

Status of the Implementation of the Philippines' DepEd Computerization Program in Santa Rosa North District

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ABSTRACT

This study determined the status of implementation of the DepEd Computerization Program (DCP) in all 12 public elementary schools in Santa Rosa North District, Division of Nueva Ecija. It employed a descriptive-correlational research design. Frequency counts, percentages, and weighted means were used to describe the schools' profiles, the significance of the DCP, and its implementation status. Pearson's product-moment correlation was used to examine relationships among the variables, with questionnaire responses aggregated at the school level for analyses involving school-profile characteristics ($n = 12$). The study also developed a proposed action plan.

Findings showed that seven schools (58.33%) were at School-Based Management Level III or the mature level. Seven schools (58.33%) enrolled 94–288 learners, while one school (8.33%) enrolled 874–1,068 learners. Eight schools (66.7%) had computer laboratories, and ten (83.3%) had internet access. However, four schools (33.3%) had only one functional computer, while one school (8.3%) had 20. Computer-to-learner ratios ranged from 1:13 in two schools (16.7%) to 1:332 in one school (8.3%).

The teaching and learning processes were significantly related to transitional adjustments and to curriculum integration and adaptation. Although many schools had reached SBM Level III, several continued to experience difficulties in implementing DCP because of inadequate computer facilities, limited functional units, and insufficient internet access. The findings indicate that successful DCP implementation depends on the availability of computer laboratories, functional equipment, reliable internet connectivity, and teachers' readiness to integrate technology into the curriculum.

The study recommends computer literacy seminars and training for teachers and school heads, improved computer laboratories with proper ventilation and lighting, and an increased number of functional computers. These measures formed the basis of the proposed action plan for improving DCP implementation.

Keywords: DepEd Computerization Program, program implementation, computer facilities, curriculum integration, technology integration

INTRODUCTION

The aim of the Department of Education Computerization Program is to create teaching and learning environment that would bring a desirable change in teachers and learners such as making them more knowledgeable, skillful, innovative and globally competitive. Modern societies today need quality education. The capacity of an educational enterprise to provide the relevant learning experiences for learners in the dynamic and ever-changing world has driven schools to become responsive since the 21st Century education demands for better preparation of learners in the basic education. (Mangulod, Jr. 2017)

If learners in the basic education have strong foundation and knowledge in computer technology, then when they get to higher education, they will become innovative and competitive, and ultimately, they will become successful contributors for national development.

Department of Education (DepEd) Computerization Program provide the public schools with appropriate technologies that would enhance the teaching-learning process (DO 78, s.2010). However, UNESCO Institute for Statistics (April 2014) on their study of Information and Communication Technology (ICT) in Education in Asia data revealed that there are no data yet for public school teachers teaching using ICT and only two (2) percent of the public-school teachers are trained to use ICT.

Thus, this study was conducted to determine the status of the DepEd Computerization Program (DCP) in all 12 elementary schools in Santa Rosa North District. The primary goal of this study is to propose an action plan based on the findings. The implementation of DepEd Computerization Program was strictly analyzed based on the two major aspects, the transitional adjustments made during its implementation and the curriculum integration and adaptation made to implement the program properly. Thus, this study also aims to determine the effectiveness of computer integration in the lesson after the intervention was given. The study employed the Continuous Improvement Research Method that includes three (3) main stages: Assess, Analyze and Act, which will help the researcher to determine the effectiveness of the DepEd Computerization Program. In relation to this, the Department of Education describes activities necessary for the continued implementation of Computer Modernization Program and identifies the offices or units responsible for carrying out such activities.

Mastering ICT skills and utilizing ICT towards creating an improved teaching and learning environment is of utmost importance to teachers in creating a new learning culture. Many teachers lack the knowledge and skills to effectively use ICT tools in facilitating learning in increasingly ICT-pervasive learning environments. Some teacher-training programs have over-emphasized computer literacy while not enabling teachers to integrate technology with pedagogy and facilitate ICT-assisted interactive teaching-learning at classroom level to promote English Language teaching and learning. It was observed that in Santa Rosa North District, some of the 12 elementary schools do not have functional computers yet the ICT curriculum has already been implemented. Teachers' and students' performances are not maximized due to the lack of computer units, not to mention other reasons that affect the curriculum implementation. This research will present an overview of the status of the DepEd Computerization Program in Santa Rosa North District and then propose an action plan necessary to improve the implementation of the program.

THEORETICAL FRAMEWORK

The study of ICT in schools needs to consider the social processes that ICT supports during the circumstances of use, and how the ICT experience is integrated into the discourse of learning to develop higher order thinking skills.

Activity system was introduced as unit of analysis in order to deal with a task, the activity theoretical framework is adopted to demonstrate the intimate mechanisms that link ICT, learning and their sociocultural settings. Modern activity theory originated from Soviet cultural-historical psychology (Vygotsky, 1978; Leont'ev, 1981), which in turn was rooted in both eighteenth and nineteenth century classical German philosophy—from Hegel's idealism to the historical materialism of Marx and Engels, in which the concept of activity was extensively elaborated. Activity theory has been successfully used to analyze successes, failures and contradictions in complex situations without reductionist simplifications. It offers a set of conceptual tools that is applicable to various situations to understand the coupling of cognition and activity.

CONCEPTUAL FRAMEWORK

Taking into consideration the above theoretical framework of the study on the Status of the Implementation of the Philippines' DepEd Computerization Program in Santa Rosa North District in Santa Rosa North District in Santa Rosa North District, a paradigm of the study was drawn.

Figure 1 shows the paradigm of the study which signifies the independent variables as factors that were categorized into the presumed causes. These independent variables include schools' profiles and significance of DepEd Computerization Program. Schools' profiles were described in terms of number of learners enrolled, number of teachers, educational attainment of teachers, number of school computer

laboratories, number of teachers teaching TLE-ICT, number of functional computer units, number of computer units with internet connections and ratio of computer units to learners, while the DepEd Computerization program was described in terms of its significance to the Teaching and Learning Process.

Research Paradigm

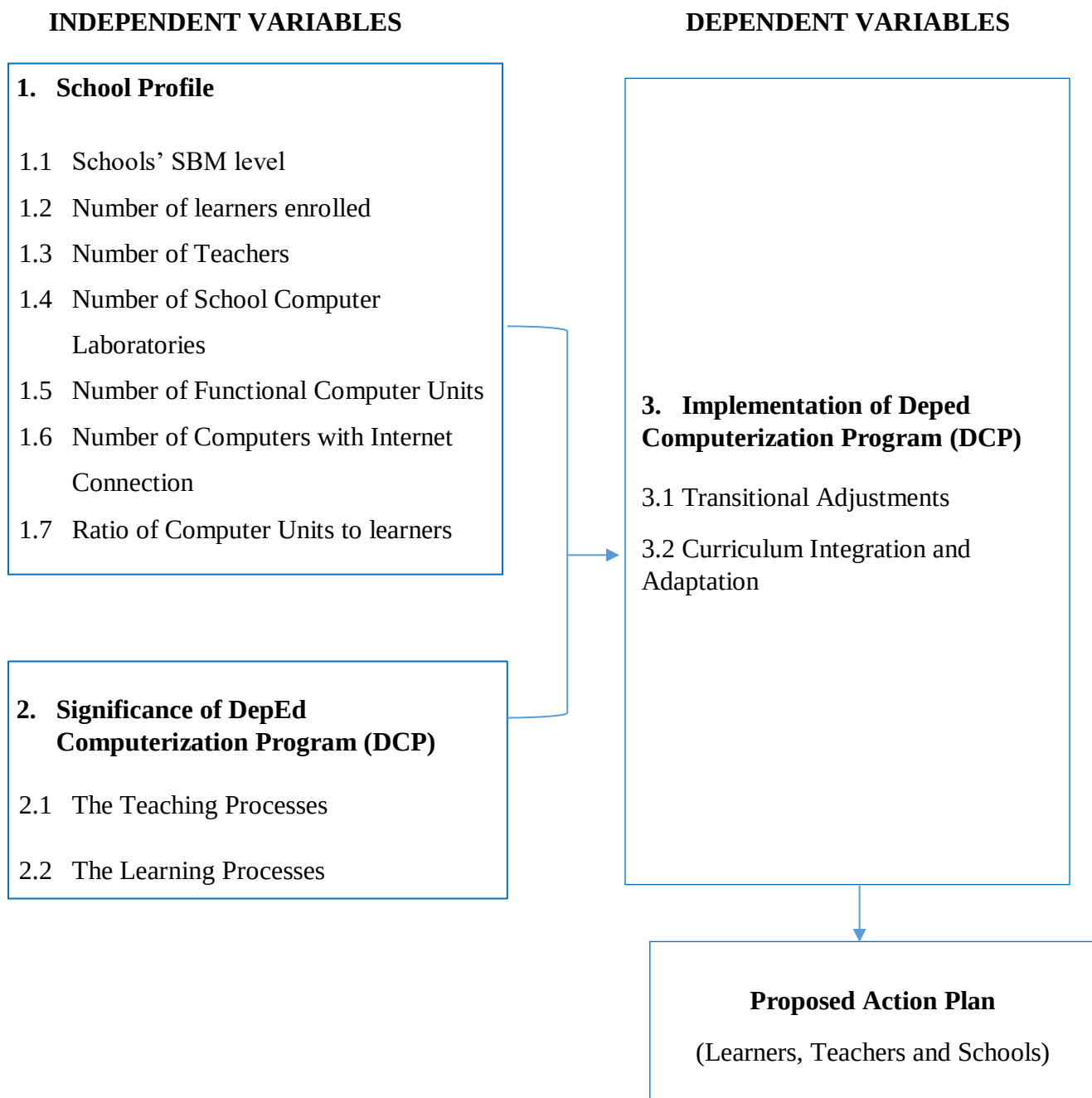


Figure 1: Research Paradigm

Implementation of DepEd Computerization Program was described in terms of transitional adjustments and curriculum integration and adaptation.

