paper for the training program for public elementary school heads, teachers, and pupils in the Division of Samar. School Heads serves as a driver in the operation of the school, thus, he/she needs to be technology literate to be able to manage well or to do smoothly all responsibilities and daily tasks in school he/she is serving.

Further, the teachers now should be technology literate than their pupils. In order to motivate the pupils to learn they must provide varied activities using multimedia in order that the pupils will be able to use different senses. Moreover, pupils of today's generation likes a classroom that is addressing their

needs or their interest on technology, so teachers must be able to provide that certain needs of the learners.

Objectives

Based on the needs of the respondents, the operational plan seeks to help the school heads, teachers, and pupils develop and exercise along essential operational skills, constructing and demonstrating knowledge on communication and collaboration and literacy along internet for independent learning.

At the end of the three-day training, school heads, teachers and students shall able to:

1. Make 100% of school heads, teachers, and pupils technology literate.

2. Strengthen teacher's and pupil's technology literacy for the improvement of the teaching and learning process.

Training Program Content

Based on the objectives of the training program, the training must focus on technology literacy for both the public elementary school heads and classroom teachers in the Division of Samar.

Training requirement. The public elementary school heads in the Division of Samar and the School Learning Resource Center Coordinators of

every school shall attend the Technology Literacy Training to enhance proficiency in technology for school related tasks.

Strategy of Implementation

A. Pre- Implementation Activities

The researcher shall submit copy of the study to Division of Samar Curriculum Implementation Division for them to use a guide in planning.

B. Delivery Mechanism

The Curriculum Implementation Division (CID) shall choose Division Training Team who will manage the implementation of the Project. A Division Memorandum shall be fielded to ensure that everyone concern will be notified. To ensure that the training will produce good result, the training must be conducted in three consecutive days at Redaja Hall of the division office with the supervision of the curriculum implementation division chief. For its delivery mechanism, hands on, group dynamics and other methodologies will stimulate the participants to see the relationships and effects on them. Furthermore please see the project design and project matrix. In the type of group-related or individual activities, inviting a resource person or professional on ICT who has expertise and experience on the subject matter can be made to enrich the session. As culminating and enrichment activities, a visit to computer laboratory school can be arranged and organized to reinforce and supplement learning.

Monitoring and Evaluation

To ensure the effectiveness of the Project Technology Literacy, it is but proper for the Curriculum Implementation Division Project Team to monitor the implementation of the program in the field.

A monitoring tool should be used by the selected Monitoring and Evaluation Team to be used in every visit to all schools.

Further, every school head must also monitor and evaluate the implementation of the project by every classroom teacher.

Republic of the Philippines
Department of Education
Region VIII
DIVISION OF SAMAR
Villareal

PROJECT DESIGN and BUDGET MATRIX

PROJECT TITLE : Project Technology Literacy

PROBLEM STATEMENT : School Heads and teachers are below proficient in Technology Literacy

OBJECTIVE STATEMENT: To zero out below proficient school heads on technology Literacy

ROOT CAUSE/S : Insufficient fund for technology literacy implementation

Activity/s	Output	Date	Persons Responsible	Budget	Budget Source
1. Submit copy of the research to DEpEd Samar CID	Determined the list of the target school heads for technology literacy training	June 2016	Researcher	-	-
2. Request for a planning conference with the CID Samar Division	Minutes of the conference	June 2016	CID	2,000.00	MOOE
3. Present the crafted training matrix and session guide for further suggestions and improvement		June 2016	CID	1,000	MOOE
4. Selection of Division trainers	Division Memorandum	July 2016	CID		
5. Planning Conference for the Project TechLit Core Team and Trainers		July 2016	CID		
6. Selection of Training Sponsors		July 2016	CID		
7. Send communication to selected training sponsors	Formal letter request for sponsors	July 2016	CID	1,000	

