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UTILIZATION OF ELECTRONIC FORMS AND RECORDS AND TEACHERS' PRODUCTIVITY

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ABSTRACT

This descriptive – the extent of correlational study determined the extent of utilization of electronic forms and records of the teachers in the District of Lambunao West, Schools Division of Iloilo for the School Year 2016-2017. The one hundred fifty-seven (157) randomly selected teachers who are teaching from Grades I to VI which are all permanently employed excluding the teachers teaching SPED and Kindergarten were the participants of the study. The duly-validated researcher-made instrument was used to gather data. The descriptive statistics used were frequency, percentage, standard deviation, and mean while the inferential statistics used were the Kruskal-Wallis Test, Mann-Whitney Test and Spearman rho. Significance level was set at .05 alpha. All data were computer processed using the Statistical Package for the Social Services (SPSS) software. The finding revealed that generally, as an entire group and regardless of age, civil status and educational attainment the extent of teachers' utilization of electronic forms and records was high. As an entire group and regardless of age, civil status and educational attainment, the level of teachers' productivity was very satisfactory. A significant different was noted in the extent of teachers' utilization of electronic forms and records and their level of productivity. There were also significant differences noted when the teachers' utilization of electronic forms and records were categorized as to age, civil status and educational attainment.

Keywords: *Utilization, Electronic Forms, Productivity*

1. Introduction

For some decades now, electronic digital computers have emerged as an imposing force in society, reshaping various branches of endeavors, including Natural Science and Mathematics, Social Science, Commerce, the Arts and Humanities. The automation of people has subtly altered their daily behavior and has created unique opportunities to stretch human knowledge and creativity (Larupay, 2005).

Today, the need for computers is highly pronounced. They are part of people's everyday lives. In business, they are used for payroll, preparation, accounting, bill handling, record preparing and other clerical work. Computers are used in designing aircraft and missile system, nuclear reactors and other complex devices. They are used in developing the best design for space satellites, orbiting vehicles, and space suits. In the field of medicine, computers are also becoming increasingly important. They could provide a nationwide file containing the symptoms and recommend treatment virtually known diseases (Larupay, 2005).

Information Communication Technology (ICT) has an impact on nearly every aspect of human life from working to socializing, learning to playing, from mass production to agriculture. The digital age

has proliferated uncontrollably that even toddlers nowadays know how to manipulate gadgets on their own. This major change has brought a lot of advantages and disadvantages on our daily existence (DepEd Order No. 42, s. 2016).

It became easy to communicate with people across the globe, daily chores become convenient, learning becomes more effective with a lot of illustrations and vivid examples. Most importantly, technology can increase production of output. And on many instances work will be lessened for files can be saved and reproduced in the future.

ICTs are basically information handling tools that are used to produce, store, process, distribute, and exchange information (Anderson 2010). ICT integration in the field of education involves all activities and processes with the use of technology that will help promote learning and enhance the abilities and skills of both pupils and teachers. Thus, the Department of Education encourages and imposes the use of technology in the different forms and records required from the teachers. Using computers is imperative. One of the reasons of this is the different natural calamities that bombarded the country wherein in many instances important school forms and records are destroyed. Another reason is to cope with the global trend in modernization that almost all sectors in the world uses computerized output. In addition, the use of computers can speed up the preparation of daily lesson plans, class register, daily attendance, class records, etc. Schools may also create a database/databank of forms and records and share with it other schools for collaboration and for easy access and reproduction in the future.

Larupay (2005) states that computer literacy must also mean the ability to do the computing, and not merely to recognize, identify, or be aware of alleged facts about computing. Her argument is that a computer curriculum should give teachers actual programming experience, not just reading about computers in a book.

As computers become more widely used in schools, educators have invented many different uses for computers are based on quiet diverse models of what the purposes of computer education should be.

Moreover, North Carolina State Department of Public Investigation (1983) enumerates and identifies the essential plan elements to computer literacy program for teachers. For them, teachers are overcoming negative attitudes or fears, familiarizing users with the basic components of a microcomputer, describing what computer programs can and cannot do, introducing computer programming, identifying sources of information about computers and software, and discussing the impact of computers on society. Finally, despite of lack of consensus on the nature of computer literacy, educators have produced definitions through program development; computer literacy is included in the programs of the teachers training programs.

This study is anchored on Thorndike's theories of learning: The law of effect which states that stimulus-response bonds or connections are strengthened by what you do and the law of exercise which states that stimulus-response connections are strengthened by practice or repetition – in short, that practice makes perfect. Teachers as human beings look for satisfaction in anything that they do. When they find what they are doing rewarding and pleasurable, they are bound to continue it. If the utilization of electronic forms and records prove to be useful and convenient, teachers would surely use it repeatedly and they would adapt in using it to uplift their level of productivity.

Sibayan (2009) cited in Casiple (2013) revealed that teachers are not becoming good and productive nowadays, so that in the field, some teachers are inept and incompetent. The low quality of teachers is one of the causes of poor achievement of elementary grade pupils.

As affirmed a productive teacher should possess a solid background knowledge of the basics of how children learn, equipped with repertoire for best teaching practices, and imbued with values, attitudes and dispositions that foster a classroom atmosphere of mutual trust and respect for individual characteristics especially children's interest and abilities.

Desimone (2009) suggests that professionalism and personal productivity elevate the quality education and subsequently shape and implement teacher learning opportunities for the maximum benefit of both teachers and pupils. Hence, the ultimate goal of productivity is to improve the quality of life of man in particular and of the people in general.

On the other hand, constant use of computers has drawbacks. It can cause back pains and other teachers became dependent on the finished product by editing few contents, print and own it as their own work.

Some teachers who don't know how to use computers rely to those who are computer literate thus, adding workloads to them. This scenario burdens some teachers resulting to erroneous data, a lot of clerical error and in many cases doing unsubstantial work for the sake of compliance.

With such concepts on importance of teachers' use of computers in complying different forms and records, it is important and interesting to look into the level of teachers' productivity in the District of Lambunao West.

1.1 Statement of Objectives

Generally, this study aimed to determine the extent of utilization of electronic forms and records and the level of productivity of elementary grade school teachers. Likewise, the relationship of the variables was looked into. This was conducted in 35 schools in the District of Lambunao West, Schools Division of Iloilo for the school year 2016 – 2017.

Specifically, this study aimed at finding answers to the following questions:

1. What is the extent of utilization of electronic forms and records of teachers as an entire group and when classified according to personal related factors as age, civil status, and educational attainment?
2. What is the level of teachers' productivity as an entire group and when classified according to related personal factors as to age, civil status, and educational attainment?
3. Is there a significant difference in the extent of utilization of electronic forms and records of teachers when teachers are classified according to personal related factors as age, civil status and educational attainment?
4. Is there a significant difference in the level of teachers' productivity when teachers are classified according to personal related factors as age, civil status and educational attainment?
5. Is there a significant relationship between the extent of utilization of electronic forms and records and the productivity of teachers?

1.2 Hypotheses

Based on the foregoing problems, these hypotheses are advanced:

1. There is no significant difference in the extent of utilization of electronic forms and records of teachers when classified according to personal related factors as age, civil status, and educational attainment.
2. There is no significant difference in the level of teachers' productivity when classified according to personal related factors as age, civil status, and educational attainment.
3. There is no significant relationship between the extent of teachers' utilization of electronic forms and records and their productivity.

1.3 Conceptual Framework

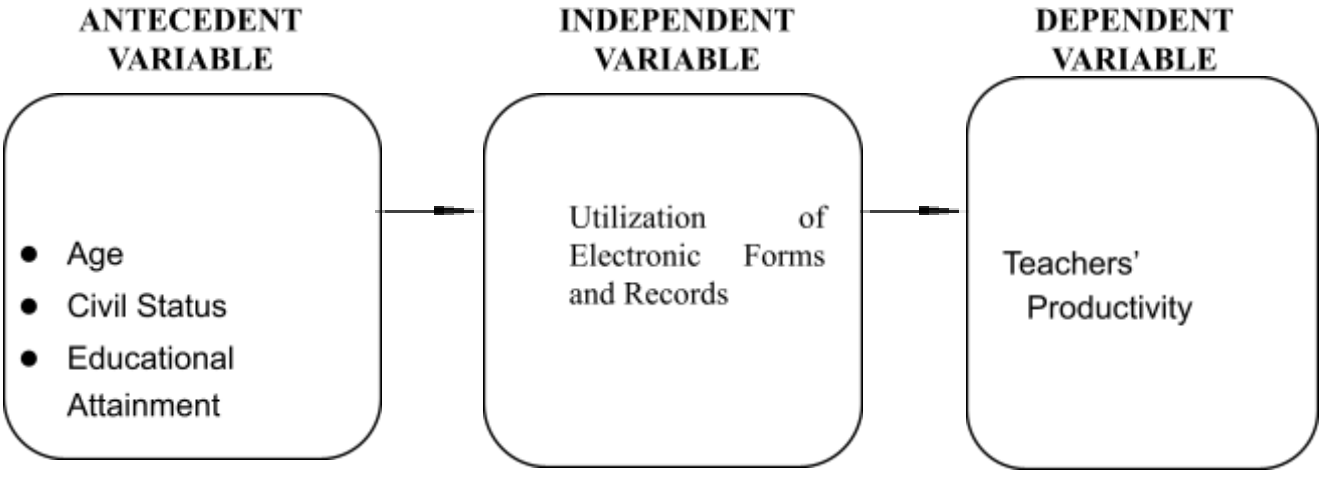

Figure 1. *Conceptual Framework of the Study*

1.4 Delimitation of the Study

This study aimed to determine the extent of utilization of electronic forms and records and the productivity of randomly selected teachers in the District of Lambunao West for the School Year 2016 – 2017. School administrators, special teachers, and Kinder teachers were not included for they have a

different set of electronic forms and records as compared to the Grades 1 to 6 elementary grade teachers.

In this descriptive study, the independent variables were teachers' personal related factors like age, civil status, and educational attainment and dependent variables were the extent of utilization of electronic forms and records of teachers and teachers' level of productivity.