Gathered information from the schools' profiles, significance of DepEd Computerization Program and the Implementation of DepEd Computerization Program were used as basis to come up with a proposed action plan as indicated in the dependent variable box.

Statement of the Problem

The purpose of this study is to determine the Status of the Implementation of the Philippines' DepEd Computerization Program in Santa Rosa North District in Santa Rosa North District in Santa Rosa North

District in Santa Rosa North District as basis for an action plan for the twelve elementary schools in Santa Rosa North District.

Specifically, it sought to answer the following questions:

How may the schools' profiles be described in terms of:

- Schools' SBM levels;
- Number of learners enrolled;
- Number of Teachers;
- Number of School Computer Laboratories;
- Number of Functional Computer Units
- Number of Computers with Internet Connections and
- Ratio of Computer Units to Learners?

How may the DepEd Computerization Program (DCP) be significant in terms of:

- the Teaching Process and
- the Learning Process?

How may the implementation of the DepEd Computerization Program (DCP) be described in terms of:

- Transitional Adjustments and
- Curriculum Integration and Adaptation?

Is there any significant relationship between the schools' profiles and the significance of DepEd Computerization Program (DCP)?

Is there any significant relationship between the schools' profiles and the implementation of DepEd Computerization Program (DCP)?

Is there any significant relationship between the significance of DepEd Computerization Program and the implementation of DepEd Computerization Program (DCP)?

What action plan may be proposed based on the findings of the study?

Hypotheses

The study is guided by the following hypotheses:

- There is no significant relationship between the schools' profiles and the significance of the DepEd Computerization Program (DCP).
- There is no significant relationship between the schools' profiles and the implementation of DepEd Computerization Program (DCP).
- There is no significant relationship between the significance of DepEd Computerization Program (DCP), and implementation of DepEd Computerization Program (DCP).

Scope and Delimitation of the Study

This study focused on the Status of the Implementation of the Philippines' DepEd Computerization Program

in Santa Rosa North District in Santa Rosa North District in Santa Rosa North District in Santa Rosa North District and was conducted during the school year 2019-2020 in 12 elementary schools of Santa Rosa North District. The respondents of the study are all teachers including school heads in Santa Rosa North District, Division of Nueva Ecija. The respondents were given a brief and informative oral overview of the nature and purpose of the study before the administration of the questionnaire.

The respondents of this study were chosen using the total enumeration technique. Respondents who were appropriate for the study were chosen based on the research problem (Adler, 2010).

Significance of the Study

The findings of this study may be significant to the following:

Curriculum Planners. Results of the study may point toward the development of a more creative way of utilizing computer technology in the teaching-learning process which can give emphasis on both conceptual and procedural components in understanding the performance level of the teachers in teaching TLE-ICT.

School Administrators. Results of this study can help them to formulate programs, trainings and workshops for the teachers to upgrade their competencies in teaching the lessons and in preparing instructional materials that can strengthen their skills and ability in using computer technology.

Teachers. They may be guided by this study on how to give instructions to students. teachers may be able to examine their teaching practices, materials, resources and assess the extent to how they can help their learners perform well in this generation of technological revolution.

Learners. Results of the study may help students increase their knowledge and skills in dealing with new lessons and new subjects anchored in computer technology. They may also realize that learning the lesson will develop their higher order thinking skills particularly on critical thinking and solving problems.

Researchers. It could help them enhance and develop better researches on the areas of computer education and Information and Communication Technology. This could also be a basis for future studies.

Future Researchers. The results of this study may be used as a reference for future researches that involve DepEd Computerization Program. The data from this research can be used for future comparisons as the Department of Education improves the quality of its Computerization Program.

Definition of Terms

The terms used in this study are operationally defined to enhance better understanding and provide clarity of ideas that these terms represent.

Academic Achievement. This term refers to the respondents' academic performances in school like passing of requirements, undertaking tests, performing assignments, and participating in graded recitation for them to pass all the subjects.

Action Plan. It refers to the proposed plan to improve the performance of schools, teachers and learners based from the results of the study.

Computer Application. This refers to a software program that runs on the computer. Web browsers, e-mail programs, word processors, games, and utilities are all computer applications.

Computer Education. This term refers to the study and development of computer skills which are crucial to the 21st century era.

Computer Laboratories. These are spaces which provide computer services to a defined community. Computer laboratories are typically provided by academic institutions to learners who attend the institution.

Computer Literacy. This term applies to the knowledge and ability to utilize computers and related technology efficiently, with a range of skills covering levels from elementary use to computer programming and advanced problem solving.

Computer Software. This term applies to the collection of data or computer instructions that tell the computer how to work.

Computer Units. These are the functional computer machines used in the teaching of TLE-ICT.

Curriculum Integration and Adaptation. This refers to the implementation and adaptation of the Information and Communication Technology curriculum through the DepEd Computerization Program.

DepEd (Department of Education). This is the executive department of the Philippine government responsible for ensuring access to, promoting equity in, and improving the quality of basic education.

DCP (Department of Education Computerization Program). This is the program implemented by the Philippine government providing the public schools with appropriate computer technologies that would enhance the teaching-learning process.

ICT (Information and Communication Technology). This is the subject area under the TLE curriculum that focuses on the integration of computer technology in basic education subjects.

Learners' Performance. This term refers to the actual grade obtained by the learners in the previous school year in each subject area as reflected in their respective report cards.

Learning Process. It refers to the learning development of the learners throughout the implementation of the DepEd Computerization Program.

Number of Teachers. This applies to the number of teachers teaching in the Elementary Schools of Santa Rosa North District

Respondents' Profiles. These are the teachers' socio-demographic characteristics such as age, sex and educational attainment.

SBM Level (School Based Management Level). It refers to the schools' level of performance in the School-based management.

Schools' Performance. This term relates to the performance level of the selected schools in terms of achievement rate, drop-out rate and participation rate.

Schools' Profiles. The profiling of the schools in terms of SBM level, number of teachers, educational attainment of teachers, level of teaching performance using IPCRF, position of School Heads, and school facilities are of important considerations in this study.

Teaching Process. This term refers to the techniques and strategies used by the teachers to implement and execute the DepEd Computerization Program.

Technical Issues. These are issues referring to the technical proficiency and the provision of both technical infrastructure and technical support.

TLE (Technology and Livelihood Education). This term applies to the subject area that was designed to provide students with a strong foundation on livelihood and technology related activities.

Transitional Adjustments. These are the problems and challenges met by the school heads, teachers and learners during the transitional adjustments at the time of the implementation of the DepEd Computerization Program.

REVIEW OF RELATED LITERATURE

This chapter presents the reviewed related literature and studies that were published and conducted in the Philippines and abroad which gave the present study relevant information and background.

Schools' Profile

SBM level

School-Based Management (SBM) was implemented between 2003 and 2005 in 23 districts participating in the Third Elementary Education Project (TEEP) supported by the World Bank. The project provided funding for school infrastructure, training, curriculum development, and textbooks. SBM was introduced as an integrating framework for obtaining school-level project inputs and building school capacity for education planning and program implementation beginning in school year 2003-2004. This program also allows the Department of Education to determine the schools that needs the necessary funding to implement properly the DepEd Computerization Program. Schools participating in SBM were required to design a five-year School Improvement Plan (SIP) in partnership with parents and the community using data such as student achievement and students' learning needs assessments, with the school principal or head teacher leading the process. Based on the SIP, schools developed an Annual Implementation Plan (AIP) at the beginning of the school year and a report card to be shared with the community at the end of the school year. Project inputs for infrastructure, training, textbooks, and so forth, were partially based on the SIP. Principals and head teachers received training in leading the development and implementation of the SIP and the AIPs in collaboration with teachers and key members of the larger community. SBM (School-Based Management) schools also received funds for maintenance and operating expenses directly in cash rather than in kind, as had been the case previously. These cash funds could be used by the schools based on their AIP. The cash allocation was based on a formula that provided each school with a flat amount of funds plus a prorated figure based on the number of student and teachers as well as other criteria, such as percentage of indigenous student population in the school. Schools not participating in the SBM received no SBM-related training and no cash funds, and they were not required to develop SIPs and AIPs.

The SBM was designed to improve student outcomes through two main venues: by empowering the school community to identify education priorities and to allocate the school maintenance and operating budgets to those priorities (such as curriculum enrichment programs); and by enhancing transparency and accountability through the annual implementation plans and school report cards. However, the SBM program articulated no explicit assumptions regarding the timeframe within which improvements in student achievement were expected to take place.

Systematic data on the level of uptake and implementation of the key features of the reforms are also not available. The SBM training, funds, and requirements were rolled out in three batches and eventually covered almost all (84 percent) of the 8,613 schools in the 23 project districts. The first batch comprised 1,666 schools in 2003-2004, largely because they were perceived to be more capable, although no explicit assignment mechanism was designed. The next batch of 2,700 schools was targeted for SBM rollout in 2004-2005, and another batch of 1,529 was included in 2005-2006.

School-Based Management (SBM) is a strategy to improve education by transferring significant decision-making authority from state and district offices to individual schools. SBM provides principals, teachers, students and parents' greater control over the education process by giving them responsibility for decision about the budget, personnel and curriculum. Through the involvement of teachers, parents and other community members in these key decisions. SBM can create more effective learning environment for children. (Llego, 2016)

To achieve EFA objectives 2015 Department of Education is pursuing reforms under BESRA. Trust 1 KRT1 is SBM. SBM underscores the empowerment of key stakeholders in school- communities to enable them to actively participate in the continuous improvement of the schools toward the attainment of higher pupil/student learning outcome.

A decision as to where and into what aspect of school management and processes a school and its stakeholders may start to build upon as prescribed in the SBM scale of practice make assessment imperative. Malano (2012) pointed out that assessment is also important to determine the directions of improvement to attain the mature level of SBM (School-Based Management) practice.

To ensure that SBM (School-Based Management) works toward improved learning outcomes, which is the ultimate goal of school-based management a three-scale of practice has been devised.

Level 1 STANDARD refers to compliance of a school with the minimum requirements for securing and managing inputs establishing appropriate structures and mechanisms and improving processes that affect instruction and student's achievement in order to produce the desired levels of output that lead to improved learning outcomes.