Activity/s	Output	Date	Persons Responsible	Budget	Budget Source
8. Send communication to school heads for a 3-Day Division Technology Literacy Training Workshop	Division Memorandum	August 2016	CID		
9. Division 3-Day Technology literacy Workshop for school heads	Attendance sheet Pictures	Sept. 2016	Division training team	1,500/ pax	MOOE
10. Division Technology Literacy Workshop for Teachers	Certificate of Participation Certificate of Appearance	Sept-Oct 2016	Division training team		
11. District Technology literacy Training Workshop for School ICT Coordinators		Oct 2016	District Training Team		
12. School Learning Action Cell for Technology Literacy of Teachers			School Training Team		
13. Teachers use multimedia for instructional aids in teaching					
14. Monitoring of and reporting of the implementation of the project	Program is periodically monitored and assessed by the school management and the Division Monitoring Team for Project TechLit	M & E Team			
15. Evaluation of the Technology Literacy Project in the Public Elementary Schools in the Division of Samar	Division Monitoring and Evaluation Team report				
16. Planning Conference for improvement of the project	Minutes of the conference				

MATRIX FOR DIVISION TECHNOLOGY LITERACY
TRAINING WORKSHOP
August 2016

Date/Time	**Activities**	**Person responsible**
Day 1: August _, 2016		
8:00-9:00 AM	Registration of Participants	Registration Committee
9:00- 10:00 AM	Opening Program	Program Committee
10:00- 11:40 AM	Session 1: A. Expectation Setting B. Election of Conference Officials C. Setting of House Rules	Session 1 Trainer
12:00- 1:30 PM	Lunch Break	
1:30- 3:00 PM	Session 2: Basic Computer Skills	Session 2 Trainer
3:00- 5:00 PM	Session 3: Operating Microsoft Excel and Microsoft Powerpoint	Session 3 Trainer
Day 2		
8:00-9:00 AM	Session 4: Using Printer, Scanner and basic trouble shooting	Session 4 Trainer
9:00- 10:00 AM	Session 5: Photography	Session 5 Trainer
10:00- 11:40 AM	Session 6: Making video clips	Session 6 Trainer
12:00- 1:30 PM	Lunch Break	
1:30- 3:00 PM	Session 7: Writing folktales and using Photo shop for presenting the stories	Session 7 Trainer
3:00- 5:00	Session 8:Presentation of Outputs using Multi Media Presentation	Session 8 Trainer

Date/Time	**Activities**	**Person responsible**
Day 3 August _, 2016		
8:00-8:30 AM	Management of Learning	Program Committee
8:30- 10:00 AM	Session 9: Localizing Curriculum Contribute local materials to LRMDS DEPED SAMAR PORTAL	Session 9 Trainer
10:00- 11:40 AM	Session 10: Update EBEIS and LIS On DEPED Website	Session 10 Trainer
12:00- 1:30 PM	Lunch Break	
1:30- 2:30 PM	Session 11: Crafting of School Technology Literacy Plan	Session 11 Trainer
2:30- 3:30 PM	Session 12: Clearing House of Ideas	Session 12Trainer
3:30- 5:00 PM	Closing Program	Training Team

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APPENDICES

Samar State University
GRADUATE SCHOOL
Catbalogan City

Survey Questionnaire
(For School Heads)

Part I. School Head's Profile

Direction: Please check the parentheses that best represent your answer.

Name: (Optional) _____

1.1 Age _____

1.2 Sex( ) Male ( ) Female

1.3 Designation/Position

( ) Teacher in Charge with Special Order from the Division
( ) Head Teacher I ( ) Head Teacher II ( ) Head Teacher III
( ) Principal I ( ) Principal II ( ) Principal III

1.4 Family income

( ) 21,000.00 - 30,0000.00 ( ) 31,000.00 - 40,000.00

( ) 41,000.00 - 50,000.00 ( ) 51,000.00 and above

1.5 Highest Educational Attainment (Please indicate area of specialization/major field)

( ) with MA units _____ ( ) MA CAR_____
( ) MA with Ph. D units _____ ( ) Ph. D./Ed.D _____
( ) Ph. D./ DD CAR_____Others (Please specify) _____

1.6 No. Of years as school head_____

1.7 How many times have you attended a technology literacy trainings?
( ) 0 or none yet ( ) 1-3 ( ) 4 and above

Part II. Level of Technology Literacy

Direction: Check the number that corresponds to your evaluation of your own Technology Literacy as school head. The ratings have the following meanings:

4- Highly Proficient
3- Proficient
2- Approaching Proficiency
1- Below Proficient
0- Never tried