A researcher-made questionnaire was constructed and validated specifically for gathering the data of the study. The instrument was intended to gather data on the extent of utilization of electronic forms and records of teachers. For teachers' productivity level, an adopted competencies as reflected in the attainment and results of teacher's Individual Performance and Commitment Review Form for the fourth quarter of the year was used.

The data gathered was analyzed using mean, frequency count, percentage, standard deviations, Kruskal-Wallis H Test, Mann – Whitney U test and Spearma-rho. The data collected were coded, tallied, tabulated, and computed using Microsoft Excel and Statistical Package for the Social Sciences Software, at 0.05 level of significance.

2. Literature Review

2.1 Electronic Forms and Records

DepEd Order No.4, s. 2014 states that in line the government's thrust to provide accessible, relevant and quality education to all Filipino children and youth, the Department of Education (DepEd) adopts and utilizes the modified school forms (SFs) effective End of School Year (EoSY) 2013-2014 in all public elementary and secondary schools. The modified SFs have undergone extensive review, validation and consultation with end-users at various levels of the agency. Consistency and alignment with the Department's thrusts and directions particularly with the k to12 Program have also been considered. The utilization of the modified forms will allow all public school teachers and school heads to focus on the core business of curriculum delivery.

The following are the seven modified SFs:

a) SF 1 – School Form 1: School Register
b) SF 2 – School Form 2:Daily Attendance Report for Learners
c) SF 3 – School Form 3: Books Issued and Returned
d) SF 4 –School Form4: Monthly Learner's Movement and Attendance
e) SF 5 – School Form5: Report for Promotion and Level of Proficiency
f) SF 6 – School Form 6: Summarized Report on Promotion and Level of Proficiency
g) SF 7 – School Form 7: School Personnel Assignment List and Basic Profile

Beginning EoSY 2013 – 2014, all public schools must use SF-5 and SF-6 replacing Forms 18 and 20,and the List of Graduates. By SY 2013-2014,all public schools must use all seven modified school forms, replacing the 16 previous school forms. Modification of adding new data elements without proper clearance is hereby discouraged.

In line with the implementation of the Enhanced Basic Education Act of 2013 (republic Act No.10533), the Department of Education is adopting the enclosed Policy Guidelines on Classroom Assessment for the K to 12 Basic Education Program (DepEd Order No. 8, s. 2015). Classroom assessment is an integral part in curriculum implementation. It allows the teachers to track and measure learners' progress and to adjust instruction accordingly. Classroom assessment informs the learners, as well as their parents and guardians of their progress. Effective School Year 2015-2016, the Policy Guidelines on Classroom Assessment for the K to 12 Basic Education Program shall be implemented in public elementary and secondary schools nationwide.

Classroom Assessment is a joint process that involves both teachers and learners. It is an integral part of teaching and learning. Teachers provide appropriate assessment when they aim to holistically measure learners' current and developing abilities while enabling them to take responsibility in the process. This view recognizes the diversity of learners inside the classroom, the need for multiple ways of measuring their varying abilities and learning potentials, and the role of learners as co-participants in the assessment process.

At the heart of this assessment framework is the recognition and deliberate consideration of the learners' zone of proximal development (Vygotsky 1978). Appropriate assessment is committed to ensure learner's success in moving from guided to independent display of knowledge, understanding, and skills, and to enable them to transfer this successfully in future situations. From this point of view, assessment

facilitates the development of learners' higher – order thinking and 21st-century skills.

This view of assessment, therefore, acknowledges the unity of instruction and assessment. Assessment is part of day-to-day lessons and extends the day-to-day classroom activities that are already in place in the K to 12 curriculum.

In support with the implementation of DepEd Order No. 8, s. 2015 entitled Policy Guidelines on Classroom Assessment for the K to 12 Basic Education Program, the Department of Education (DepEd) provides an Electronic Class Record Template free for use by all public school teachers beginning School Year (SY) 2015-2016. This official electronic version, developed by teachers and other personnel who volunteered their time and talent, allows for computation of grades consistent with the abovementioned DepEd Order. To ensure sustainability and to minimize technical difficulty, the design was simplified using basic features in the spreadsheet file. Teachers can download this file from the DepEd official website: www.deped. gov.ph/resources/downloads/eclass-record-templates and from the Learner Information System (LIS).

The Division Information Technology Officer designated Information Communication Technology (ICT) Coordinator is encouraged to conduct an orientation for school personnel and extend technical assistance to promote the use of this Electronic Class Record.

The Philippines agreed to adopt the 2007 World Health Organization-Child Growth Standards (WHO-CGS) in the assessment of Filipino school children as affirmed by the National Nutrition Council (NCC) Governing Board (GB) Resolution Nos. 2, s. 2008 and 3,s.2009. In 2007, the WHO developed an international growth standard for screening, surveillance and monitoring of school children and adolescents. the development of such standards was motivated by the global surge in childhood obesity, and the release of the new CGS for infants, preschool children and adolescents (DepED memorandum No. 165, s. 2010).

Starting School Year (SY) 2010 – 2011, the WHO-CGS shall be used in determining the nutritional status of Filipino school children aged 5-19 years old. Each school is expected to identify the SW and W pupils and submit to the Division Office (DO) not later the fourth week of June 2014 the names of the beneficiaries, nutrition profile (birthdate, age, weight in kilograms, height in meters, date of weighing and nutritional status) complete details of the addresses of the beneficiaries, location of the school, name and contact number of Principal and/or authorized personnel and District Supervisor using SBFP Forms 1 & 2 duly signed by the School Head. The List of SW pupils shall be segregated from the W pupils.

Furthermore, in line with the implementation of Republic Act (RA) No. 10533 or the Enhanced Basic Education Act of 2013, the Department of Education (DepEd) issues the enclosed Policy Guidelines on Daily Lesson Preparation for the K to 12 Basic Education Program.

As stated in the DepEd Order No. 42, s. 2016, planning lessons is fundamental to ensuring the delivery of teaching and learning in schools. These guidelines aim to support teachers in organizing and managing their classes and lessons effectively and efficiently and ensure the achievement of learning outcomes.

Furthermore, these guidelines affirm the role of the K to 12 teacher as facilitator of learning. Preparing for lessons through the Daily Lesson Log (DLL) or Detailed Lesson Plan (DLP) and provides teachers with an opportunity for reflection on what learners need to learn, and how best to facilitate the learning process. These guidelines also aim to empower teachers to carry out quality instruction that recognizes the diversity of learners inside the classroom, is committed to learners' success, allows the use of varied instructional and formative assessment strategies including the use of information and communications technologies (ICTs), and enables the teacher to guide, mentor, and support learners in developing and assessing their learning across the curriculum.

The Department of Education (DepEd) recognizes that instructional planning is essential to successful teaching and learning (Dick & Reiser 1996). Instructional planning is the process of determining what learning opportunities students in school will have by planning "the content of instruction, selecting teaching materials, designing the learning activities and grouping methods, and deciding on the pacing and allocation of instructional time" (Virginia Department of Education). According to Airasian (1994), planning is a vital step in the instructional process. It involves identifying expectations for learners and choosing the materials and organizing the sequential activities that will help learners reach those expectations. Instructional planning guarantees that teaching and learning are the central focus of classroom activity. Furthermore, it helps ensure that the time spent inside the classroom is maximized for instruction, is responsive to learners' needs, and therefore communicates expectations of

achievement to learners (Stronge, 2007).

Research shows that effective teachers organize and plan their instruction (Misulis 1997; Stronge 2007). With content and performance standards and learning competencies firmly articulated in the K to 12 curriculum, it is easier for teachers to carry out both short-term instructional planning. Under the K to 12 Basic Education Program, teachers can in fact plan student learning for a year, a semester, a quarter, a unit, or a lesson and secure coverage of the curriculum.

DepEd issues these guidelines on daily lesson preparation based on the belief that planning is fundamental to ensuring the delivery of teaching and learning in schools. Daily lesson preparation also encourages reflective practice since it requires teachers to think about and reflect on their instructional practices on the daily basis. Article IV, Section 2 of the Code of Ethics for Professional Teachers adopted in 1997 through Board Resolution No. 435 by the Board of Professional Teachers states that every teacher shall uphold the highest standards of quality education, shall make the best preparations for the career of teaching, and shall be at his best at all times in the practice of his profession. This policy is therefore meant to support teachers in upholding quality education standards by affirming the importance of instructional planning through Daily Lesson Log (DLL) or Detailed Lesson Plan (DLP) preparation. These guidelines ultimately aim to assist teachers in not only effectively managing instruction but also managing the performance of one of their core functions, which is to facilitate learning inside their classrooms.

DepEd hereby issues these guidelines on daily lesson preparation to institutionalize instructional planning as a critical part of the teaching and learning process. These guidelines are meant to support teachers in effectively organizing and managing K to 12 classrooms to be genuinely responsive to leaners' needs. Moreover, these guidelines in the preparation of DLP and DLL shall inculcate reflective practice among teachers by providing them opportunities to think about and reflect on their instructional practices. Daily lesson preparation is part of the teacher's core function as a facilitator of learning inside the classroom as affirmed through DepEd's Results-based Performance Management System (RPMS). Well-prepared and well-planned lessons are fundamental to ensuring the delivery of quality teaching and learning in schools. Lesson planning is one way of planning instruction. Lesson planning is a way of visualizing a lesson before it is taught. According to Scriver (2005), planning a lesson entails prediction, anticipation, sequencing, and simplifying. Lesson planning is a critical part of the teaching and learning process. The objective of the lesson planning is learning. Lesson planning helps teachers set learning targets for learners. It also helps teachers guarantee that learners reach those targets. By planning lessons, teachers are able to see that daily activities inside the classroom lead to learner progress and achievement or the attainment of learning outcomes. Lesson planning is a hallmark of effective teaching. As mentioned, effective teachers organize and plan instruction to ensure learners' success inside the classroom.