Level 2 PROGRESSIVE intensifies mobilization of resources and maximizes efforts of the school to achieve desired learning outcomes.

Level 3 MATURE goes further by maximizing efforts of the school and the community stakeholders to achieve higher learning outcomes. (Assessment of School-Based management practices, 2009)

Jogthong & Pimolbunyong (2010) revealed in their study that Participatory Action research yields effectiveness and positive results in the development of school-based management and teacher professions. The comparative nature and supportive environment of this research type process allow participants to work with the researchers spontaneously, resulted in positive changes within the organization.

In the study of Brandao (2013) the restructuring with SBM was implemented to a minimal degree at the Elementary school of Florida County. The results showed that the effects of restructuring were varied and included both positive and negative findings. For some teachers, involvement enhanced commitment to the organization and spurred them on to further efforts, while for most respondents restructuring activities were perceived as impositions that made it difficult to balance classroom and SBM responsibilities. Respondents also revealed that they doubted the potential of SBM as a means to improve the quality of education at Florida County schools or as process for producing significant academic achievement.

Number of Learners Enrolled

With over 700 million illiterate adults worldwide, governments in many developing countries have implemented adult literacy programs. Typically, these programs have low rates of success partly because the quality of teaching is heterogeneous. Standardization of teaching provided by computer-aided instruction might be a solution. However, there is little rigorous evidence of the effectiveness of computer-based adult literacy programs in delivering high-quality literacy and numeracy in the developing world. To fill this void in the literature, we study the impact of a computer-based adult literacy program, Tara Akshar Plus, on the literacy and numeracy skills of previously illiterate adult women in the north Indian state of Uttar Pradesh. Through a randomized control trial, we measure learning outcomes with individual-level literacy and numeracy tests and find statistically significant positive impacts of this computer-aided program on literacy and numeracy outcomes of women who undergo the TARA Akshar Plus program—relative to the control group. The effects are statistically significant but small in magnitude for women who were entirely illiterate prior to the program. The learning impacts are substantially larger for learners who knew at least a handful of letters at the beginning of the program. We compare the improvement in learning to that of another adult literacy and numeracy program. We conclude that TARA Akshar Plus is the more effective of the two, but the literacy and numeracy level achieved are not large enough to make many entirely illiterate learners become functionally literate.

The overwhelming majority of the world's 757 million illiterate adults live in developing countries (UIS, UNESCO, 2015). Adult literacy programs aim to improve the skills, and hence the earning potential and other socioeconomic outcomes, of illiterate adults. However, traditional adult literacy programs, typically operated by governments, have been largely ineffective due to low enrollment, high dropout rates, and rapid

skill depreciation (Abadzi, 1994, Abadzi, 2003, Ortega and Rodríguez, 2008, Oxenham, 2002). Recent advances in adult literacy programs have sought to integrate modern information and communication technology (ICT) into effective teaching methods (for an insightful overview, see, Wagner & Kozma, 2005). The use of modern ICT, which comprises computers, mobile phones, and tablets, could improve the quality and effectiveness of learning with the aid of interactive tools, the use of animation, and the implementation of effective teaching principles (Iftekhhar & Hyeon, 2016).

There is little rigorous evidence of the effectiveness of computer-based adult literacy programs in delivering high-quality literacy and numeracy teaching in the developing world. (Berger (2001) provides a review of the effectiveness computers in adult literacy classes in the US.) By rigorous we mean evidence that allows for the causal attribution of the observed effect to the literacy program, which at a minimum requires a deliberate attempt to account for confounding factors, for example by creating a control or comparison group.

Number of Teachers

Information and Communications Technology (ICT) in the Philippines is a milestone in the educational system. It opens a wide variety of opportunities both for teachers and students. Transferring of information, data collection and researching are the multiple benefits that people can get from ICT, but still it is a dream to many. Most public schools in the Philippines have no ICT facilities and most teachers are not ICT literate which results in the poor students and school's performance.

Schools project is one of the flagship projects of the Commission on Information and Communications Technology (CICT) which supports the efforts of department of education to integrate ICT in education. Its long-term goal is to contribute to the efforts of the Philippine government in bridging the digital divide by developing an educational digital network that equips all public high school teachers and students with ICT literacy as well as provide them access to relevant digital content and applications in education that they can use to make learning effective.

Schools focus on integrating ICT in education towards strengthening classroom learning and instruction by expanding access to various sources of information. In so doing, the project hopes to enhance the capability of public high school students throughout the Philippines to successfully compete with their peers for jobs and other opportunities in the expanding global knowledge economy.

The CICT, through its eQuality program for State Universities and Colleges [SUCs] such as Tarlac College of Agriculture (TCA), joined hands in implementing the iSchools project, from choosing a pilot site, social preparation activities, deployment, capability building for teachers, and progress monitoring.

Under the iSchools project, schools were provided with twenty [20] computer units, server, printer, projector, air-conditioning unit, wireless router, one-year free internet connections, as well as relevant educator training in the use of ICT in education. Strengthened partnerships with Local Government Units (LGU), Parents Teachers Association [PTA] and other local educational stakeholders are also part of the components of the project.

The iSchool's project has ended its implementation, hence, evaluation of the project is deemed necessary. Evaluation of this project is an integral part of the development process to determine the effectiveness of the program which can be the basis of improving future activities.

Number of School Computer Laboratories

The Philippines is one of the many developing nations that have turned to information and communication technology (ICT) as a tool to improve teaching and learning. Unfortunately, implementation suffers from several shortcomings: the absence of information on how ICT is actually used; a lack of coordination between public and private sector efforts; and insufficient teacher preparation.

Education in developing countries takes place under circumstances that are substantially different from those in developed countries. The poorest countries spend the least – absolutely and proportionately – on non-salary related educational expenditures. In the early 1980s, while African countries allocated only 3.6% of their education budgets to classroom materials, and developing countries in Asia spent 8.8%, industrialized countries spent 14.4% on books and learning aids. Lewin estimated that, while the richest countries spend as much as US\$430 per child on non-salary educational expenditures, the poorest countries disburse approximately US\$5 per child, of which US\$1 or less goes to information and communication technology (ICT). It is, therefore, no surprise that in developing countries, school buildings commonly do not have concrete flooring, furniture, electricity, and water, and there is virtually no equipment for science, art, and other practical subjects.

The Philippines is a developing country in Southeast Asia whose educational system shares many of the same problems and limitations as those of its fellow developing nations. Some provincial schools lack chairs and tables, blackboards, and laboratory equipment. Some do not have electricity and water. There is a scarcity of learning aids in general. In contrast, American students have 140 times more reading material available to them than their Filipino counterparts.

Despite these conditions, the Philippines along with other developing countries in Asia, Africa, and South America are generally interested in educational technology, particularly in ICT, hoping that their educational systems reap the pedagogical benefits associated with it. Drill and practice or tutorial software, for example, individualizes instruction and provides students with immediate feedback. Students can proceed at their own pace. Internet connectivity enables students to access remote sources of information. It exposes them to diverse expert opinions and makes them aware that they are part of a global community. There is evidence that multimedia learning environments, simulations, and computer-based laboratory analysis tools foster superior math, science, and language skills. Researchers characterize the ICT-infused classroom as highly interactive learning environments. Communication and collaboration between and among students, teachers, and outside experts occurs through formal presentations, cooperative learning activities, and informal dialogue in large groups, small groups, or on a one-on-one basis. Finally, some researchers believe that ICT fosters self-direction. Students learn to initiate their own learning by asking probing questions and seeking out answers using a variety of resources.

Looking at the importance of school environments through the lens of Maslow's theory of motivation, there may be some evidence that without meeting basic needs it could be difficult for students to make an effort to concentrate their attention on developing academic patterns and digesting the academic materials they are being presented. (Ford 2015). As Valdez (2012) pointed out that it is very important that the management will always make sure that facilities and services are always available, adequate and in good running conditions. Tanner (2009) stated that significant relationships were found in high scores on all three design elements (movement and circulation, day lighting and views) and test score result. However, in the study of Picus, Also Hamilton & Ekeke (2013) revealed that basic ICT facilities like computers are unavailable, students are unable to afford personal laptop. This has grossly affected e-learning and e-communication between staff and students. It is recommended that there should be provision of student workstation and the inculcation of ICT in the curriculum to enable students to be computer literate.

Limon (2016) revealed that insufficient facilities were negatively impacting student performance and achievement, and the concerned administrations take no significant action in addressing this educational issue. Since, lack of educational facilities was proven to pose serious ramifications on student performance and achievement, stakeholders should closely look into procedures that focus on facility support and management in the field of TLE. The focus of the students may not be on the lessons if the classrooms are not clean. If buildings feel unsafe to the students because of broken fixtures, graffiti etc, the students may be unable to concentrate on the academic goals in front of them.

Number of Functional Computer Units

To support teaching and learning, as well as improve overall education management, a variety of ICT-assisted instructional approaches may be implemented, ranging from the use of radio or television to

computers, Internet and newly emerging mobile devices. While newer battery-operated ICTs are emerging, in addition to mobile devices that may be recharged off-site, the majority of ICTs including television, computers and the Internet continue to require a more stable energy source. To summarize, the integration of ICT into schools requires electricity (e.g. grid/mains connection, wind, water, solar or fuel-powered generator, etc.) that is regularly and readily available.

In most developing countries, the key determining factor for electricity is location. Rural, remote and mountainous regions are frequently neglected in building up national infrastructure, resulting in a lack of power supply to support ICT in education. For example, implementing ICT in education in Pakistan is a significant challenge given that just 31% of rural primary schools are connected compared to 53% in urban centers (Pakistan, 2010; Pakistan, 2012). Moreover, even if schools are connected to an electrical grid, in many countries power surges and brownouts are common in both rural and urban areas further impeding the reliable usage of ICT.