Technology Literacy Skills	Ratings				
	4	3	2	1	0
A. Essential Operational Skills					
1. I know how to use the computer for encoding my reports and other school data.					
2. I can copy and paste documents from different applications					
3. I know how to check computer, monitor and wall outlet for power connections.					
4. I can install new hardware such as modem, network card and speakers and I can use a printer and scanner.					
5. I can trouble shoot local printer problems					
6. I can adjust the appearance of desktop and create shortcuts; Re-name Icons and identify different kinds of icons.					
7. Can apply font, change font size and use features bold or underline.					
8. I regularly use spell checker.					
9. Can set margins and page properties.					
10. Can insert page breaks, create columns, create headers and footers and add automatic page numbers.					
11. Can format a flier and use page lay- out programs.					
12. Can make a power point presentation for use for instruction.					
13. Can add multi-media effects like animations, videos and sounds on the powerpoint presentation.					
14. Can create a simple spreadsheet (i.e. excel) to make a simple graph or chart and know how to add labels.					
15. I can change the format of the spreadsheets to anything I need or want.					
16. Can open create and place pictures into documents using painting, drawing or image editing programs					
17. I regularly update and use a virus checker and know when it is time to call a technology specialist.					
18. I can trouble shoot a network printer problem; understand what a print pool does and how to manage it. I can install a print driver.					

Technology Literacy Skills	Ratings				
	4	3	2	1	0
19. I know how to back up data and have a systematic plan in place to back up files regularly.					
20. I know how to print a file.					
21. I know how to use a scanner.					
22. I can troubleshoot basic things before contracting the technology specialist.					
23. I can create and draw graphics using software such as Photoshop or illustrator and I know when to use which type of program.					
24. Can edit image within software using cropping, resizing and rotating.					
25. I can make video clips use for instruction.					
B. Constructing and Demonstrating Knowledge on Communication and Collaboration					
1. I regularly use a cellular phone for texting and calling most especially to communicate fellow workers for school related tasks.					
2. I can use other applications in my cellular phone like camera, video, recorder and audio player.					
3. I can connect social networking sites using my cellular phone.					
4. I can do researches related to my job using my cellular phone.					
5. I have a tablet and I use it for sending messages and for calling.					
6. I can use other applications in my tablet like camera, video, audio recorder and music player.					
7. I know how to use my tablet to connect on social networking sites and do researches related to my job and studies.					
8. I can assist co - workers on using different applications on the tablet.					
9. I can use a digital camera for taking pictures and recording videos					
10. I can transfer pictures and videos to my computer					
11. I can operate a DVD/ VCD Player					
12. I use DVD/ VDCD player as a medium of instruction					
13. I use my netbook/ laptop with projector as a medium of instruction					
14. I can assists co-workers in using technology for instruction					
15. I can use technology to monitor progress of my subordinates					

Technology Literacy Skills	4	3	2	1	0
C. Internet Use for Independent Learning					
1. I can start up browser to surf the web					
2. I can save/download copies of web pages and graphics on my harddrive, flashdrive and compact disc.					
3. I regularly surf the internet for new researches related to my job					
4. I regularly use email and know how to use documents as attachments.					
5. I know how to integrate email with other technologies such as voicemail, phone and fax.					
6. I regularly use email to send important data such as to submit reports, to disseminate important information to the recipients and for other purposes.					
7. I can assist my co -workers on surfing the web.					
8. I can upload data like pictures and videos in social networking sites.					
9. I regularly use the social networking sites for announcements, sharing of job-related information and other important updates.					
10. I regularly access information through online resources including encyclopedias, libraries, education and government web-sites and electronic catalogs.					
11. I evaluate internet sites for accuracy.					
12. I actively participate on social media to share my views.					
D. Ethical. Legal and Safety Issues					
1. I understand and follow copyright laws pertaining to software and /or internet resources, including duplicating and/or plagiarizing text and media files and use appropriately cite electronic references					
2. Identify an appropriate procedure to follow when in appropriate content is encountered in a computer					
3. Display an awareness of potentially inappropriate language/ inappropriate media use in regards to technology and					
4. Is aware that technology is in a state of continual change/ advancement.					
5. Identify security risks that are involved when giving out personal information; understand there is no guarantee of privacy in a network and recognize report potential online predators, maintain password security and understand the need for virus scans, firewalls and filters.					