Lastly, as reflected in DO No. 2, s. 2015, that it aims to provide comprehensive guidelines for the adoption of the Civil Service Commission (CSC) Strategic Performance Management System (SPMS) in DepEd. These guidelines stipulate the specific mechanisms, criteria and processes for the performance target setting, monitoring, evaluation and development planning for schools and offices, covering all officials and employees, school-based and non school-based, in the Department holding regular plantilla positions. Personnel under contracts of service/job order and LGU-funded employees shall likewise be covered, but for purposes of performance evaluation only.

The Civil Service Commission (CSC), through the issuance of Memorandum Circular (MC) No. 06, series of 2012, sets the guidelines on the establishment and implementation of the Strategic Performance Management System (SPMS) in all government agencies. The SPMS gives emphasis to the strategic alignment of the agency's thrusts with the day–to-day operation of the units and individual personnel within the organization. It focuses on measures of performance vis-à-vis the targeted milestones, and provides a credible and verifiable basis for assessing the organizational outcomes and the collective performance of the government employees. As a learner-centered institutional, the Department of Education (DepED) is committed to continuously improve itself to better serve the Filipino learners and the community. The adoption of the SPMS in DepEd strengthens the culture of performance and accountability in the agency, with the DepEd's mandate, vision and mission and its core. There is a need to concretize the linkage between the organizational thrusts and the performance management system. It is important to ensure organizational effectiveness and track individual improvement and efficiency by cascading the institutional accountabilities to the various levels, units and individual personnel, as anchored on the establishment of a rational and factual basis for performance targets and measures.

Finally, it is necessary to link the SPMS with other systems relating to human resources and to ensure adherence to the principle of performance-based tenure and incentives.

In view of the above, this Order aims to adopt the SPMS as the Results-based Performance Management System (RPMS).

This DepEd Order provides for the establishment and implementation of the RPMS in all DepEd schools and offices, covering all officials and employees, school-based and non-school based, in the Department holding regular plantilla positions. It stipulates the specific mechanisms, criteria and processes for the performance target setting, monitoring, evaluation and development planning.

Individual Performance Commitment and Review Form (IPCRF) is the form that shall reflect the individual commitments and performance, which shall be accomplished by individual employees.

2.2 Factors Affecting the Utilization of Electronic Forms and Records

Computers have reconfigured the world. Computers have become so ubiquitous and have been integral part of almost every aspect of human existence. Consequently, people need to develop capabilities to operate them and maximize the benefits they bring (Larupay, 2005). It changed, for the better, the ways teachers do their work. The integration of technology in education is inevitable and the teachers, being the center of the delivery of learning need to accept it. It is stressed by Kumar, Rose and D'Silva (in Cheryl 2007) that teachers' computer acceptance is an important factor to the successful use of computer in education. As reported in the journal of InfoNet (Tomacruz, 2000), in this era of modernization, the knowledge of computers is a vital tool to attain national awareness, growth and development. the wide uses of computers spell better networking capabilities and faster communication for both local and international markets. In everything people do, computers act as their ready and dependable aid.

In the Philippines alone, computers occupy a highly important space in every office – whether private or government. With that, the new age of information requires an educated workforce. This workforce should be adaptable to changes since information technology continually develops. Perez (2002) mentioned that integrating computers in education can be challenging, frustrating, and expensive. As stated in Larupay (2005) that majority of the teachers hope to learn and use computers to their maximum potential especially in the field of education. Computer literacy to use electronic forms and records should be made possible when the elementary grade teachers have proper attitude towards attainment of computer utilization in accomplishing reports expected of them. Furthermore, elementary grade school teachers were performing their tasks accordingly but they appeared further to enhance their knowledge on computers as to utilize electronic forms and records so that they can update the use of latest technology effectively. The trend today in the curriculum and education sector is changing, and many educators are expected to have computer awareness and utilize electronic forms and records for convenience and practicality purposes. Educators must take a more pro-active role in technology development.

Other factors that affect utilization of electronic forms and records is age. According to Larupay (2005) that young, below 35 years old elementary grade teachers, were knowledgeable in the latest technology and they are very confident because computer subjects were included in the curriculum while the old elementary grade teachers showed that they were no longer interested on the said computers nor the utilization of electronic forms and records.

Results of Haplin's (1999) study on 73 preservice teachers indicated that the integration of computer literacy in method courses provided prospective teachers confidence to transfer their computer skills in their work based on their own explanatory experiences. Moreover, Guha (2000), in her qualitative study with 10 elementary teachers, found that teachers wanted to be competent in using computers and instruction as they could see positive changes in their productivity of output as a result in using technology in encoding their own electronic forms and records. in addition, over the past decades there has been a great deal of research into age and science. Studies have indicated that gender significantly influences many attributes related to computer use. Butler (2000) and Woodrow (1992) found that younger group of people have a higher degree of computer enthusiasm than do older generations do and concluded that the lower computer confidence of the latter might affect their use of computers in accomplishing given tasks. There may be ceartin degree of ability and understanding needed before a teacher will be interested in using and promoting computers.

Teachers' preparedness plays a vital role along with the Techtrends(2001) indicated that only one third of teachers feel prepared to computers effectively. This includes being able to use word processing, publisher and spreadsheet softwares and use of Department of Education's required electronic forms and

records. such equipment help teachers increase their productivity by preparing reports like the School Register, Daily Attendance, Books borrowed and returned, promotional, nutritional status, Permanent Records, Report card, Recordings, daily Lesson Log and the Individual Performance Commitment Review Form.

Gos (1996) suggested that the lack of computer experience among female teachers may be contributing factor to their passive role toward computer integration. Some literature also indicates that age has a strong impact on teachers' attitudes towards using computers in accomplishing tasks. Further studies suggest that younger teachers tend to show slightly more favorable attitude toward computer use than older teachers (Dupagne, & Kendi, 1992; Ertmer, Addison, Lane, Ross, & Woods, 1999). Other studies, however, report little or no difference in teacher attitudes on the basis of age (Koszalka, 2001; Kramer, P.E., & Lehman, 1990). In general, age appears to have an impact on attitudes and computers, the levelof knowledge about computers, and willingness to use computers.

While Becker and Riel (2000) examined the relationships between professional engagement and teaching practices including computer use. Professional engagement was measured by the frequency that the teacher had informal substantive communications with other teachers and their involvement in specific peer leadership activities, mentoring, workshop, conference presentations and enrolment in post graduate education. The study found that teachers who regularly participate in professional interactions and activities beyond their classroom perform different than teachers who have minimal contact with their peers on profession. The more intensive involved teachers within the professional activities, the more likely they were to use computers more and in exemplary ways. Their use of computers was not limited to gaining computer competence but extended to involvement in cognitively challenging tasks were computers are tools to promote communicating, thinking, producing and presenting ideas.

Although integrated learning systems create opportunities for fundamental changes in the way the teachers teach and the way the students learn, a recent survey of the use, support, and effect of instructional technology study (2002) indicated that, only one-third of teachers feel prepared to use it effectively. This includes being able to use word processing, spreadsheets, presentation and internet browsing software. Such tools help teachers increase their productivity by preparing reports and lessen plans, taking notes, (and communicating with colleagues and parents.)

The four major reasons for computers use in schools as proposed by by Hawkridge, Jaworski, and McMahon (1990) are: (1) The social rationale. Policy makers want to be sure that all children are "aware and unafraid of how computers work," and because "computers are pervading industrial societies and are likely to be important in all countries," learners should be prepared to understand computers and be aware of their role in society. (2) The vocational rationale. Learning to operate computers is an important competency. There will be employment opportunities for individuals who have the proper computer skills. (3) The pedagogic rationale. "Schools can be changed for the better introduction of computers." Computers facilitate change. They are symbols of progress. They encourage learning. Computers are seen as catalysts, enabling desired change in education to occur.

2.3 Teachers' Productivity

Jacobs (2000) cited in Gallego (2009), stressed that good work habits and time management are more important than ever because of todays' emphasis on productivity, which is the amount of quality work accomplished in relation to the resources consumed. Good work habits and time management lead to high personal productivity.

The role of teachers to become productive is after formal and ongoing, carried out at a school or other formal education. In many countries, a person who wishes to become a teacher must first obtain specified professional qualifications or credentials from a university or college. These professional qualifications may include the study of pedagogy, the science of teaching. Teachers, like other professionals, may have to continue their education after they qualify, a process known as continuing professional development. Teachers may use a lesson plan to facilitate student learning, providing a course of study which is called the curriculum. At the outset, a teachers' role may vary among cultures. Teachers may provide instruction in literacy, numeracy, craftsmanship or vocational training, the arts, religion, civics, community roles, or life skills Lindong (2015).

According to Mastura (2004), there are many factors that influence teachers' personal productivity such as aptitude, attitude, subject mastery, teaching methodology, personal characteristics, the classroom environment, general mental ability, personality, and relation with students.

The development of productive teachers one has to understand the factors associated with it.

Teachers who are not satisfied with their job will not be committed and productive. Ko (2003), believed that teacher personal productivity is a general term for teacher cultivation, professional qualifications and abilities. Medley (1979) believed that teachers are productive id he/she possess the following characteristics: have a satisfying personality, implement teaching methods efficiently, creating a fine learning atmosphere, be proficient in all kinds of teaching abilities, and knew when to use each kind of teaching ability. In addition to these, Ryan (1989) pointed out that productive teaching should include: planning strategies, evaluation methods and activity management. Dilag (1994) revealed in Giner (2004) how educational leadership would relate to the administrative productivity and organizational morale on tertiary school in Iloilo City. It was found out that the college administrator's leadership style of private administrators in the private college was benevolent. Authoritative in the areas of organizing, leading and controlling. Consultative leadership style was adopted by them in the planning function. The leadership style of public college administrators was consultative in all administrative function.

In becoming more productive, Dubrin (2000) had organized it into four related categories. First, overcoming procrastination; second, developing attitudes and values that foster productivity; third, developing skills and techniques that lead to personal productivity and fourth is overcoming time wasters. Procrastination is putting off doing a task for no valid reason. It is the major work habit problem for most employees and students. Unproductive people are the biggest procastinators, but even productive people have problems in procrastination. Developing good work habits and time management practices is often a matter of developing a matter of developing attitude toward work and time.