Telecommunication facilities are another basic element which help to build the educational and administrative capacity of schools. Defined as a fixed telephone line, cable connection, mobile phone or other sustainable communication technology that connects a school's terminal equipment to the public switched telephone network, or other telecommunication network, and which is intended for pedagogical or administrative purposes, telecommunication facilities can be used for communication between teachers with students, parents, various service providers to the schools, local education authorities, and other administrative organizations. Telecommunication facilities may also provide the requisite infrastructure to provide various types of Internet connectivity. Fixed telephone lines can provide both narrowband and broadband Internet, while mobile telephones can provide varying levels of broadband connectivity through 3G or 4G technology. Generally, faster than mobile broadband Internet, wired connections (including ADSL, cable, fixed wireless, fiber optic cable, satellite, etc.) allow for upload and download broadband speeds that are faster.

In order to gauge national capacity to support the integration of ICT in education, measuring the share of educational institutions with electricity and a telephone communication facility provides basic information for policymakers to assess current gaps in infrastructure, as well as help inform decisions about which ICT tools would be appropriate for short- and longer-term planning.

Number of Computers with Internet Connections

Today, computers and the Internet, has become an important element in the life of the individual of all ages. Especially the young generation carries out a lot of work with the help of a computer. Computer and Internet has become an indispensable passion for them. Young generation use the computer and the internet more successfully and faster than previous generations do. One of the main reasons for this is that the young generation have been born in a huge world which is equipped with information technology. Although the youth use information technology extensively, they must be aware and be oriented with the proper, effective, relevant, and accurate use of computers and the internet. Various studies are available for this purpose in literacy. This study has performed a research on computer and internet use behaviors of Tekirdag Technical and Vocational High School, IT and Electric-Electronic Technology Field 10th grade students.

The information and its usage which have an important place in the life of the youths either in the schools or out of the schools are subjects of many questions and studies. The positive and negative sides, advantages and non-advantages sides of the usage of the information technologies had been subject for the discussions and investigations for a while. The behavior oriented to the usage of the internet, appearances, attendances, social and academic life of the individuals who have different specialties, are investigated. For example, it is determined on the study of Altug et al. (2011) that the successes of the high school students are reduced as the rate and frequency of the usage of the computer are increased. It is indicated by these and similar results that such investigations are important and remarkable. The aspects of the youth against these concepts and the time that they spend in their life are the parameters to form the world in the future.

Whereas, there were no computers which are made in the past, at the houses of many students, according to the investigations. It is observed that almost all have computers and connections to the internet in these students' houses. As a result of the investigation which was made by Boru(2001), "the students tend to use computer and internet, but it is understood that they prefer mostly to chat and communicate".

The psycho-social status of the students are researched, and the role and importance of the information technologies in their lives are investigated. Therefore, the matters relating to what can be made for education, the approaches which can be developed, integration of the computer and the internet with the education, are emphasized.

Ratio of Computer Units to Learners

In the past two decades, Information and Communications Technology (ICT) has progressively acquired a prominent role in teaching and learning. Most countries have made huge public investments in the purchase and maintenance of ICT related educational devices. As a result, the majority of developed countries have reached high rates of school ICT access.

In 2009, 97% of the teachers in public primary and secondary schools in the US had one or more computers located in the classroom every day (93% of them with Internet access), and the ratio of students to computers in the classroom was 5.3 to 1(Gray, Thomas & Lewis, 2010). In the same year, in Europe, at least 75% of the students had the availability of one computer for up to four students. The latest EU-survey on ICT in schools confirms that ICT has become more pervasive also in the European countries. In the school year 2011–2012, there were approximately twice as many computers per one hundred students in secondary schools compared to 2006 data, and the share of schools with websites, e-mail for both teachers and students and a local area network has been steadily increasing at all levels of education (European Commission, 2013).

In view of the large public outlays for ICT in schools in many countries, there has been an increasing research interest aimed at identifying the effect of ICT at school on learning, and scientific literature developed. Most of these studies focus on the mere availability of ICT equipment in schools or on the use of computers (including specific software) to teach.

The Teaching Process

Over the past decade the use of computers and new technologies has become an important aspect of teaching and learning. Computers have enabled the teaching community to redefine some of the strategies and concepts of teaching and learning. This has been done in terms of enriching classroom activities, reorganizing course structures, and providing learners with more autonomous as well as more learner-centered opportunities for learning. Furthermore, teachers have been looking for an increase of the quality of their teaching with the help of new and modern information technologies. Thus, the pivotal aim of this paper is to discuss how the utilization of ICT can help students to achieve better learning results and performances. (Gokhane, 2016).

Tazci(2009) also stated that one of the factors that determine educational development and innovation, in general, is teachers as they are the ones to use the ICT investments for educational development. Technology does not have an educational value in itself. It becomes important when teachers use it in learning-teaching process although there are some who claim that the presence of technology in the classroom creates a pressure and requires effective use (Kozma, 2003).

The Learning Process

In the last few years, there have been many changes in the European Universities, whose trigger was the Bologna Treaty (1999). According to the Ministry of Education, the new European training model focuses on achieving effective learning on the part of the student, encouraging self-learning.

The changes that the European Higher Education Area has introduced in the universities imply new conceptions in the teaching and learning, as well as new educational resources. One of these resources are ICT (Information and Communication Technologies), whose inclusion in the higher education classrooms is demanding a change of mentality in both teachers and students (Esteve, 2009).

According to the study by Cobo (2009), ICT is defined as: “Technological devices (hardware and software) that allow to edit, produce, store, exchange and transmit data between different information systems that have common protocols. These applications, which integrate computer media, telecommunications and networks, enable both interpersonal (person to person) and multidirectional (one to many or many to many) communication and collaboration. These tools play a substantive role in the generation, exchange, diffusion, management and access to knowledge”.

Information and communication technologies are becoming increasingly important and relevant in all areas of social life, but particularly, in education. This has allowed students a channel of communication that has changed the way to train them. Thus, in the pedagogical field, ICT, as Cabero points out, are becoming a key element, finding us difficult formative actions that are not supported by different technological means (Cabero, 2007; Cabero-Almenara et al., 2010).

The incorporation of ICT produces the so-called educational innovation, in other words, integrates new developments that produce changes to improve the learning process. In this way they try to reduce the time spent by students in passing a subject, acquiring knowledge, skills and new abilities (Bhuasiri, Xaymoungkhoun, Zo, Rho, & Ciganek, 2012; Bono, Arnau, & Blanca, 2006; Fidalgo, 2007).

According to Yazon, Mayer-Smith, and Redfield (2002), the interesting thing about ICT is how they should be used in university education and to what extent they transform teaching experience. Some examples of this influence are the study carried out by Prendes-Espinosa, Castañeda-Quintero, and Gutiérrez-Portán (2010) that analyses competences for the use of ICT in future teachers, or the development of questionnaires such as that formed for teachers by Fernández, Fernández, and Cebreiro (2016). The research realizes by Lareki, Martínez, and Amenabar (2010) provided results about the necessary training in ICT that the faculty requires for their teaching as well as for conducting research.

Transitional Adjustments

Over the past decade the use of computers and new technologies has become an important aspect of teaching and learning. They have enabled the teaching community to redefine some of the strategies and concepts of teaching and learning. This has been done in terms of enriching classroom activities, reorganizing course structures, and providing learners with more autonomous as well as more learner-centered opportunities for learning. Furthermore, teachers have been also looking for an increase of the quality of their teaching with the help of new and modern information technologies. (Klimova, 2012)

Information and communication technologies (ICT) play a proven critical role in enhancing the quality of education. They are particularly important in helping teachers and students to perform more effectively. To make the best use of ICT, teachers must be equipped with adequate ICT competencies. In the process of integrating ICT into education, both ICT competencies of teachers and how they perceive the role of ICT in their teaching/learning processes play key roles. Analysis, design, development, implementation, evaluation, and management of ICT in education require diversified competencies and knowledge (Kozma 2002, pp.1-6). Today, improved communication technology has made time and space less complex. It could be observed that this modern age is the age of information explosion in which an average individual wants to explore the information system. Thus, the ability for timely acquisition, utilization, communication and retrieval of relevant and accurate information has become an important attribute for better teaching-learning process. (Adebayo, 2008). The new technologies have the potential to support education across curriculum and provide opportunities for effective communication between teacher and students in ways that have not been possible before. ICT in education has the potential to be influential in bringing about changes in ways of teaching (Dawes, 2001). Teachers contribute toward the base of the education innovation, therefore, ICT competencies of teachers in primary schools should be seen as an invaluable prerequisite to facilitate

teaching and learning in this modern era of information and technology. ICT is not only a means of realizing the educational goals but also an important factor in a complete restructuring of the educational system, introducing new interactive and participatory models of education, new educational pedagogy, continuous and lifelong learning. Macedonian context of computerization and digitization of education intensively developed after 2002 when the country received the first Chinese donation, which allowed a certain degree of popularization of ICT in education. Starting in 2003 through the e-school project teacher training, the use of ICT was conducted in two phases. Changes that occurred with the intensive introduction in education resulted in a need to develop national educational policies and strategies that will contribute to the social and educational development. In 2005 the draft program was created for the development of ICT in education (2005-2015) which covered the process of computerization and digitization of education. Macedonia entered the world of ICT innovation with the introduction of the program "Computer for Every Child" initiative and investment by the Government of the Republic of Macedonia to modernize Macedonian education. This project provides a computer for each child, software solutions and tools for each subject, advanced ICT skills among teachers and students, a national system of testing students and the interactive online teaching. In the academic year 2009 to 2010, primary schools were equipped with portable Classmate PCs for every student from the first to the third grade. In 2010 teacher trainings were conducted for Edubuntu operating system, the programs were introduced for integration of mathematics and sciences, and the ToolKid program and SSTC using "thin clients". Aside from the software electronic grades that were introduced, training for class teachers for the program and Green G Comprise suite junior were also attached. Starting from the academic year 2013 to 2014, all teachers were required to integrate at least 30% of ICT in the curriculum.