Thank you so much for completing the questionnaire. Godspeed.

MARICEL OCANA-BARDELAS
Researcher

Samar State University
GRADUATE SCHOOL
Catbalogan City

Survey Questionnaire
(For Teachers)

Part I. Teacher's Profile

Direction: Please check the parentheses that best represent your answer.

Name: (Optional) _____

1.1 Age _____

1.2 Sex ( ) Male ( ) Female

1.3 Designation/Position
( ) Teacher 1 ( ) Teacher II ( ) Teacher III
( ) Master Teacher I ( ) Master Teacher II

1.5 Highest Educational Attainment (Please indicate your major/ area of specialization)
( ) with MA units _____ ( ) MA CAR_____
( ) MA with Ph. D units_____ ( ) Ph. D./DD_____
( ) Ph. D./ DD CAR_____ Others (Please specify) _____

1.6 No. Of years in teaching_____

1.7 Grade Level Handled_____

1.8 Subjects taught_____

1.9 How many times have you attended a Technology Literacy trainings?_____

Part II. Level of Technology Literacy

Direction: Check the number that corresponds to your evaluation on technology literacy of yourself as a teacher. The ratings have the following meanings:

4- Highly Proficient
3- Proficient
2- Approaching Proficiency
1- Below Proficient
0- Never tried

Technology Literacy Skills	Ratings				
	4	3	2	1	0
A. Essential Operational Skills					
1. I know how to use the computer for encoding my reports and pupils records and some school related tasks.					
2. I can copy and paste documents from different applications.					
3. I know how to check computer, monitor and wall outlet for power connections and I can trouble shoot basic things before contracting the technology specialist.					
4. I can install new hardware such as modem, network card and speakers and I can use a printer and scanner.					
5. I can trouble shoot local printer problems.					
6. I can adjust the appearance of desktop and create shortcuts; Re-name Icons and identify different kinds of icons.					
7. Can apply font, change font size and use features bold or underline.					
8. I regularly use spell checker.					
9. Can set margins and page properties.					
10. Can insert page breaks, create columns, create headers and footers and add automatic page numbers.					
11. Can format a flier and use page lay- out programs.					
12. Can make a power point presentation.					
13. Can add multi- media effects like animations, videos and sounds on the powerpoint presentation that I use as a medium of instruction.					
14. Can create a simple spreadsheet (i.e. excel) to make a simple graph or chart and know how to add labels					
15. I can change the format of the spreadsheets to anything I need or want.					
16. Can open create and place pictures into documents using painting, drawing or image editing programs					
17. I regularly update and use a virus checker and know when it is time to call a technology specialist.					
18. I can trouble shoot a network printer problem; understand what a print pool does and how to manage it. I can install a print driver.					

Technology Literacy Skills	Ratings				
	4	3	2	1	0
19. I know how to back up data and have a systematic plan in place to back up files regularly					
20. I know how to print a file.					
21. I know how to use a scanner.					
22. I can troubleshoot basic things before contracting the technology specialist.					
23. I can create and draw graphics using software such as Photoshop or illustrator and I know when to use which type of program.					
24. Can edit image within software using cropping, resizing and rotating					
25. I can make video clips that is use for instruction.					
B. Constructing and Demonstrating Knowledge on Communication and Collaboration					
1. I regularly use a cellular phone for texting and calling.					
2. I can use other applications in my cellular phone like camera, video, recorder and audio player.					
3. I can connect social networking sites using my cellular phone.					
4. I can do researches related to my job using my cellular phone.					
5. I have a tablet and I use it for sending messages and for calling.					
6. I can use other applications in my tablet like camera, video, audio recorder and music player.					
7. I know how to use my tablet to connect on social networking sites and do researches related to my job and studies.					
8. I can assist co - workers on using different applications on the tablet.					
9. I can use a digital camera for taking pictures and recording videos.					
10. I can transfer pictures and videos to my computer.					
11. I can operate a DVD/ VCD Player.					
12. I use DVD/ VDCD player as a medium of instruction.					
13. I use my netbook/ laptop with projector as a medium of instruction.					