Skills and techniques are also important for becoming more productive. Dubrin describes some well-established methods or work-habit improvement as follows: plan your activities, get off to a good start, make good use of office technology, concentrate on one task at a time, streamline your work and emphasize important tasks, tackle dissatisfied tasks first, schedule similar tasks together, create some quiet and uninterrupted time, make use of bits of time and stay in control of paper works and e-mails. Another basic thrust is to improve personal productivity is to minimize wasting time. The following tactics and strategies as described by Dubrin are directly aimed at overcoming the problem of wasted time: minimize daydreaming, prepare a time log to evaluate the use of time, avoid being a computer cool-off, keep track of important names, places, and things, set a time for certain tasks and projects, and be decisive and finish things.

2.4 Measuring Teachers' Productivity

Productivity is generally defined by economists as the number of goods and/or series of services produced per hour of human labor. There were three different types of productivity discussed; technical productivity, economic productivity and social productivity. Technical productivity is the direct production of goods or services from individuals or work groups using tools of the workplace. Economic productivity is the monetary output from technical productivity. Social productivity is the desirability and usefulness of the products or services produced. (Gallego, 2009)

Some researchers defined productivity on the efficiency with which resources are used to produce goods and services (Prokopenko, 1987;Ross,1981). Riggs and Felix (1983) defined productivity as the "measure of how specified resources are managed to accomplish timely objectives stated in terms of quality and quantity." Productivity measurements, like most other behavioral and social science measurements have some problems (Muckler, 1992)

Productivity measures first in a global measure which is concerned with all aspects of producing goods and services as well as the amount of output. The second measure restricts productivity to human resources of an organization or a system. The third measurement indicates relationship of output per labor how worked. The fourth measures translates input and output into monetary. Ross also discussed individual measures of productivity should be specific, quantitative, and clear. He suggested a set of responsibilities in the job to measure individual productivity (Ross, 1981).

Individual performance appraisal includes specific dimensions of consideration. Day and Silverman (1989) in Corrigan (1998) used a performance appraisal of six identified dimensions; "potential for success (e.g., likelihood of becoming a manager in the firm), technical ability (e.g., understand technical aspects of the job, timeliness of work (e.g. completes work within time budget), client relations (e.g. gains confidence, respect, and cooperation of clients), and work ethic (e.g. willing to work long hours and complete assigned tasks.)

From Wikipedia, the free encyclopedia productivity in economics refers to measure of output from production processes, per unit of input. Labor productivity, for example, is typically measured as a

ratio of output per labor – hour, an input. Productivity maybe conceived of as a measure of technical or engineering efficiency as production. As such, quantitative measures of input, and sometimes output, are emphasized. Productivity is distinct from measures of allocate efficiency, which take into account both the value of what is produced and the cost of inputs used, and also distinct from measures of profitability, which address the difference between the revenue obtained from output and the expense associated with consumption of inputs, economic activity can be identified with production and consumption. Production is a process of combining various immaterial and material inputs of production so as to produce tools for consumption. The way of combining the inputs is called technology.

Saari (2002) economic activity can be identified with production and consumption. Production is the process of containing various immaterial inputs of production so as to produce tools for consumption. The way of combining the inputs of production in the process of making output is called technology.

Technology can be depicted mathematically by the production function which describes the function between input and output. The production function depicts production performance and productivity in the measure of it. By help of production function, it is possible to describe simply the mechanism of economic growth. Economic growth is the production increase achieved by the economic community. It is usually expressed as an annual growth percentage depicting (real) growth of the national product. Economic growth is created by two factors so that it is appropriate to talk about the components of growth. These components are an increase in production input and an increase in productivity

According to Jorqenson and Griliches (1967) changes in input and output have to be measured inclusive of both quantitative and qualitative changes. In practice, quantitative and qualitative changes take place relative quantatities and relative prices of different input and output factors alter. In order to accentuate qualitative changes input and output, the formula of total productivity shall be written as follows:

Total Productivity = output quality and quantity/input quality and quantity

According to Saari (2006), productivity is created in the real process, productivity gains are distributed in the income distribution process and these two processes, the real and income distribution process can be identified and measurable by the traditional accounting practice. The real process can be identified and measured by extra calculation, and this is why they need to be analyzed separately in order to understand the logic production performance. Surplus value to the producer is a result of the real process, and measured proportionally it means productivity.

Furthermore, Gallego (2009) has deliberated the phenomenon of productivity, measurement of productivity, distribution of productivity gains. She suggested that the measurement of productivity, measurement of productivity, distribution of productivity gains. She suggested that the measurement of productivity shall be developed so that it will indicate increases or decreases in the productivity of the company and also the distribution of the “fruits of production among all parties at interests”. According to Davis, the price system is mechanism through which productivity gains are distributed, and besides the business enterprise, receiving parties may consists of its customers, staff and the suppliers of production inputs.

Saari (2006) describes productivity model by help of which it is possible to calculate the results of the real process, income distribution process and production process. The starting point is a profitability calculation using surplus value as a criterion of profitability. The surplus value calculation is the only valid measure for understanding the connection between real process and production process. A valid measurement of total productivity necessitates considering all production inputs, and the surplus value calculation to conform to the requirement.

Kendrick, (1965) productivity studies analyze technical processes and engineering relationship such as how much of an output can be produced in a specified period of time. It is related to the concept of efficiency. While productivity is the amount of output produced relative to the amount of resources (time and money) that go into production, efficiency is the value of output relative to the cost of inputs used. Productivity improves when the quality of inputs. Efficiency improves, when the cost of inputs used is reduced relative to the value of output.

Companies can increase productivity in a variety of ways. The most obvious methods involve automation and computerization which minimize the tasks that must be performed by employees. A comfortable employee, the theory maintains, can produce more than a counterpart who struggles through the day. In fact, measures such as raising a workplace temperature can have a drastic effect on office productivity (Kendrick, 1984). The literature review aimed at establishing the theoretical and empirical concepts which served as the springboard for the present investigation’s explanation on extent of usage of

electronic forms and records and level of teachers' productivity.

In fact, some studies (such as Rao and Owyong 1997) indicate that this process of productivity growth is already occurring in the more developed economies in the region. Output is usually measured as an aggregate of all types of production activities. The categories of inputs generally identified are capital, labor, energy, nonenergy intermediate materials, and sometimes purchased services. Inputs such as land and inventories are often included in the measure of capital. The two potentially most problematic issues that arise in data construction involve the measurement of capital and aggregation. Aggregation is a problem because capital is clearly not homogeneous. As regards its measurement and the construction of a capital series, it is also problematic since it requires rethinking the idea of current input use. As a durable input the services from the available stock of capital, and the rental or user prices of these services, are relevant values for the construction of productivity growth measures, and neither of these is readily observable.

Developing capital measures also requires consideration of what types of inputs should be included as components of the capital stock, which is sometimes unclear. Measurement of Output for a single-output firm is fairly straightforward, since for a single output there is only one type of unit involved, say the number of pairs of shoes or tons of steel. In this case, therefore, an average price per pair or ton can generally be specified in dollars as total sales divided by the quantity of the output, and thus quantity and price indexes can directly be computed. Even for this simple case there are problems involved. For example, it is not immediately clear how changes in quality can be handled. In a few cases (tons of steel might be an example) this is not a critical issue since the product is quite homogenous. However in most other cases, such as the number of computers produced, the quality of a particular unit might change over time or across companies (as in different brands). Another problem that may complicate the measurement of output 26 APO Productivity Journal is the existence of inventories. Data are generally reported in terms of sales, whereas actual production is the relevant output for the measurement of productivity. Inventories constitute the difference between these two figures. For the measurement of output, therefore, sales data should ideally be adjusted by net inventory change. In other words, the correct output series to use is obtained from adding sales to inventory change. For a firm that produces multiple outputs, there are further difficulties: how to add together goods that are measured in different units is a standard index-number problem? It is not an easy problem to deal with. While determining the total value of production is relatively straightforward, dividing this value into its aggregate quantity and price components is not. This aggregation issues will be dealt with in greater detail below.

Measurement of Labor Labor input is relatively easy to measure compared to other inputs, since labor statistics are generally presented in terms of wage bill paid and the number of workers or person-hours. By dividing the wage bill by the number of workers or person-hours, we obtain an estimate of the average wage rate. The number of person-hours is generally a better measure of true labor input than number of workers, since the latter does not reflect changes in the hours worked per worker. Measurement of Capital, the most problematic input to measure is probably capital. First, the categories are often not clearly defined. Although buildings and structures, machinery and equipment, etc. are often accounted for, other categories that are potentially important are ignored. One such example is research and development, which might be considered a long-term investment, and therefore a component of the capital stock. The main difficulty of measuring capital, however, is how to deal with an input that provides a stream of services over time, and is often not considered as part of the explicit costs of the firm. A relevant measure of the available capital stock is computed as what is left of the capital investment in past time periods for the firm.

Matthews (2017) added that components positively affect our productivity, meaning that having more of any one of them can make us more productive. (1) Creative energy — This one is fairly straightforward. Though we can influence ourselves by setting up the right conditions, the brute fact is that there are times when we are insanely, innately creative. (2) Focus — Another straightforward one. There are times when our attention is laser-focused on one task, project, or idea, and time, reality, and physical necessities melt away while we chase the muse. (3) Motivation — Motivation comes in two distinct breeds: general motivation to get something – *anything* – done and specific motivation to get specific tasks completed. The higher the motivation, the more likely we are to stay on task and complete the project. (4) Aptitude — Our proficiency at a given task has a major impact on our ability to complete that task in a given amount of time. For example, people who have difficulty writing have to work so much harder to complete the same given article, essay, or post than someone who is either innately better

or better through practice. Experts at a task are quantum leaps ahead of novices in terms of productivity. (5) Ideal time — Different tasks require different amounts of time to complete them. Figuring out your own ideal time is a matter of practice, but it's critical for planning and execution. The importance of being able to plan work is obvious on the planning end, but many people forget that going past the ideal time in execution also hampers productivity.