Curriculum Integration and Adaptation

In the eighteenth century, the industrial revolution, radically transformed life at a planetary level. The three phases of the industrial revolution were continued with the fourth revolution. Quick advances in Information and Communications Technologies (ICTs) drafts nowadays something similar with the extent of the internet, virtual environments, robotics, and artificial intelligence; however, new changes are probably coming up more, and more promptly, shaping a new industrial revolution of greater disruptive force than it could be initially expected. As World Economic Forum stated, in 2005, there were just 500 million devices connected to the Internet. Today there are 8 billion connections, and it is estimated that by 2030 there will be 1 trillion (World Economic Forum – WEF, 2016). The innovation era is now, and it should start focusing on people. Despite the robotic importance on new production systems, the human capital is decisive within the workforce, and, in a fast-changing knowledge economy, 21st century digital skills drive organizations' competitiveness and innovation capacity (van Laar et al., 2017). In this context, universities have to face disruptive environments due to ICTs revolution, both as teaching and learning tool and as a new and crucial subject to teach for giving an integral formation to the students, who are mainly the so called "millennial generation" (the first generation borne immersed in new technologies). Davies et al. (2011) pointed out that success in the labor market is linked to the new media literacy and virtual collaboration, since they are two of the crucial skills that will be needed in the future workforce. In this field, younger individuals are the best trained to becoming technology-savvy employees.

The millennials are strongly skilled in these new communication and information technologies and they feel comfortable in virtual environments. These ICTs skills give them a comparative advantage for social networking and their confidence on virtual collaborative atmospheres gives them the opportunity of integrating these productivity-enhancers into their work. In this sense, their particular innate conditions are in favor to their fast adaptation to technological changes and to quickly familiarize to self-learning digital environments.

The changing pedagogical models and the incorporation of knowledge innovation is essential for universities' survival. Milosevic et al. (2015) stated that Global network for higher education is not a fantasy and that leading scientists have begun to implement elements of research in teaching, because they know that universities and their colleges cannot exist separately from the social and technological environment, that is to say, from the current moment, so they must make progress in wider educational strategy of knowledge production. The main goal of universities is providing a solid and operative formation to their

students, which lead them to achieve success in their personal and professional lives, as well as bring the results back to society in terms of general welfare. One main step for achieving this goal is to give to the university students' actual opportunities of getting a good job, since current trends reveal that it is not only the quantity of jobs that matters but also the quality of jobs as few youth have access to productive employment opportunities that provide them with a decent wage, job security and good working conditions (International Labor Organization, ILO, 2017).

Youth employment remains a global challenge and a top policy concern worldwide. The attendance to the university makes individuals more competitive in the labor market, since university-educated youth are more likely to attain their desired jobs on their first try. The changes introduced by the fourth revolution, however, have to be assumed for a complete success at the university level. Growing up in the center of fast technological changes and globalization, today's youth are already experts on walking through unpredictable times and ready for assuming all kinds of vicissitudes (Elder and Rosas, 2015). Since youth employment is a top policy concern, this paper deals with the importance of ICTs skills in getting a job.

The education has ever been a key factor for achieving an employment. In the fourth industrial revolution era, the advances in technology are making a broader range of non-routine tasks automatable, with computers replacing mostly low-income low-skilled workers in the coming decades (Citi, 2016). The greater the level of education of a country, the higher the level of per capita income. This is because a greater level of education results in higher labor productivity, and a greater level of education in the whole society tends to boost a higher rate of aggregate growth (Goldin and Katz, 2009). The key issue in the context of the fourth revolution is knowledge of technology, and to focus properly on the adequate type of knowledge that colleges and universities should offer in order to respond to the companies' and societies' demand of skilled knowledge. Most of these skills are under the umbrella of the so-called digital competencies, which are a set of different skills in achieving a good performance in the digital society which is a multi-faceted moving target covering many areas and literacies that are rapidly evolving as new technologies appear. Ferrari (2012) understands the Digital Competence as the convergence of multiple areas related to the ability in understanding media, searching for information from a critical point of view and being able to communicate by means of various digital tools and applications (mobile, internet).

In achieving these abilities, it is necessary to handle different disciplines and get some competencies related to digital literacy. Facing this challenge is one important issue among the Universities nowadays, and it seems to be very difficult to adapt to this changel from the traditional curricula perspective. Van Laar et al. (2017) have identified seven core skills for success in (technical, information management, communication, collaboration, creativity, critical thinking and problem solving) and five contextual skills (ethical awareness, cultural awareness, flexibility, self-direction and lifelong learning. They point out that the dynamic changes in the types of jobs demanded by the knowledge society pose serious challenges to educational systems, as they are currently asked to prepare young people for jobs that may not yet exist.

Similarities and Differences of the Previous and Present Studies

The studies of Rodrigo, Ma. Mercedes (2011) stated that the economic differences from the developed and developing countries affect the implementation of computerization program. Klimova, Blanka (2012) also stated the importance of computers and new technologies in the aspect of teaching and learning. Vitanova, et. al (2015) highlighted that Information and communication technologies (ICT) play a proven critical role in enhancing the quality of education. They are particularly important in helping teachers and students to perform more effectively. To make the best use of ICT, teachers must be equipped with adequate ICT competencies. Pañares, et. al (2017) reiterated that DepEd Computerization Program (DCP) provided the public schools with appropriate technologies that would enhance the teaching-learning process while Deshpande, et. al. (2017) stated that there is little rigorous evidence of the effectiveness of computer-based adult literacy programs in delivering high quality literacy and numeracy teaching in the developing world. All of them supported that there were existing significant relationships between computerization program and the teaching and learning process. UNESCO Institute for Statistics (April 2014), however, on its study of Information and Communication Technology (ICT) in Education in Asia data revealed that there were no data yet for public school teachers teaching using ICT and only two (2) percent of the public school teachers

were trained to use ICT. Thus, this data proves the lack of studies on the effectiveness of ICT integration to education curriculum.

All the previous conducted studies have commonalities to the present study since they all mentioned about the significant relationships between the school profile, teaching process and learning process in the computerization program. However, differences lie in the profile of the school, problems encountered during the transitional adjustments and the challenges met during the curriculum integration and adaptation.

Thus, this study was conducted to determine the effectiveness of DepEd Computerization Program after the intervention was given.

Justification of the Study

Different studies were conducted in the previous years and in the different places around the world regarding the status of the implementation of computerization program in schools, but in the Philippines, particularly in Santa Rosa North District, Schools Division of Nueva Ecija, this will be the first time to use the school profile such as SBM (School-Based Management) level, number of learners, number of teachers, number of school computer laboratories, number of computers with internet connections and ratio of computer units to learners to describe Status of the Implementation of the Philippines' DepEd Computerization Program in Santa Rosa North District in Santa Rosa North District in Santa Rosa North District in Santa Rosa North District together with its significance to teaching and learning process and the status of its implementation in terms of transitional adjustments and the curriculum integration and adaptation.

Collected data from the respondents were used to describe the schools' profiles. Significance of DepEd Computerization Program to teaching and learning process and the status of DepEd Computerization program during transitional adjustments and curriculum integration and adaptation will serve as basis for a proposed action plan.

Since the researcher is also a teacher of the Santa Rosa North District, he was alarmed to note that there are elementary schools in Santa Rosa North District that are not able to implement the DepEd Computerization Program because of the lack of functional computer units, computer laboratories and fast internet connection in some schools where the ICT curriculum is implemented. Computer units, computer laboratories and fast internet connection are crucial to the success of the DepEd Computerization Program. A school must have a good number of computer units, computer laboratories and fast internet connection to implement the DepEd Computerization Program properly and to ensure the programs' success.

Given the following reasons in the implementation of DepEd Computerization Program-thus this research was conducted.

METHODS, PROCEDURE AND SOURCES OF DATA

This chapter presents the methods, procedures and sources of data of the study. Order of subsections presentation begins from the research method used, locale of the study, followed by sources of data, research procedure and statistical tool and analysis.

Research Method

Purpose and design wise, the study is both of descriptive and correlational research design. Descriptive research describes data and characteristics about the population or phenomenon being studied. Descriptive research answers the questions who, what, where, when and how.

The descriptive method of research was used in the study because it involves process of description, recording, analysis, and interpretation or conditions that really exist.

Descriptive research focuses on the quantitative assessment of schools' profile in terms of school's SBM level, number of learners enrolled, number of teachers, number of school computer laboratories, number of computers with internet connections and ratio of computer units to learners.

Furthermore, the data were analyzed using frequency count, percentage and weighted mean to describe the schools' profiles, significance of DepEd Computerization Program and the implementation of DepEd Computerization Program. The relationships of schools' profile to significance of DepEd Computerization Program to the teaching and learning process and the implementation of DepEd Computerization Program were measured using Pearson's moment correlation analysis. Also, the relationship between the Significance of DepEd Computerization Program to the teaching and learning process and the implementation of DepEd Computerization Program were also measured using Pearson's moment correlation analysis.

This study is also considered to be developmental in nature since one of its objectives is to come up with an action plan for the elementary schools in Santa Rosa North District.

Locale of the Study

Nueva Ecija is a landlocked province in the Philippines located in the Central Luzon region. Its capital is the city of Palayan. Nueva Ecija borders, from the south clockwise, Bulacan, Pampanga, Tarlac, Pangasinan, Nueva Vizcaya and Aurora. The province of Nueva Ecija is devolved into five divisions namely Cabanatuan City, Gapan City, San Jose City, Science City of Muñoz and Nueva Ecija.

The Division of Nueva Ecija is divided into five congressional districts (CD). The Santa Rosa North District is under CD 3 and have 12 elementary schools.