14. I can assists co-workers in using technology for instruction.					
15. I can use technology to monitor progress of my pupils.					

C. Internet Use for Independent Learning	**4**	**3**	**2**	**1**	**0**
1. I can start up browser to surf the web.					
2. I can save/download copies of web pages and graphics on my harddrive, flashdrive and compact disc.					
3. I regularly surf the internet for new researches related to my job.					
4. I regularly use email and know how to use documents as attachments.					
5. I know how to integrate email with other technologies such as voicemail, phone and fax.					
6. I regularly use email to send important data such as to submit reports, to disseminate important information to the recipients and for other purposes.					
7. I can assist my co -workers on surfing the web.					
8. I can upload data like pictures and videos in social networking sites.					
9. I regularly use the social networking sites for announcements, sharing of job-related information and other important updates.					
10. I regularly access information through online resources including encyclopedias, libraries, education and government web-sites and electronic catalogs.					
11. I evaluate internet sites for accuracy.					
12. I actively participate on social media to share my views.					

D. Ethical. Legal and Safety Issues	4	3	2	1	0
1. I understand and follow copyright laws pertaining to software and /or internet resources, including duplicating and/or plagiarizing text and media files and use appropriately cite electronic references.					
2. Identify an appropriate procedure to follow when in appropriate content is encountered in a computer.					
3. Display an awareness of potentially inappropriate					

	language/ inappropriate media use in regards to technology.					
4.	Is aware that technology is in a state of continual change/ advancement.					
5.	Identify security risks that are involved when giving out personal information; understand there is no guarantee of privacy in a network and recognize report potential online predators, maintain password security and understand the need for virus scans, firewalls and filters.					

Thank you for completing the questionnaire. Godspeed.

MARICEL OCANA-BARDELAS
Researcher

Samar State University
GRADUATE SCHOOL
Catbalogan City

Survey Questionnaire
(For Grade Six Pupils)

Part I. Pupil's Profile

Direction: Please check the parentheses that best represent your answer.

Name: (Optional) _____

1.1 Age ( ) 10 years ( )11-13 ( ) 14 and above

1.2 Sex ( ) Male ( ) Female

1.3 Parents Occupation

Father:

( ) Farming/ Fishing
( ) Government service like public teacher, soldier, policeman, fireman, etc.
( ) Employed in Private company \private employer(ex. Driver, guard)
( ) OFW- Overseas foreign worker
( ) Self-employed/ engaged in own business

Mother:

( ) Farming/ Fishing
( ) Self employed/ engaged in own business
( ) Government service like public teacher, soldier, policeman, fireman, etc.
( ) Employed in Private company \with private employer
( ) OFW- Overseas foreign worker
( ) Housewife

1.4 Family monthly income(Please add the monthly income of your mother and father). Check the bracket that represents your answer.

( ) 5,000.00 -5999 ( ) 6,000.00 - 10,999.00
( ) 11,000.00 - 15,999.00 ( ) 16,000.00 – 20,999.00
( ) 21,000.00 - 25,999.00 ( ) 26,000.00 - 30,999

Part II. Level of Technology Literacy

Direction: Check the number that corresponds to your evaluation of yourself as a pupil. The ratings have the following meanings:

4- Highly Proficient
3- Proficient
2- Approaching Proficiency
1- Below Proficient
0 - Never tried

Technology Literacy Skills	Ratings				
	4	3	2	1	0
A. Essential Operational Skills					
1. I know how to use the computer for encoding and do homework and other purposes.					
2. I can copy and paste documents from different applications.					
3. I know how to check computer, monitor and wall outlet for power connections.					
4. I can install new hardware such as modem, network card and speakers and I can use a printer and scanner.					
5. I can trouble shoot local printer problems.					
6. I can adjust the appearance of desktop and create shortcuts; Re-name Icons and identify different kinds of icons.					
7. Can apply font, change font size and use features bold or underline.					
8. I regularly use spell checker.					
9. Can set margins and page properties.					
10. Can insert page breaks, create columns, create headers and footers and add automatic page numbers.					
11. Can format a flier and use page lay- out programs.					
12. Can make a power point presentation.					
13. Can add multi- media effects like animations, videos and sounds on the powerpoint presentation for my reports and school tasks.					
14. Can create a simple spreadsheet (i.e. excel) to make a simple graph or chart and know how to add labels.					
15. I can change the format of the spreadsheets to					