The following components negatively affect our productivity, meaning that having more of any one of them can make us less productive: (1) Difficulty (of task) — This is different from our aptitude at a task. Some tasks are inherently more difficult than others and require more of the enablers to complete. Compare the difference in difficulty between, say, writing a catch-up email to a friend and writing a pillar post for a blog. Though the word counts might be the same, the difficulty of writing a good pillar post is simply far greater than writing the catch-up email. (2) Distractions — Distractions are different from focus because focus has to do with what's going on inside our heads, whereas distractions have to do with what's going on outside our heads. Of course, what's going on outside our heads has a tendency to creep inside our heads, but usually removing distractions requires you to cut yourself off from something else. Increasing our focus requires us to quiet the noise inside of our heads. Understanding the difference between the two is critical for decreasing distractions requires different methods than increasing focus, although the two dimensions are heavily interrelated.

2.5 Summary

As reported in the journal of InfoNet (Tomacruz, 2000), in this era of modernization, the knowledge of computers is a vital tool to attain national awareness, growth and development. the wide uses of computers spell better networking capabilities and faster communication for both local and international markets. In everything people do, computers act as their ready and dependable aid. In the Philippines alone, computers occupy a highly important space in every office – whether private or government. with that, the new age of information requires an educated workforce. this workforce should be adaptable to changes since information technology continually develops. Ko (2003), believed that teacher personal productivity is a general term for teacher cultivation, professional qualifications and abilities.

Skills and techniques are also important for becoming more productive. Dubrin describes some well-established methods or work-habit improvement as follows: plan your activities, get off to a good start, make good use of office technology, concentrate on one task at a time, streamline your work and emphasize important tasks, tackle dissatisfied tasks first, schedule similar tasks together, create some quiet and uninterrupted time, make use of bits of time and stay in control of paper works and e-mails. Another basic thrust is to improve personal productivity is to minimize wasting time. The following tactics and strategies as described by Dubrin are directly aimed at overcoming the problem of wasted time: minimize daydreaming, prepare a time log to evaluate the use of time, avoid being a computer cool-off, keep track of important names, places, and things, set a time for certain tasks and projects, and be decisive and finish things.

Productivity is generally defined by economists as the number of goods and/or series of services produced per hour of human labor. There were three different types of productivity discussed; technical productivity, economic productivity and social productivity. Technical productivity is the direct production of goods or services from individuals or work groups using tools of the workplace. Economic productivity is the monetary output from technical productivity. Social productivity is the desirability and usefulness of the products or services produced. (Gallego, 2009). Some researchers defined productivity on the efficiency with which resources are used to produce goods and services (Prokopenko, 1987;Ross,1981). Riggs and Felix (1983) defined productivity as the "measure of how specified resources are managed to accomplish timely objectives stated in terms of quality and quantity."

Recently, some studies sought to determine the effect of computers on productivity. Some studies (Boozer, Krueger and Wolkon (1992), Kruger(1993), Autor, Katz and Krueger (1998) have found that computers have had a highly significant effect on accomplishing related workloads. In this generation where technology is essential one must equipped with knowledge and skills in the use of computers. Teachers nowadays are faced not only with the challenge of implementing the new curriculum but to be able to accomplish necessary reports which require the use of computers. The productivity of teachers is greatly dependent on their utilization of the electronic forms and records which is widely implemented. Teachers are versatile individuals and they are greatly respected by other professions because of their ability to be resilient in overcoming any endeavor. This ability enables them to cope with the change brought by the fast changing society one of which is the use of electronic forms and records.

3. Research Method

3.1 Purpose of the Study and Research and Research Design

This study aimed to determine the extent of utilization of electronic forms and records and the productivity of the elementary grade teachers in the District of Lambunao West for the School Year 2016 – 2017. The descriptive -survey method was used in this study. It describes the nature of the situation as it exists at the time of the study, and explores the causes of the phenomenon. Descriptive research involves collecting data in order to tests hypothesis or answers questions concerning the current status of the subject (Fraenkel and Wallen, 2006).

3.2 Methodology

The researcher used a descriptive – correlation research approach as a method design to determine if two or more variables are associated with each other since the correlation involves collection of data to determine whether, and what degree, a relation exists between these variables; namely personal factors in terms of age, civil status, educational attainment, utilization of electronic forms and records and teachers' productivity. The variable included the personal factors as the antecedent variables, utilization of electronic forms and records as the dependent variable and teachers' productivity as independent variable. A questionnaire was used in the data gathering.

3.3 The Respondents

The total population of teachers in the District of Lambunao West was two hundred and seventy-seven teachers (277) excluding the school heads and school principals. The respondents in this study were one hundred fifty-seven (157) randomly selected teachers in the District of Lambunao West, Division of Iloilo who are teaching from Grades 1 to Grades 6 for the School Year 2016-2017. The researcher listed down the names of the teachers of the District of Lambunao West. Through fish ball method, the respondents were drawn and stratified sampling method. Slovin's formula were employed in determining the respondents.

Of the 157 respondents, 10 (6.13 %) were from Caninguan Central School; 5 (3.18 %) were from Agsirab Elementary School ; 4 (2.55 %) were from Agustin Gallego Memorial Elementary School; 7 (4.46%) were from Bagongbong Elementary School; 4 (2.55 %) were from were from Banban Elementary School; 5 (3.18 %) were from Bonbon Elementary School; 5 (3.18 %) were from Bontoc Elementary School; 1 (0.64%) were from Buwang Primary School; 4 (2.55%) were from Cabatangan Elementray School; 42.55 %) were from Cabugao Elementary School; 1 (0.64%) were from Cabunlawan Elementary School; 7 (4.46 %) were from Caguisanan Elementary School; 53.18 %) were from Cayan Oeste Elementary School, 4 (2.55 %) were from Cornelio Gallego Elementary School, 3 (1.91 %) were from Daanbanwa II Elementary School; 11 (7.01%) were from Don Ignacio Ramirez Memorial Elementary School; 4 (2.55 %) were from Eliseo Legayada Elementary School; 5 (3.18 %) were from Filemon Lebero Elementary School; 4 (2.55 %) were from Hipgos Elementary School; 4 (2.55 %) were from Lumanay Elementary School; 4 (2.55 %) were from Magbato-Sibacungan Elementary School; 4 (2.55 %) were from Malag-it Elementary School; 3 (1.91 %) were from Manaulan Elementary School; 5 (3.18 %) were from Maribong Elementary School; 3 (1.91 %) were from Petronio Leal Memorial Elementary School; 4 (2.55 %) were from Pajo Elementary School; 7 (4.46 %) were from Panuran Elementary School; 7 4.46 %) were from Pughanan Elementary S; 1 (0.64%) were from Sagcup Parochial School; 4 (2.55 %) were from San Gregorio Elementary School; 7 (4.46%) were from Tagbacan Elementary School; 4 (2.55 %) were from Tampucao Elementary School and 7 (4.46%) were from Walang Elementary School. The data is reflected in table 1.

Table 1. Distribution of Respondents by School

Categories	Population *N*	Respondents *n*	Percentage *%*
Entire Group	277	157	100
Schools			
Caninguan Central School	18	10	6.13
Agsirab Elementary School	8	5	3.18
Augustin Gallego Memorial Elementray School	7	4	2.55
Bagongbong Elementary School	13	7	4.46

Banban Elementary School	7	4	2. 55
Bonbon Elementary School	8	5	3.18
Bontoc Elementary School	8	5	3.18
Buwang Elementary School	3	1	0.65
Cabatangan Elementary School	7	4	2.55
Cabugao Elementary School	7	4	2.55
Cabunlawan Elementary School	2	1	0.64
Caguisanan Elementary School	12	7	4.46
Cayan Oeste Elementary School	8	5	3.18
Cornelio Gallego Elementary School	7	4	2.55
Daanbanwa Elementary School	6	3	1.91
Don Ignacio Ramirez Memorial Elementary School	20	11	7.01
Eliseo Legayada Elementary School	7	4	2.55
Filemon Lebero Elementary School	8	5	3.18
Hipgos Elementary School	7	4	2.55
Lumanay Elementary School	7	4	2.55
Magbato-Sibacungan Elementary School	7	4	2.55
Malag-it Elementary School	7	4	2.55
Manaulan Elementary School	6	3	1.91
Maribong Elemntary School	8	5	3.18
Petronio Leal Memorial Elementary School	6	3	1.91
Pajo Elementary School	7	4	2.5
Panuran Elementary School	13	7	4.46
Pughanan Elementary School	12	7	4.46
Sagcup Elementary School	3	1	0.64
San Gregorio Elementary School	7	4	2.55
Tagbacan Elementary School	12	7	4.46
Tampucao Elementary School	7	4	2.55
Walang Elementary School	12	7	4.46

The respondents of this study were the one hundred fifty-seven (157) randomly selected teachers in the District of Lambunao West for the School Year 2016-2017. They were classified according to personal factors as to age, civil status and educational attainment. As to age, there were 69 or 44% who belonged to below 35 years old age bracket, 45 or 29% who are in the 35-46 years old age bracket and 43 or 27% is above 46 years old. As to civil status, 25 or 16% were single and 132 or 84% were married. As to educational attainment, 94 or 60% were Bachelor's degree holders and 63 or 40% were Master's degree holders. The data is reflected in Table 2.

Table 2**.** Distribution of Respondents According to Personal Factors

Category	*f*	*%*
Entire Group	157	100
Age		
Below 35 years old	69	44
35 – 46 years old	45	29
Above 46 years old	43	27
Civil Status		
Single	25	16
Married	132	84
Educational Attainment		
Bachelor's Degree	94	60
Master's Degree	63	40

3.4 The Instrument

The data needed for the study were gathered using researcher-made survey questionnaires that were distributed to the randomly selected teachers in the District of Lambunao West. It was validated by experts specifically for the study. The instrument is composed of two parts.