Table 1. List of Schools in Santa Rosa North District

Schools	Teachers	School Heads
1. Berang Elementary School	7	1
2. Dr. Sancho T. Manubay Elem. School	10	1
3. Eulalio N. Adriano Memorial School	13	1
4. La Fuente Elementary School	22	1
5. Pilang Elementary School	7	1
6. Rajal Centro Elementary School	11	1
7. Santo Rosario Elementary School	17	1
8. San Gregorio Elementary School	38	1
9. San Pedro Elementary School	11	1
10. Severa Valisno Memorial School	9	1
11. Sap-Sap Elementary School	8	1
12. V.F Villanueva Memorial School	11	1
Total	164	12

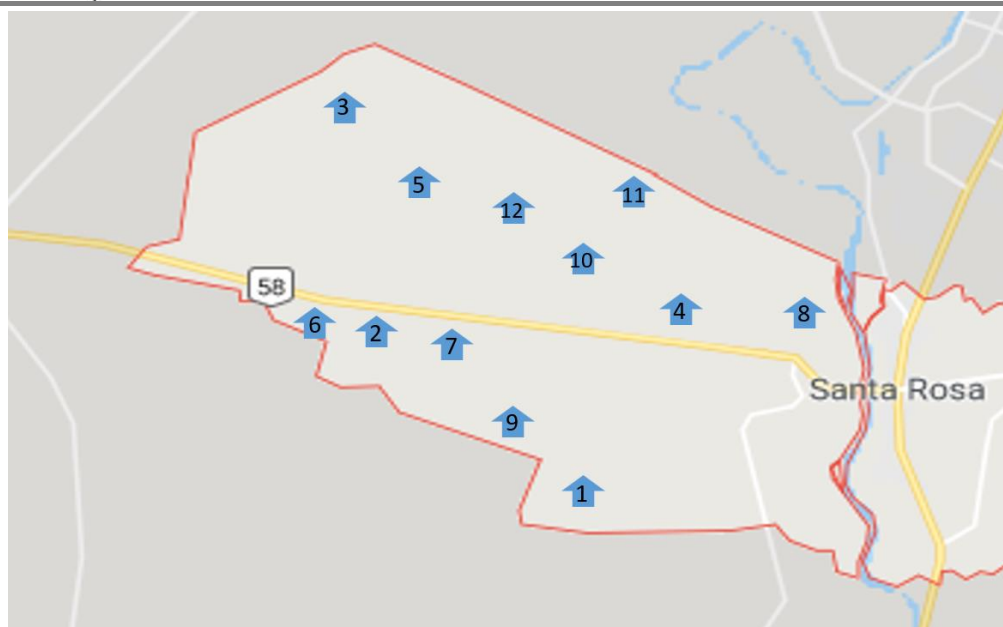


Figure 2. Map of Santa Rosa North District Comprising of Twelve Elementary Schools

Sources of Data

The respondents of the study were all the teachers and school heads of Santa Rosa North District, Division of Nueva Ecija. They were given a brief and informative oral overview of the nature and purpose of the study before the administration of the questionnaire.

The respondents of this study were chosen using total enumeration technique. Respondents who would be appropriate for the study were chosen based on the research problem (Adler, 2010).

Unit of Analysis. The study involved 164 teachers and 12 school heads from the 12 elementary schools in Santa Rosa North District. Individual respondents served as the units of observation for the descriptive analysis of questionnaire responses. However, for analyses involving school-profile variables, the school served as the unit of analysis. Variables such as SBM level, number of learners, number of teachers, number of school computer laboratories, number of functional computer units, number of computers with internet connection, and computer-to-learner ratio were measured at the school level. Therefore, questionnaire responses were aggregated by school before being matched with the corresponding school-profile variables for the correlational analysis. Thus, correlations involving school-profile characteristics were based on 12 school-level observations rather than treating multiple respondents from the same school as independent observations.

Validation of the Instrument

Using the cronbach's alpha, the instrument for significance of DepEd computerization program to the teaching process obtained a reliability coefficient of 0.88 and 0.91 in the learning process. On the problems and challenges of DepEd Computerization Program the reliability of the instrument in transitional adjustment obtained a reliability coefficient of 0.89 and the instrument for curriculum integration and adaptation obtained a reliability coefficient of 0.90. The instrument as a whole is reliable with a 0.96 value of reliability.

Research Procedure

In gathering the necessary data for the study, the following steps were undertaken.

The researcher asked permission from the office of the Public Schools Division Superintendent (PSDS) of the Division of Nueva Ecija through Santa Rosa North District Supervisor, to conduct a study about the

significance and challenges of DepEd Computerization Program in Santa Rosa North District. The District Supervisor then endorsed the researcher to school principals and district ICT coordinators.

The school principals helped the researcher to distribute questionnaire to all the teachers and school heads of Santa Rosa North District.

The researcher administered the questionnaires and the respondents were assured of the confidentiality of their responses. After which, the questionnaires were distributed and collected from the respondents. The data from each questionnaire will be collected, tabulated, presented and interpreted.

Statistical Tool and Analysis

This study employed quantitative data analyses in describing the School profile. To determine the Learning Process, Teaching Process, Transitional Adjustments and Curriculum Integration and Adaptation in the part of Teachers and School Heads, checklist questionnaire was used.

Analysis of the school profile of the respondents used frequency distribution.

This study used a questionnaire checklist. Items in the questionnaires resulted from the researchers' reading of related materials and research studies. The questionnaire is divided into three parts:

Part I is composed of item checklist about school profile. **Part II** is composed of item checklist about the significance of DepEd Computerization Program to teaching and learning process. **Part III** is consist of item checklist about the implementation of DepEd Computerization Program during transitional adjustments and curriculum integration and adaptation on DepEd Computerization Program.

The responses to the checklist item were evaluated according to the following rating scales:

Rating Scale	Verbal Interpretation
4	Strongly Agree (SA)
3	Agree (A)
2	Disagree (D)
1	Strongly Disagree (SD)

Pearson's product-moment correlation coefficient was used to examine the relationships among the study variables. For correlations involving school-profile characteristics, the school served as the unit of analysis ($n = 12$). Questionnaire responses from teachers and school heads within each school were aggregated to obtain school-level scores for the teaching process, learning process, transitional adjustments, and curriculum integration and adaptation. These aggregated scores were then matched with the corresponding profile characteristics of each school. This approach ensured that multiple respondents from the same school were not treated as independent observations when the school-profile variables were measured at the school level.

Statistical Treatment of Data

The data gathered were analyzed using frequency counts, percentages, weighted means, and Pearson's product-moment correlation coefficient. Frequency counts and percentages were used to describe the schools' profiles in terms of SBM level, number of learners, number of teachers, number of school computer laboratories, number of functional computer units, number of computers with internet connection, and computer-to-learner ratio.

Weighted means were used to describe the significance of the DepEd Computerization Program to the teaching and learning processes and its implementation in terms of transitional adjustments and curriculum

integration and adaptation. For correlations involving school-profile variables, questionnaire responses were aggregated within each school, resulting in 12 school-level observations. Pearson's product-moment correlation coefficient was then used to examine the relationships between the school-level questionnaire scores and the corresponding school-profile characteristics. Because these analyses were based on only 12 schools, the results were interpreted cautiously as exploratory associations.

PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter presents the result of the study, together with the interpretation and discussion of the data. Presentation begins with the schools' profiles, followed by significance of DepEd Computerization Program and the implementation of DepEd Computerization Program.

Schools' Profiles

In the context of this study, schools' profiles include SBM levels, number of learners enrolled, number of teachers, number of school computer laboratories, number of computer units, number of computer units with internet connection and the ratio of computer units to learners. **Schools' SBM Level**

Table 2 presents that out of the 12 elementary school respondents from Santa Rosa North District, Schools Division of Nueva Ecija, 7 (58.33%) schools are in the SBM level 3 or in the mature level, wherein the schools are expected to go further by maximizing efforts of the school and the community stakeholders to achieve higher learning outcomes, while the remaining 5 (41.67%) schools are in the SBM level 2 or in the progressive level wherein the schools are expected to intensify mobilization of resources and maximize their efforts to achieve desired learning outcomes

Table 2. Schools' SBM Levels

SBM Level	f	%
I	0	0.00
II	5	41.67
III	7	58.33

Legend:

Level	Interpretation
I	Standard
II	Progressive
III	Mature

The table simply means that most of the schools are capable in implementing the DepEd Computerization Program based on their SBM levels as shown in the table. This is in accordance with the purpose of School-based Management (SBM) program which is to provide project funding for school infrastructure, training, curriculum development, and textbooks. SBM was introduced as an integrating framework for obtaining school-level project inputs and building school capacity for education planning and program implementation beginning in school year 2003-2004. This program also allows the Department of Education to determine the schools that need the necessary funding to implement the DepEd Computerization Program (DCP) properly. However, schools should really intensify the utilization of school facilities like computer laboratories, to adapt to the DepEd Computerization Program that will enhance commitment of both teachers and learners in achieving higher learning outcomes and improving the level of school-based management performance through DCP.

Number of Learners Enrolled

As shown in table 3, there are 7 (58.33%) schools that have a range of 94-288 learners enrolled, while 1 (8.33%) school has the biggest number of enrollees with a range of 874-1068 number of learners. Overall, there is a total of 4,257 learners enrolled in the 12 elementary schools in Santa Rosa North District.

Table 3. Number of Learners Per School

Number of Learners	F	%
94 - 288	7	58.33
289 - 483	2	16.67
484 - 678	1	8.33
679 - 873	1	8.33
874 - 1068	1	8.33
Total	12	100

The table simply shows that most of the schools have a small number of enrollees. This finding is an advantage to facilitate learners in small groups to achieve success during the teaching and learning process through the computer-aided instruction. However, there is little rigorous evidence of the effectiveness of computer-based literacy programs in delivering high-quality literacy and numeracy in the developing world. (Deshpande et. al. 2017)

Number of Teachers

As shown in table 4, from the 12 elementary school respondents, there are 2 (16.7%) schools having 7 permanent teachers. These are the schools having the lowest number of teachers, while 1 (8.3%) school employs 38 teachers, the largest school in terms of number of teachers, with a total of 164 teachers as respondents.

Table 4. Number of Teachers Per School

Number of Teachers per School	f	%
7	2	16.7
8	1	8.3
9	1	8.3
10	1	8.3
11	3	25.0
13	1	8.3
17	1	8.3
22	1	8.3
38	1	8.3
Total	12	100

The findings on the number of teachers suggest that the Department of Education should hire additional teachers in order to decrease the ratio of students to teacher, so that students' achievement can be enhanced. (Koc and Celik 2015). Moreover, it would be beneficial to the department since hiring of new teachers with

different computer skills is relevant to the 21st century era implementation of its DepEd Computerization Program.