anything I need or want.					
16. Can open create and place pictures into documents using painting, drawing or image editing programs.					
17. I regularly update and use a virus checker and know when it is time to call a technology specialist.					
18. I can trouble shoot a network printer problem; understand what a print pool does and how to manage it. I can install a print driver.					
19. I know how to back up data and have a systematic plan in place to back up files regularly.					
20. I know how to print a file.					
21. I know how to use a scanner.					
22. I can troubleshoot basic things before contracting the technology specialist.					
23. I can create and draw graphics using software such as Photoshop or illustrator and I know when to use which type of program.					
24. Can edit image within software using cropping, resizing and rotating.					
25. I can make video clips.					

B. Constructing and Demonstrating Knowledge on Communication and Collaboration	**4**	**3**	**2**	**1**	**0**
1. I regularly use a cellular phone for texting and calling.					
2. I can use other applications in my cellular phone like camera, video, recorder audio player, calculator, calendar and games.					
3. I can connect social networking sites using my cellular phone.					
4. I can do researches related to my lessons using my cellular phone.					
5. I have a tablet and I use it for sending messages and for calling.					
6. I can use other applications in my tablet like camera, video, audio recorder and music player.					
7. I know how to use my tablet to connect on social networking sites and do researches related to my					

lessons and studies.					
8. I can assist my classmates and friends on using different applications on the tablet.					
9. I can use a digital camera for taking pictures and recording videos.					
10. I can transfer pictures and videos to my computer.					
11. I can operate a DVD/ VCD Player.					
12. I use DVD/ VDCD player in school activities.					
13. I use netbook/ laptop in presenting my work/reporting and other school related activities.					
14. I can assists classmates and friends in using technology in school.					
15. I can use technology to monitor my progress in school.					

C. Internet Use for Independent Learning	**4**	**3**	**2**	**1**	**0**
1. I can start up browser to surf the web.					
2. I can save/download copies of web pages and graphics on my harddrive, flashdrive and compact disc.					
3. I regularly surf the internet for new researches related to our lessons.					
4. I regularly use email and know how to use documents as attachments.					
5. I know how to integrate email with other technologies such as voicemail, phone and fax.					
6. I regularly use email to send important data such as to submit reports, to disseminate important information, to keep in contact with friends and relatives and for other important purposes.					
7. I can assists my classmates and friends on surfing the web.					
8. I can upload data like pictures and videos in social networking sites.					
9. I regularly use the social networking sites for announcements, sharing of school-related information and other important updates.					
10. I regularly access information through online resources including encyclopedias, libraries, education and government web-sites and electronic catalogs to gather information.					

11. I evaluate internet sites for accuracy.					
12. I actively participate on social media to share my views.					

D. Ethical. Legal and Safety Issues	4	3	2	1	0
1. I understand and follow copyright laws pertaining to software and /or internet resources, including duplicating and/or plagiarizing text and media files and use appropriately cite electronic references.					
2. Identify an appropriate procedure to follow when in appropriate content is encountered in a computer.					
3. Display an awareness of potentially inappropriate language/ inappropriate media use in regards to technology.					
4. Is aware that technology is in a state of continual change/ advancement.					
5. Identify security risks that are involved when giving out personal information; understand there is no guarantee of privacy in a network and recognize report potential online predators, maintain password security and understand the need for virus scans, firewalls and filters.					

Thank you for completing the questionnaire. Godspeed.