Part I. *Respondent's data*. Information as to personal related variables as to age, civil status, educational attainment and the teachers' Individual Performance and Commitment Review Form (IPCRF) rating for the School Year 2016-2017.

Part II. *Main Instrument/ Checklist*. The second part of the checklist was the extent of utilization of electronic forms and records of the respondents.

Results on the IPCRF depend upon the rate of the rater in charge of each school. Scores will be interpreted base on the standard use of the IPCRF.

Scale	*Adjectival*	*Description*
4.51-5.00	Outstanding (130% and above)	Performance represents an extraordinary level of achievement and commitment in terms of quality and time, technical skills and knowledge, ingenuity, creativity and initiative. Employees at this performance level should have demonstrated exceptional job mastery in all areas of responsibility. Employee achievement and contributions to the organization are marked excellence.
3.51-4.50	Very Satisfactory (115% and 129%)	Performance exceeded expectations. All goals, objectives and targets were achieved above the established standards.
2.51-3.50	Satisfactory (100% and 114%)	Performance met expectations in terms oquality of work, efficiency and timeliness. The most critical annual goals were met.
1.51-2.50	Unsatisfactory (51% and 99%)	Performance failed to meet expectations, and / or one or more of the most critical goals were not met
1.00-1.50	Poor (50% and below)	Performance was consistently below expectations, and/or reasonable progress towards critical goals was not made. Significant improvement is needed in one or more important areas.

In the extent of utilization of electronic forms and records of the respondents the questionnaire was comprised of 10 items. The respondents checked the intended answers. Using a five-point scale, the researcher used the following scale and corresponding description:

5 – "Always" means that the teacher has a very high extent of utilization of electronic forms and records

4 – "Often" means that the teacher has a high extent of utilization of electronic forms and records

3 – "Sometimes" means that the teacher has a moderate extent of utilization of electronic forms and records

2 – "Seldom" means that the teacher has a low extent of utilization of electronic forms and records

1 – "Never" means that the teacher has a very low extent of utilization of electronic forms and records

3.5 Data Collection Procedure

Prior to the conduct of this study, the draft of the questionnaire was prepared, it was submitted to the research adviser for corrections and suggestions. To establish the validity of the instrument, the researcher requested the panel of 3 jurors to review the instrument for content validity. They were chosen on the basis of their respective field of specialization. The instrument was evaluated using the criteria developed for the evaluation of survey questionnaires set forth by Carter V. Good and Douglas B. Scates. Each Item was rated as appropriate, not appropriate, or needs revision.

The items rated "appropriate" by the jurors were retained while those rated as "not appropriate" were not included and were changed, and those items that "required revision" were revised. After the validation and determination of the reliability of the instrument, the final draft of the questionnaire was prepared after considering the jurors' corrections and suggestions for improvement. The researcher requested permission to conduct the study from the district supervisor of the District of Lambunao West, the Schools Division Superintendent and from the different School Principals of the identified schools in Lambunao West . The permit was endorsed by the research adviser and the Associate Dean of the College of Education. After permission was obtained, the researcher reproduced the instrument and personally administered and distributed the research instrument to the respondents in their respective schools. The respondents were assured of the confidentiality of their responses.

Upon the retrieval of the accomplished questionnaires, the data were coded, tabulated and computer-processed using the Statistical Package for Social Science (SPSS) software.

3.6 Data Analysis Procedure

Mean and standard deviation were used for descriptive statistics.

To define the extent of utilization of electronic forms and records this and its corresponding description was used:

Scale	*Description*
4.51 - 5.00	Very High Extent
3.51 - 4.50	High Extent
2.51 – 3.50	Moderate High Extent
1.51 – 2.50	Low Extent
1.00 – 1.50	Very Low extent

To determine the teachers' level of productivity, this scale and its description was used.

Scale	*Description*
4.51 - 5.00	Outstanding
3.51 - 4.50	Very Satisfactory
2.51 – 3.50	Satisfactory
1.51 – 2.50	Unsatisfactory
1.00 – 1.50	Poor

Mann-Whitney U test and Kruskal-Wallis H tests were used to determine if significant difference existed. To determine the insignificant relationship Spearman-rho was used. Level of significant was set as 0.05 alpha. All computations were processed through Statistical Package for Social Science (SPSS) software.

4. Results and Discussion

4.1 Descriptive Data Analysis

The mean and standard deviation were used to determine the extent of utilization of electronic forms and records and the level of teachers' productivity. The mean was used as basis of interpretation. The data were processed through Statistical Package for Social Sciences (SPSS) software.

4.2 Extent of utilization of electronic forms and records of teachers

Table 3 shows the extent of utilization of electronic forms and records of teachers. The findings revealed that as an entire group of teachers, the extent of utilization of electronic forms and records was very high *(M=3.80, SD=1.52*). When classified into age, the data showed both below 35 years old (*M=4.42, SD=1.01)* and those who were 35-46 years *old (M=4.25, SD=1.18)* had high extent of utilization of

electronic forms and records. Those who belonged to 46 years old bracket *(M=2.34, SD=1.55)* had low extent of utilization of electronic forms and records. As to civil status, it showed that both single *(M=4.36, SD=1.09)* and married *(M=3.70, SD=1.57)* had high extent of utilization of electronic forms and records. Finally, when grouped as to educational attainment, the Bachelor's Degree holders *(M=3.28, SD= 1.65)* had high extent of utilization of electronic forms and records, and the Master's Degree holders *(M=4.58, SD=0.82)* had very high extent of electronic forms and records utilizations. Data are reflected in Table 3.

Table 3. The Extent of Utilization of Electronic Forms and Records

Category	Mean	Description	SD
Entire Group	3.80	High	1.52
Age			
Below 35 years old	4.42	High	1.01
35 – 46 years old	4.25	High	1.18
Above 46 years old	2.34	Low	1.55
Civil Status			
Single	4.36	High	1.09
Married	3.70	High	1.57
Educational Attainment			
Bachelor's Degree	3.28	Moderately High	1.65
Master's Degree	4.58	Very High	0.85

4.3 Level of teachers' productivity

Table 4 shows the level of teachers' productivity. The findings of the study revealed that as an entire group, the level of teachers' productivity was very satisfactory *(M=3.97, SD=0.24)*. With regards to Age Bracket, the data showed that those teachers who belonged to below 35 years old *(M=3.93, SD=0.27),* those who are in the 35 – 46 years old *(M=3.99, SD=0.21),* and those who are 46 years old and above *(M=4.02, SD=0.23)* age bracket had a very satisfactory level of teacher's productivity. As to civil status, the findings of the study revealed that the single *(M=3.93, SD=0.25)* and the married *(M=4.04, SD=0.21)* had a very satisfactory teachers' productivity. Finally, when grouped as to the educational attainment, the Bachelor's degree holders *(M=3.92, SD=0.24),* and the Master's Degree holders *(M=3.98, SD=0.24)* had very atisfactory level of productivity. Table 4 presents the data.

Table 4. Level of Teachers' Productivity

Category	Mean	Description	SD
Entire Group	3.97	Very Satisfactory	0.24
Age			
Below 35 years old	3.93	Very Satisfactory	0.27
35 – 46 years old	3.99	Very Satisfactory	0.21
Above 46 years old	4.02	Very Satisfactory	0.23
Civil Status			
Single	3.93	Very Satisfactory	0.25
Married	4.04	Very Satisfactory	0.21
Educational Attainment			
Bachelor's Degree	3.92	Very Satisfactory	0.24
Master's Degree	4.04	Very Satisfactory	0.24

4.4 Inferential Data Analysis

In order to determine whether or not significant differences existed in the extent of utilization of electronic forms and records of teachers when classified as to age, civil status and educational attainment, the researcher used Mann – Whitney U test and Kruskal – Wallis H test as statistical tool. The data were processed through Statistical Package for Social Science (SPSS) software.

4.5 Difference in the extent of utilization electronic forms and records of teachers when classified as to age

A significant difference existed in the extent of utilization of electronic forms and records of teachers when classified as to age, below 35 years old (M=95.36), 35 to 46 years old (M=89.92), and above 46 years old (M=41.33). Kruskal Wallis H Test was utilized. It obtained a result of ($x^2 = 48.372$, p=0.000). Table 5a shows the data.

Table 5a. Difference in the Extent of Utilization of Electronic Forms and Records of Teachers when Classified as to Age

Category	Mean	df	x^2-value	p-value	Decision
Age					
Below 35 years old	95.36				
35 – 46 years old	89.92	2	48.372*	0.000	Significant
Above 46 years old	41.33				

*p-value < 0.05, significant

4.6 Differences in the extent of utilization of electronic forms and records of teachers when classified as to civil status and educational attainment.

A significant difference existed in the extent of teacher's utilization of electronic forms and records when classified as to civil status, single (M=94.92) and (M=75.98). The obtained z-value was -2.073* and the p- value of 0.038 was lesser than the set 0.05 level of significance. As to educational attainment, Bachelor's Degree holder (M=65.66) and Master's Degree holder (M=98.90) a significant difference also existed. Mann-Whitney U Test was utilized. The z-value was -4.873* and the p-value of 0.038 was lesser than0.05 alpha. Table 5b shows the data.

Table 5b. Differences in the Extent of Utilization of Electronic Forms and Records of Teachers when classified as to Civil Status and Educational Attainment.

Category	Mean	Mann Whitney U Test	z-value	p-value	Decision
Civil Status					
Single	94.92	1252.00	- 2.073*	0.038	Significant
Married	75.98				
Educational Attainment					
Bachelor's Degree	65.66	1707.50	- 4.873*	0.038	Significant
Master's Degree	98.90				

*p-value <0.05, significant

4.7 Differences in the level of teachers' productivity whencClassified as to age.

The results of the study revealed that there was no significant difference in the level of teacher's productivity when classified as to age (x^2= 3.661, *p=0.0.160)*. Data is reflected in table 6a.