Number of Schools with Computer Laboratories

As shown in Table 5, from the 12 elementary schools in Santa Rosa North District, there are 8 (66.7%) schools that have their own school computer laboratories while only 4 (33.3%) do not have any school computer laboratory.

Table 5. Number of Schools with Computer Laboratory

Number of Schools with Computer laboratory	f	%
With out	4	33.3
With	8	66.7
Total	12	100

Table 5 simply means that most of the schools have school computer laboratories which are needed for the success of the implementation of DepEd Computerization Program. It shows that there are still many schools in Santa Rosa North District that do not have school computer laboratories.

The finding is in consonance with the cited studies that the Philippines is one of many developing nations that has turned to information and communication technology (ICT) as a tool to improve teaching and learning. Unfortunately, implementation suffers from several shortcomings: Knowing that the Philippines is a developing country in Southeast Asia whose educational system shares many of the same problems and limitations as those of its fellow developing nations. Some provincial schools lack chairs and tables, blackboards, computer units and laboratory equipment. Some even do not have electricity and water. There is a scarcity of learning aids in general. In contrast, American students have 140 times more reading material available to them than their Filipino counterparts.

This simply implies that the Philippines is still lacking of facilities to properly implement the DepEd Computerization Program. This lack of facilities is crucial to the development of the 21st century skills.

Number of Computer Units per School

As shown in Table 6, among the 12 elementary schools in Santa Rosa North District, there are 4 (33.3%) schools, each of them has only 1 functional computer. Only 1 (8.3%) school has 20 functional computers to cater to the DepEd Computerization Program. Overall, there are 73 functional computers in Santa Rosa North District that are being used for the implementation of DepEd Computerization Program.

Table 6. Number of Computer Units per School

Number of Computer per School	f	%
1	4	33.3
2	1	8.3
3	1	8.3
4	2	16.7
7	1	8.3
12	1	8.3
17	1	8.3
20	1	8.3

Total	12	100
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The table simply means that most of the schools lack computer units. This finding posts a very crucial need for the success of the implementation of DepEd Computerization Program. There are still schools that have a good number of functional computer units that will drive success to the implementation of the program.

The findings on the number of computer units per school suggest that the Department of Education should exert more effort in finding ways to provide computer units in every school to ensure the success of the DepEd Computerization Program.

On the other hand, most countries have made huge public investments in the purchase and maintenance of ICT related educational devices. As a result, the majority of developed countries have reached high rates of school ICT access.

National and local government programs for Information and Communications Technologies (ICT) in schools have been adopted in many countries in the last two decades with the aim of guaranteeing extensive access to ICT. In nearly all countries, actions within the ICT education strategies are funded mainly from the public budget. Budgets are allocated between equipment and human resources but purchase and maintenance of equipment and facilities have often taken precedence in expenditure (Eurydice, 2011).

Number of Computer with Internet Connection

As shown in Table 7 from the 12 elementary schools in Santa Rosa North District, there are 2 (16.7%) schools that have no access to internet, while there are 7 (58.3%) schools with 1 computer with an internet connection, 2 (16.7%) schools have 2 computers with internet connections and there is only 1 (8.3%) school that has 3 computers with internet connection. Overall, there are 14 computers with internet connection or only 19% of the total number of functional computers in Santa Rosa North District have access to the internet.

Table 7. Number of Computer with Internet Connection per School

Number of computer with Internet connection per School	f	%
0	2	16.7
1	7	58.3
2	2	16.7
3	1	8.3
Total	12	100

The table simply means that most of the schools have access to internet, which is crucially needed in gathering new instructional materials in delivering a unique learning experiences to the learners. Unfortunately, limited number of computers are connected to the internet per school because of the slow internet connection.

This is in relation to the study that the Philippines has the slowest internet in the Asia Pacific in the last three months of 2016, even as service gradually improved, a study showed. Internet speeds averaged 4.5 Mbps in the fourth quarter, up 7.9 percent from the previous quarter and up 44 percent from the comparable period in 2015. The Philippines was ranked lowest among 15 Asia Pacific countries and 108th in the world.

The findings on the number of computer units with internet connection per school suggest that the slow internet connection affects the connectivity of computers to the internet. This may result to the limited access to the vast information available on the web that should help teachers and learners to make the

teaching and learning process more meaningful using innovative instructional materials available on the web.

Ratio of Computer Units to Learners

As shown in Table 8, from the 12 elementary schools in Santa Rosa North District, there are 2 (16.7%) schools with a ratio of 1 computer for every 13 learners while there is 1 (8.3%) school with a ratio of 1 computer for every 332 learners. Using the data provided, it can be said that 58 learners in Santa Rosa North District use a single computer unit.

Table 8. Ratio of Computer Units to Learners per School

Ratio of Computer per School	f	%
1:13	2	16.7
1:29	2	16.7
1:40	1	8.3
1:48	1	8.3
1:43	1	8.3
1:94	1	8.3
1:148	1	8.3
1:178	1	8.3
1:224	1	8.3
1:332	1	8.3
Total	12	100

The table simply means that there is a wide gap between most of the schools and the number of available computer units to learners. This situation is crucial to the success of the implementation of the DepEd Computerization Program.

The findings on the number of computer units to learners per school suggest that the Department of Education should find ways to increase the number of computer units to a ratio of at least 1 computer unit to 5 learners. This was recommended by the U.S Department of Education (Coley, et. al. 2014)

On the other hand, In 2009, 97% of the teachers in public primary and secondary schools in the US had one or more computers located in the classroom every day (93% of them with Internet access), and the ratio of students to computers in the classroom was 5.3 to 1(Gray, Thomas & Lewis, 2010). In the same year, in Europe, at least 75% of the students had the availability of one computer for up to four students.

The latest EU-survey on ICT in schools confirms that ICT has become more pervasive also in European countries. In the 2011–2012 school year, there were approximately twice as many computers per one hundred students in secondary schools compared with 2006, and the share of schools with websites, e-mail for both teachers and students and a local area network has been steadily increasing at all levels of education (European Commission, 2013).

Significance of DepEd Computerization Program

Teaching Process

Table 9 presents the significance of DepEd Computerization Program to the teaching process. The data collected from the respondents are divided into 2 different groups, the school heads and the teachers.

Table 9. Significance of DepEd Computerization Program to the Teaching Process

Significance		School Heads		Teacher		Overall	
		WM	VI	WM	VI	WM	VI
1	The DepEd computerization program allows the teacher to shift from traditional method of teaching to 21st century method of teaching.	3.92	Strongly Agree	3.33	Strongly Agree	3.37	Strongly Agree
2	The teacher can personalize the education experience for each learner using computer technology.	3.83	Strongly Agree	3.18	Agree	3.23	Agree
3	The DepEd computerization program helps the teacher to gather useful instructional materials for his/her lesson presentation.	3.58	Strongly Agree	3.51	Strongly Agree	3.52	Strongly Agree
4	The DepEd computerization program is useful in making instructional materials for teaching purposes.	4.00	Strongly Agree	3.54	Strongly Agree	3.57	Strongly Agree
5	The teacher is able to integrate computer technology in his/her lesson regardless of the subject area.	3.92	Strongly Agree	3.32	Strongly Agree	3.36	Strongly Agree
6	The DepEd computerization program is a useful tool that helps teachers in their lesson presentation regardless of the subject matter.	3.58	Strongly Agree	3.41	Strongly Agree	3.43	Strongly Agree
7	The DepEd computerization program allows the teacher to create online assessment tool for his/her learners.	3.50	Strongly Agree	3.13	Agree	3.15	Agree
8	The computer technology is useful in accomplishing different school forms and school papers.	3.58	Strongly Agree	3.54	Strongly Agree	3.55	Strongly Agree
9	The DepEd computerization program helps teachers and/or	3.25	Strongly Agree	3.46	Strongly Agree	3.44	Strongly Agree

	school heads to be more efficient in the submission of school reports.						
10	The DepEd computerization program is useful in developing teachers' and/or school heads' knowledge about computer technology.	3.67	Strongly Agree	3.42	Strongly Agree	3.44	Strongly Agree
Weighted Mean		3.68	Strongly Agree	3.39	Strongly Agree	3.41	Strongly Agree

Rate	Verbal interpretation (VI)	
3.25	4.00	Strongly Agree
2.50	3.24	Agree
1.75	2.49	Disagree
1.00	1.74	Strongly Disagree

The data from the school heads reveal that the overall mean is 3.68 and verbally interpreted as “strongly agree” where item number 4, “The DepEd computerization program is useful in making instructional materials for teaching purposes.” with a mean of 4.00 verbally interpreted as “strongly agree”, is leading. This simply means that teachers must know how to use and utilize computer technology to succeed in the process of teaching learners.

On the other hand, the least agreeable statement is item number 9, “The DepEd computerization program helps teacher and/or school heads to be more efficient in the submission of school reports.” with a mean of 3.25, verbally interpreted as “strongly agree”, although the data reveal that the school heads strongly agree with the later. This simply means that some of the respondents had experienced difficulty in the submission of school reports using computer technology.

In comparison, the data from the teachers reveal that the overall mean is 3.39 and verbally interpreted as “strongly agree”, where items number 4 and 8, “The DepEd computerization program is useful in making instructional materials for teaching purposes.”, and “The DepEd computerization program helps teacher and/or school heads to be more efficient in the submission of school reports”, both have means of 3.54, verbally interpreted as “strongly agree”. These two items are leading, which simply means that most of the teachers agree that the DCP helped them in gathering instructional materials in their class discussions. In addition, the DCP also helped the teachers to be more efficient in the submission of school reports.

On the other hand, the least agreeable statement is item number 7, “The DepEd computerization program allows the teacher to create online assessment tool for his/her learners.”, with a mean of 3.13, verbally interpreted as “agree”, although the data reveal that the teachers agree with the later. This simply means that some of the respondents had experienced difficulties in using computer technology in creating online assessment tools for their learners.