MARICEL OCANA-BARDELAS
Researcher

CURRICULUM VITAE

CURRICULUM VITAE

Name	:	MARICEL OCANA- BARDELAS
Age	:	37 years old
Sex	:	Female
Date of Birth	:	October 14, 1978
Citizenship	:	Filipino
Religion	:	Catholic
Home Address	:	Brgy. Igot, Villareal W. Samar
Eligibility	:	LET

EDUCATION

Graduate Studies	:	Master of Arts in Instruction and Supervision Major in Communication Arts Eastern Visayas State University Tacloban City 1999-2003
Undergraduate Studies	:	Bachelor of Science in Elementary Education Leyte Normal University, Tacloban City 1995-1999
Secondary Education	:	The Sisters of Mary School J. P. Rizal St. Talisay, Cebu 1991-1995
Elementary Education	:	Igot Elementary School Igot, Villareal, Samar 1986-1991

POSITION HELD (SCHOOL DESIGNATION/ORGANIZATIONS)

Elementary School Principal II
Nagcaduha ES/Conant ES/ Macopa ES
May 25, 2015- Present

Elementary School Principal I
Nagcaduha ES/Lam-awan ES/Conant ES/ Macopa ES/ Tomabe ES
September 5, 2011- May 24, 2015

Elementary School Principal I
San Rafael ES/ Malonoy PS/ San Fernando PS
January 3, 2011- September 4, 2012

Head Teacher III
San Rafael ES/ Canmucat PS/ Canmucat EXT. / Macopa PS
February 24, 2009- January 2, 2011

Teacher III
Grade V Adviser- Igot Elementary School
September 19, 2005- February 23, 2009

Teacher I
Grade V Adviser- Igot Elementary School
October 16, 2000- September 18, 2005

Substitute
Grade II Class- Igot Elementary School
July 19, 2000- September 20, 2000

TRAININGS/SEMINARS ATTENDED

Orientation Training-Workshop on Early Language, Literacy and Numeracy Program
Jardin de Elena, San Andres, Catbalogan City
Feb. 6-15, 2016

Training Writeshop for Writers and Illustrators of Project Lantawan
Redaja Hall, Catbalogan City
January 27-29, 2016

Division Roll Out on Enahnced School Improvement Plan (E-SIP)
Division Trainer for 6 Batches
Nov. 9-12, 2015 (Batch I) up to Dec. 2-4, 2015 (Batch 6)
Villa Josefa Function Hall, Ubanon, Catbalogan City

Division Orientation for SBM Grant 2014
Fame Hotel, Munoz, Catb. City
Nov. 17-18, 2015

Basic Training Course for Leaders of Adults
Resource Speaker/ Trainer
Villareal I CES, Villareal, Samar
October 16-18, 2015

Course for Managers of Learning (CML)
BSP Camp, Capitol Hills, Cebu City
September 7-12, 2015

Enhanced SIP Training for Trainers
RELC-NEAP DepEd RO-VIII, Candahug, Palo, Leyte
Aug. 18-20, 2015

Basic Training Course for Unit Leaders
Resource Speaker/Trainer
Talalora CES, Talalora, Samar
May 11-14, 2015

Training of Headstart and Inclusive Education
Jardin de Elena, San Andres, Catbalogan City
February 19-21, 2015

Division Training on Child Protection
Redaha hall, Catbalogan City
December 1-3, 2015

Text2teach Process Training for School Recipients
By: Ayala Foundation
Casa Cristina, Catbalogan City

Phil. Scouting Centennial Jamboree
BSP Camp, Capitol Hills, Cebu City
November 7-12, 2014

School Based Feeding Program by DSWD
Tacloban City
October 17-18, 2014

Division Training Workshop on the New SIP Process and Tools
Catbalogan City
September 15-17,2013

Division Training of Trainers on the 2nd Phase Implementation of the Training and Development (T&D) Systems
Redaha Hall, Catbalogan City
Aug. 13-15, 2013

Advance Training Course for Leaders of Adults
Samar Island Natural Park, Tenane, Paranas, Samar
January 7-12, 2013

Basic Training Course for Leaders of Adults
Haven of Fun Beach Resort, San Antonio, Northern Samar
September 11-13, 2012

Division Training for Administration on MTBMLE
Jardin de Elena, San Andres, Catb. City
June 14-15, 2012

K to 12 Basic Education Curriculum
San Fernando ES, Tacloban City
May 8-12, 2012

International Seminar on Mathematics and Science Education
Southeast Asian Institute of Educational Training
Leyte National High School, Tacloban City
March 16-18, 2012

National Seminar on Mother Tongue- Based Multi-Lingual Education
Leyte Normal University,
Tacloban City
August 26-28, 2011

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