Table 6a. Differences in the Level of Teachers' Productivity when Classified as to Age

Category	Mean	df	x^2-value	p-value	Decision
Age					
Below 35 years old	71.28				
35 – 46 years old	83.47	2	3.661	0.160	Not Significant
Above 46 years old	86.71				

p> 0.05, not significant

4.8 Differences in the level of teachers' productivity when classified as to civil status and educational attainment.

A significant difference existed in the extent of teacher's productivity when classified as to civil status, single (M=69.48) and married (M=80.80). It obtained a z-value of -1.142 and he p-value of 0.253 was greater than the set 0.05 alpha.

In terms of educational attainment, the Bachelor's Degree holder (M=70.18) and the Master's Degree holder (M=92.17), a significant difference was noted. The z-value was
-2.971 and the p-value of 0.003* was lesser than 0.05 alpha. The Mann-Whitney U Test was utilized.

Table 6b shows the data.

Table 6b. Differences in the Level of Teachers' Productivity when Classified as to Civil Status and Educational Attainment

Category	Mean	Mann Whitney U Test	z-value	p-value	Decision
Civil Status					
Single	69.48	1412.00	-1.142	0.253	Not Significant
Married	80.80				
Educational Attainment					
Bachelor's Degree	70.18	2131.50	-2.971	0.003*	Significant
Master's Degree	92.17				

*p< 0.05, significant

4.9 Relationship between the extent of teachers' utilization of electronic forms and records and their level of productivity.

The study revealed that there is no significant relationship existed between the extent of teachers' utilization of electronic forms and records and their level of productivity (r = 0.169, p = 0.034). Table 7 shows the data.

Table 7. Relationship between the Extent of Teachers' Utilization of Electronic Forms and Records and their Level of Productivity

Variables	**r- value**	**Decision**	**p – value**
Extent of Teacher's Utilization of E-forms and Record vs Teacher's Level of Productivity	0.169*	Not significant	0.034

*p < 0.05, not significant

4.10 Summary of the Methods and Findings

This study determined the extent of utilization of electronic forms and records of 2016 – 2017. The respondents were the randomly selected elementary grade school teachers in the District of Lambunao West. The study used a researcher-made instrument to measure the extent of utilization of electronic forms and records however, the teachers' productivity was the score gained by the teachers in their latest IPCRF. It employed the mean and standard deviation as descriptive substantial tools; Mann-Whitney U Test, Kruskal-Wallis H Test and Spearman Rho as inferential statistics set at 0.05 alpha. The study sought to answer the following questions:

1. What is the extent of utilization of electronic forms and records of teachers as an entire group and when classified according to personal related factors as age, civil status and educational attainment?
2. What is the level of teachers' productivity as an entire group and when classified according to related personal factors as to age, civil status and educational attainment?
3. Is there a significant difference in the extent of utilization of electronic forms and records of teachers as an entire group and when teachers were classified according to personal related factors as age, civil status and educational attainment?
4. Is there a significant difference in the level of teachers' productivity as an entire group and when teachers were classified according to personal related factors as age, civil status and educational attainment?
5. Is there a significant relationship between the extent of utilization of electronic forms and records and the productivity of teachers?

4.11 The findings of the study

The findings of the study revealed that as an entire group and regardless of age, civil status and educational attainment, the extent of utilization of electronic forms and records of teachers in the District of Lambunao West was high. The level of teachers' productivity revealed that as an entire group regardless of age, civil status and educational attainment was very satisfactory. There were significant differences noted in the extent of utilization of electronic forms and records of teachers when classified according to age. The differences existed because those teachers who aged below 35 and 35 – 46 years old have high extent of utilization of electronic forms and records while those who belonged to the teachers above 46 years old

had low extent of utilization of electronic forms and records.

There were also significant differences noted in the extent of utilization of teachers' electronic forms and records when classified according to civil status for single teachers have higher extent of utilization compared to those who were married. Significant differences were also noted in the extent of utilization of teachers' electronic forms and records when classified according to educational attainment for Master's Degree holder teachers have very high extent of utilization of electronic forms and records compared to those who were Bachelor's Degree holder teachers that had moderately high extent of utilization. There were no significant differences in the level of teachers' productivity when classified according to personal related factors age, civil status and educational attainment. A significant relationship existed between the teachers' extent of utilization of electronic forms and records and their productivity.

5. Conclusions

The elementary grade school teachers had high extent of utilization of electronic forms and records as an entire group except for bachelors' degree holdrs.. Not all teachers are computer literate and some teachers have limited access to computers and internet connection wherein they can learn to download and use the different Department of Education electronic forms and records template. Other factors, include the attitude of some teachers to accept and embrace new innovations in doing their daily work. Some are reluctant to let go of their traditional ways and strive to learn the new practices. Moreover, time is also a big related factor for teachers are considered as one of the busiest professionals that they don't have time to update needed electronic forms and records.

The level of the teachers' productivity has a very satisfactory rating regardless of the category. This means that the teachers' performance exceeded expectations. All goals, objectives and targets were achieved above the established standards. This shows that the overall productivity of teachers doesn't rely on their skill to encode and personally utilize electronic forms and records. It can be said that teachers' productivity has varied factors and every teacher has a definite set of unique qualities to do about their everyday tasks and complete with the expected outputs from them. The very satisfactory level of productivity among the elementary grade school teachers might be attributed to their commitment, collaboration with other stake holders, desirable traits and outstanding performance, and accomplishment. However, it can also be concluded that if only all teachers can be adaptive and be a 21st century educators their productivity level could be outstanding which means, performance represents an extraordinary level of achievement and commitment in terms of quality and time, technical skills and knowledge, ingenuity, creativity and initiative. Their performance level should have demonstrated exceptional job mastery in all areas of responsibility.

There were significant differences noted in the extent of utilization of electronic forms and records of teachers when classified according to age. The differences existed because those who aged below 35 have very high extent of utilization of electronic forms and records as compared to those who belonged to those teachers who aged 35 – 46 years old and that of above 46 years old. This could be attributed to orientation and interests of younger generations when it comes to computers which had been a big help for them to be well verse and adept in using electronic forms and records. Furthermore, in the new age of gadgets and technologies, younger generations have better exposure to these as compared with the older group of teachers.

There were no significant differences in the level of teachers' productivity when classified as to age, civil status and educational attainment. This shows that the age and civil status does not affect the teachers' productivity but the educational attainment counts to make a difference.

A significant relationship did not exist between the teachers' extent of utilization of electronic forms and records and their productivity. This shows that a teacher to be productive may or may not use electronic forms and records.

5.1 Implications for Theory and Practice

The findings of the study have led to certain implications for theory and practice in the extent of utilization of electronic forms and records and teachers' productivity. Generally, the teachers had high level of utilization of electronic forms and records. However the teachers aged 45 years old and above had low level and the Bachelors' degree holders used it moderately. This is in concurrence with the study of Larupay (2005) which revealed that computers have reconfigured the world. Computers have become

so ubiquitous and have been integral part of almost every aspect of human existence. Consequently, people need to develop capabilities to operate them and maximize the benefits they bring.

It changed, for the better, the ways teachers do their work. The integration of technology in education is inevitable and the teachers, being the center of the delivery of learning need to accept it. It is stressed by Kumar, Rose and D'Silva (2001) that teachers' computer acceptance is an important factor to the successful use of computer in education.

As stated in Anderson (2010) that majority of the teachers hope to learn and use computers to their maximum potential especially in the field of education. Computer literacy to use electronic forms and records should be made possible when the elementary grade teachers have proper attitude towards attainment of computer utilization in accomplishing reports expected of them. This proven and supported by Borich (2010) in their statements that elementary grade school teachers were performing their tasks accordingly but they appeared further to enhance their knowledge on computers as to utilize electronic forms and records so that they can update the use of latest technology effectively. The trend today in the curriculum and education sector is changing, and many educators are expected to have computer awareness and utilize electronic forms and records for convenience and practicality of purpose.

The findings of the present study concurred Larupay's discovery (2005) that young, below 35 years old elementary grade teachers, were knowledgeable in the latest technology and they are very confident because computer subjects were included in the curriculum while the old elementary grade teachers showed that they were no longer interested on the said computers nor the utilization of electronic forms and records. Some literature also indicate that age has a strong impact on teachers' attitudes towards using computers in accomplishing tasks. Further studies suggest that younger teachers tend to show slightly more favorable attitude toward computer use than older teachers (Dupagne, & Kendi, 1992; Ertmer, Addison, Lane, Ross, & Woods, 1999). Other studies, however, report little or no difference in teacher attitudes on the basis of age (Koszalka, 2001; Kramer, P.E., & Lehman, 1990). In general, age appears to have an impact on attitudes and computers, the level of knowledge about computers, and willingness to use computers.

Generally, the elementary grade teachers in this research had very satisfactory level of productivity. This implies that they are aware and are doing what is expected of them. It is clear based on the findings that they can be productive whether they are classified as to certain categories such as age, civil status and educational attainment. Desimone (2009) justified this by saying that professionalism and personal productivity elevate the quality education and subsequently shape and implement teacher learning opportunities for the maximum benefit of both teachers and pupils. Hence, the ultimate goal of productivity is to improve the quality of life of man in particular and of the people in general.

The findings is along the thoughts of Erebaren (1986) when he revealed that that the teachers' level of productivity did not seem to have been influenced by or related to their salary, civil status, degree, experience or age. There were also significant differences noted in the extent of utilization of teachers' electronic forms and records when classified according to educational attainment for Master's Degree holder teachers have higher extent of utilization compared to those who were Bachelor's Degree holder teachers. This can be concluded that Master's Degree holder has general inclination towards improvement that they can be willing to embrace new trends and innovations in hope of continuous improvement in what they are doing. As articulated in Becker and Riel (2000) that relationships between professional engagement and teaching practices including computer use. Professional engagement has measured by the frequency that the teacher had informal substantive communications with other teachers and their involvement in specific peer leadership activities, mentoring, workshop, conference presentations and enrolment in post graduate education. The study found that teachers who regularly participate in professional interactions and activities beyond their classroom perform different than teachers who have minimal contact with their peers on profession. The more intensive involved teachers within the professional activities, the more likely they were to use computers more and in exemplary ways.

5.2 Recommendations

Based on the findings and conclusions, the following recommendations are offered:

1. DepEd Officials and policy makers should provide more training on utilization of the different electronic forms and records prescribed to improve the productivity of teachers from very satisfactory level to outstanding level. In addition, they should impose strict implementation of their given requirements to encourage teachers to use their prescribed electronic forms and records.

2. The school administrators are encouraged to make a venue for teachers to enhance their skills

in using gadgets like the computers. They will include teaching teachers how to use the available electronic forms and records during the monthly Learning Action Cell (LAC) sessions and in the In-Service Trainings. Local Government Units, Parents, Alumni Association of the School should be tapped to provide accessible computers to teachers so that they will be adept to use it and they can personally encode their own electronic forms and records. Furthermore, the school administrators are encouraged to have a constant monitoring and feed backing of the teachers' productivity. The teachers are encouraged to adapt the utilization of electronic forms and records for more productivity and convenience in the future since all records could be readily accessed, edited and manufactured in no time.

3. Teachers are great catalyst of change. In their hands lie the future of the youth. They could bring good change if they themselves are learned and updated of the latest trends. Thus, they should arm themselves with the utmost educational qualification. It is recommended that they pursue their Post Graduate degree and be the experts in using the electronic forms and records readily available for their use.

4. Researchers are encouraged to use the result of the study as foundation and basis to better improve the teachers' productivity in their work. Future researchers are encouraged to use the result of this study as reference for future studies.

References

Airasian, P. (1994). *Classroom assessment*. New York: McGraw Hill.

Anderson, J. (2010). *ICT transforming education: A Regional Guide.* Bangkok: UNESCO Asia and Pacific Regional Bureau of Education.

Allone's, N.A. (1997). *Ideology orientation and supervision beliefs: Its relationship to productivity among public elementary administrators in Iloilo*, (Unpublished doctoral dissertation, WVSU, Iloilo City).

Becker and Riel (2000). *Professional engagement and teaching practices*. Vol. 23. Allyn and Bacon.

Becker, H. & Ravitz, J. (1999). The influence of computer & internet use on teachers' pedagogical practices and perceptions. *Journal of Research on Computing in Education, 32, 4*.

Biton, A.P. (1997). *Team Relationship monitoring the Division of Iloilo* (Unpublished doctoral dissertation, WVSU, Iloilo City).

Borich, G. (2007). *Effective teaching methods: Research-based practice*. New Jersey: Pearson

Bruner, J. (1960). *The process of education*. Massachusetts: The President and Fellows of Harvard College.

Butler, (2000). *Library resources in education*. Enugu: ABIC Publisher.

Casiple, A. (2013). *Determinant of teaching effectiveness*. (Unpublished master's thesis, West Visayas State University, Lambunao Campus, Lambunao, Iloilo).

Cheryl, F. (2007). Factors that influence elementary teachers' use of computer. *Journal of Technology and Teacher Education,* 15, 2.

Corrigan, m. (1998). Employees involvement, psychological empowerment, and job performance in ana applied setting. iDissertation Abstrac International, 58(12).

DepEd Memorandum No. 329, s. 2010 *Guidelines on Giving Homework or Assignment to All Public Elementary School Pupils*

DepEd Memorandum No. 60, s. 2015 *Provision of the DepEd Electronic Class Record Template*

DepEd Memorandum No. 165, s. 2010 *Adoptation of the 2007 World Health Organization-Child Growth Standards (WHO-CGS)*

DepEd Order No. 8, s. 2015 *Policy Guidelines on Classroom Assessment for the K to 12 Basic Education Program*

DepEd Order No. 13, s. 2015 *Establishment of a Policy Development Process at the Department of Education*

DepEd Order No. 32, s. 2015 *Adopting the Indigenous People's Education (IDEP) Curriculum Framework*

DepEd Order no. 42, s. 2016. *Policy on Daily Lesson preparation for the K to 12 Basic Education program.*

DepEd Order No. 70, s. 2012 *Guidelines on the Preparation of Daily Lessons*

DepEd Order No. 2, s. 2015 *Guidelines on the Establishment and Implementation of the Results-Based Performance Management System (RPMS) in the Department of Education*

DepEd Order No. 4, s. 2014 *Adoptation of the Modified School Forms (SFs) for Public Elementary and Secondary Schools Effective End of School Year 2013 – 2014*

Desimone (2009). *Improving impact studies of teachers' professional development*: *Toward better conceptualization and measures*. Vol. 38 No. 3 181 -199 doi: 103102/0013189x0833.

Dick, Walter, and Reiser, Robert A. 1996. *Instructional planning*: *A guide for teacher*s. Boston: Allyn & Bacon.

Dilag, C. (1994*). Educational Leadership: Its Relationship to administrative productivity and organizational morale in Iloilo Schools* (Unpublished doctoral dissertation, West Visayas State University, Iloilo City).

Dubrin, A. J. (2000). *Human Relations: Interpersonal job oriental skill* (6th Ed). New Jersey: Prentice Hall

Erebaren, G. C. (1986). *Selected variables and teaching performance in tertiary level at West Visayas State University: A relationship study*. (Unpublished master's thesis, West Visayas State University, Iloilo City).

Gallego, M. P. (2009). *Principals' empowerment: Its relationship to teachers' effectiveness and pupils' performance.* (Unpublished doctoral dissertation, West Visayas State University, Lambunao Campus, Lambunao, Iloilo).

Giner, L. (2004). Computer Literacy for teachers.

Gos (1996). *Supervision for increased competence and productivity*. *Principles and practice*. New York: Harper and Row Publishers.

Heider, F. (1985). *The psychology of interpersonal relation*. New York: Johnson Wiley and Sons.

Johnson, J. A. (2000). *Computer tools for an information* age, 7th edition. C.E. Publishing, Inc.

Jacobs, S. (2000). *Why people procrastinate* (http//www.csum.edu/caps/pros.htm)

Jorjenson, D. & Griliches, Z. (1967). The explanation of productivity change. *review of Economics Studies,* 34(99):249-283.

Khanzer, M. A. (1994). Teaching that pays. *MOD* 25.

Kendrick, J. (1984). *Improving company productivity*: The John Hopkins University Press.

Kendrick, J. (1965). *Measuring company productivity: A handbook with case studies.* (No.89). The National Industry Productivity Board.

Kaur, P.(2010). *Current trends in teaching learning practice*. Retrieved from http://shodhganga.inflibnet.ac.in/bitstream/10603/13299/6/06_chapter%202.

Ko, H.Y. (2003*). A study of the construction of quality management system for elementary and secondarytTeachers in Taiwan*. (Unpublished Master Thesis, Institute of Education of National Sun Yat Sen University, Taiwan).

Larupay, S. (2005). *Computer literacy and teaching performance of teachers in the District of Lambunao East*. (Unpublished master's thesis, West Visayas State University-Lambunao Campus, Lambunao, Iloilo).

Lindong, R. (2015). *Professionalism and personal productivity of elementary grade teachers.* (Unpublished master's thesis, West Visayas State University, Lambunao Campus, Lambunao, Iloilo).

Mastura, M. (2004). *Employability skills and their relationship to job performance among government employees in Region XII.*

Mc Intyre, B. (2011). *Teachers' belief and practices regarding the role of technology in literary instruction: A mixed method study.* (unpublished dissertation, University of North Carolina, Charlotte).

Medley, D. M. (1979). *The effectiveness of teachers*. In P.L. Peterson and H.J. Walberg (Eds') Research on Teaching: Concepts, findings, and implicating, Berkeley C.A. USA. Macutchan

Misulis, (2003). Content analysis: A useful tool for instructional planning. *Contemporary Education* 69: 45-47.

Muckler, F. (1992). Selecting performance measures: Objectives versus subjective measurement. Human factors. *The Journal of the Human Factors and Ergonomic Society.* Vol. 34, No. 4.

Omur Akdemir (2008). An investigation of primary school science teachers's use of computer applications. *The Jeurkish Onine Journal of Education Technology, 7(4).*

*P*erez (2002). *Essentials in instructional technology*, published by Darya gaj, New Delhi.

Petrina, S. (2008). *Curriculum and instruction for technology teachers*. In press.

Ratvich, D. (2007). *EdSpeak: A Glossary of Education Terms, Phrases, Buzzwords, and Jargon.* Virginia: Alexandria Association for Supervision and Curriculum and Development.

Riggs, J. & Felix, G. (1993). Productivity measurement by objectives. *National Productivity Review.*

Saari, S. (2006). *Productivity, theory and measurement in business*. Espoo, Finland: European productivity conference.

Saskatchewan Education. 1991. *Instructional approaches: A framework for professional practice.*

Scrivener, J. (2005). *Learning teaching: The essential guide to English language teaching* (3rd Ed.). Oxford: Macmillan.

Stoner, J. and Wankel, J. (1995). *Management.* New Jersey: Prentice Hall.

Stoner, J. (1992). *Management*. Englewood Cliffs, New Jersey: Prentice Hall.

Stoner, J. and Wankel, C. (1987). *Management 3rd ed*. Englewood Cliffs, NS: Prentice

Stronge, J. 2007. *Qualities for effective teachers* (2nd Ed.). Virginia: Alexandria Association for Supervision and Curriculum and Development Hall.

Teach for America. 2011. *Instructional planning and delivery*.

Department of Education. Brief No. 4. Performance Standard 2: Instructional Planning. Richmonde, Virginia.

Techtrends (2001). Gender and Technology Awareness. Pre-Service Teacher Education

Thorndike E.L., (1950). *The psychology of intelligence*. New York: Routledge.

Vygotsky, L.S. (1978). *Mind in society: The development of higher mental processes. Massachussetts*: Harvard University Press.

Woodrow (1992). *School management and resources*. Owerri: New Africa Publishing Co. Ltd.