Table 9 indeed, shows the significance of DepEd Computerization Program to the teaching process. The overall mean of the table combining the data from school heads and teachers is 3.41, verbally interpreted as “strongly agree”, which means that the respondents favor the above suggestions.

The data reveal that item number 4, “The DepEd computerization program is useful in making instructional materials for teaching purposes.”, with a mean of 3.57 is verbally interpreted as “strongly agree”. This is the leading description, which means that the school heads and teachers strongly agree that DCP is useful in

gathering and making instructional materials that can be used in making the teaching and learning process meaningful.

In contrast, the least agreeable statement is item number 7, “The DepEd computerization program allows the teacher to create online assessment tool for his/her learners.”, with a mean of 3.15, verbally interpreted as “agree”, although the data reveal that the teachers agree with the later. This simply means that some of the respondents had experienced difficulties in using computer technology in creating online assessment tools for their learners. This may imply that some of the schools have no or slow access to the internet. As a result, the teachers are not able to create and develop online assessment tools for their learners.

The data presented above, generally, means that DepEd Computerization Program is significant to the development of the teaching process. This is in connection with Tezci (2009) statement that one of the factors that determines educational development and innovation in general is teachers as they are the ones to use the ICT investments for educational development. Technology does not have an educational value in itself. It becomes important when teachers use it in the learning and teaching process.

Learning Process

The significance of the DepEd Computerization Program (DCP) to the learning process can be gleaned from table 10. The data collected from the respondents are divided into 2 different groups, the school heads and the teachers.

Table 10. Significance of DepEd Computerization Program in the Learning Process

Significance		School Heads		Teacher		Overall	
		WM	VI	WM	VI	WM	VI
1	The DepEd computerization program allows learners to learn basic computer commands and operations.	4.00	Strongly Agree	3.34	Strongly Agree	3.38	Strongly Agree
2	The DepEd computerization program allows learners to be more creative and productive individual.	4.00	Strongly Agree	3.32	Strongly Agree	3.36	Strongly Agree
3	The DepEd computerization program allows learners to apply knowledge and skills learned in different subject areas.	3.50	Strongly Agree	3.23	Agree	3.24	Agree
4	The learners are able to use available computer units to learn new skills.	3.83	Strongly Agree	3.18	Agree	3.22	Agree
5	The DepEd computerization program helps learners to accomplish their researches and assignments with the use of computer units available in the school's	3.75	Strongly Agree	3.23	Agree	3.27	Strongly Agree

	computer laboratory.						
6	The DepEd computerization program is an effective tool for learners to learn and explore what's beyond the four corners of the classroom.	3.17	Agree	3.26	Strongly Agree	3.26	Strongly Agree
7	The DepEd computerization program allows learners to answer and accomplish online activities prepared by the teacher.	3.67	Strongly Agree	3.22	Agree	3.25	Strongly Agree
8	The DepEd computerization program allows learners to gather and organize data using search engine tools.	3.58	Strongly Agree	3.16	Agree	3.19	Agree
9	The DepEd computerization program allows learners to gather data using online survey tools.	3.58	Strongly Agree	3.21	Agree	3.24	Agree
10	The DepEd computerization program allows learners to communicate online with the rest of the world with the guidance of their teachers.	3.67	Strongly Agree	3.21	Agree	3.24	Agree
Weighted Mean		3.68	Strongly Agree	3.24	Agree	3.27	Strongly Agree

Rate		Verbal interpretation (vi)
3.25	4.00	Strongly Agree
2.50	3.24	Agree
1.75	2.49	Disagree
1.00	1.74	Strongly Disagree

The data from the school heads reveal that the overall mean is 3.68 and verbally interpreted as “strongly agree”, where item number 1 and 2, “The DepEd computerization program allows learners to learn basic computer commands and operations.”, “The DepEd computerization program allows learners to be more creative and productive individuals.”, both with a mean of 4.00, verbally interpreted as “strongly agree”, are the leading descriptions. This simply means that school heads strongly believe that learners are able to learn basic computer commands and operation through DCP. School heads also believe that learners become more creative and productive individuals using computer technology.

On the other hand, the least agreeable statement is item number 6, “The DepEd computerization program is an effective tool for learners to learn and explore what’s beyond the four corners of the classroom.”, with the lowest mean of 3.17, verbally interpreted as “agree”. This simply means that some of the school heads do not agree with the statement. It may be because of lack of computer units available to accommodate all learners in their respective schools.

In comparison, the data from the teachers reveal that the overall mean is 3.24 and verbally interpreted as “agree”, where the item number 1, “The DepEd computerization program allows learners to learn basic computer commands and operations.”, with a mean of 3.34, verbally interpreted as “strongly agree”, is the leading, which means that teachers strongly believe that DCP is an effective program to teach learners the basic commands and operations using available computer units.

On the other hand, the least agreeable statement is item number 8, “The DepEd computerization program allows learners to gather and organize data using search engine tools.”, with the lowest mean of 3.16, verbally interpreted as “agree”. This means that some teachers do not agree that DCP is an effective program when it comes to allowing learners to gather and organize data using different search engine tools. It may be because of the slow or lack of internet connections in some schools. This is in relation to a study that the Philippines has the slowest internet in the Asia Pacific in the last three months of 2016.

In general, table 10 displays the significance of DepEd Computerization Program (DCP) to the learning process. The labels show an overall mean by combining the data from school heads and teachers is 3.27, verbally interpreted as “strongly agree”, which means that the respondents favor the above suggestions.

The data reveal that the item number 1, “The DepEd computerization program allows learners to learn basic computer commands and operations.”, with a mean of 3.38, verbally interpreted as “strongly agree”, is leading. This means that the school heads and teachers strongly agree that DCP is significant for learners to learn basic computer commands and operations, where the learners are able to learn and develop skills which are crucially needed by a 21st century learner.

In contrast, the least agreeable statement is item number 8, “The DepEd computerization program allows learners to gather and organize data using search engine tools.”, with the lowest mean of 3.19, verbally interpreted as “agree”. This means that some school heads and teachers do not agree that DCP is an effective program when it comes to allowing learners to gather and organize data using different search engine tools. It may be because of the lack of computer units in some schools, together with slow or lack of internet connections in some areas.

Overall, based on the data presented above, this means that DepEd Computerization Program is significant to the development of the learning process. This is in connection with (Cabero-Almenara et al., 2010) that Information and communication technologies are becoming increasingly important and relevant in all areas of social life, but particularly in education. This has allowed students a channel of communication that has changed the way to train. Thus, in the pedagogical field, ICT, as Cabero points out, are becoming a key element, finding us difficult formative actions that are not supported by different technological means.

Implementation of DepEd Computerization Program

Transitional Adjustments

The implementation of DepEd Computerization Program (DCP) during transitional adjustments can be gleaned from Table 11. The data collected from the respondents are divided into 2 different groups, the school heads and the teachers.

Table 11. Implementation of DepEd Computerization Program during Transitional Adjustments

Problem/Challenges	School Heads	Teacher	Overall
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		Mean	VI	Mean	VI	Mean	VI
1	There is a clear dissemination of information regarding the implementation of DepEd computerization program among teachers and school administrators.	3.75	Strongly Agree	3.10	Agree	3.14	Agree
2	DepEd provides trainings/seminars for teachers and schools heads anchored on the DepEd computerization program.	3.67	Strongly Agree	3.30	Strongly Agree	3.33	Strongly Agree
3	The teachers were trained by DepEd to use different computer programs such as MS applications and different internet applications.	3.67	Strongly Agree	3.16	Agree	3.20	Agree
4	There is a continuous technical assistance for teachers and school heads to improve their computer skills.	3.58	Strongly Agree	3.04	Agree	3.07	Agree
5	The teacher/school head has the ability and knowledge to maximize the use of computer software and applications.	3.83	Strongly Agree	3.18	Agree	3.22	Agree
6	There is a designated computer laboratory to accommodate computer units and the number of learners during hands-on sessions.	3.25	Strongly Agree	2.99	Agree	3.01	Agree
7	The school's computer laboratory is well-lighted and well-ventilated.	3.33	Strongly Agree	2.79	Agree	2.82	Agree
8	All the computer units are functional and used to maximize their functions.	2.42	Agree	2.78	Agree	2.76	Agree
9	There is a fast and reliable internet	2.67	Agree	2.81	Agree	2.80	Agree

	connection available for all the computers in the school's computer laboratory.						
10	The ratio between the number of available computer units to learners is ideal to cater to the needs of the learners.	3.00	Agree	2.55	Agree	2.58	Agree
Weighted Mean		3.32	Strongly Agree	2.97	Agree	2.99	Agree

Rate	Verbal interpretation (vi)	
3.25	4.00	Strongly Agree
2.50	3.24	Agree
1.75	2.49	Disagree
1.00	1.74	Strongly Disagree

The data from the school heads reveal that the overall mean is 3.32 and verbally interpreted as “strongly agree”, where the item number 5, “The teacher/school head has the ability and knowledge to maximize the use of computer software and applications.”, with a mean of 3.83, verbally interpreted as “strongly agree”, is leading. This simply means that school heads strongly believe that they have the ability and knowledge to maximize the use of computer software and applications.

On the other hand, the least agreeable statement is item number 8, “All the computer units are functional and used to maximize their functions.”, with the lowest mean of 2.42, verbally interpreted as “agree”. This simply means that some of the school heads do not believe that most, if not all, computer units are functional and used to maximize their functions. This may be because of the lack of computer units available in some schools in Santa Rosa North District.

In comparison, the data from the teachers reveal that the overall mean is 2.97 and verbally interpreted as “agree”, where the item number 2, “DepEd provides trainings/seminars for teachers and school heads anchored on the DepEd computerization program.”, with a mean of 3.30, verbally interpreted as “strongly agree”, is leading. This means that most of the teachers strongly agree that the Department of Education provides enough trainings/seminars for teachers and school heads anchored on the DepEd computerization program, which is crucial during the transitional adjustment in the implementation of the program.

On the other hand, the least agreeable statement is item number 10, “The ratio between the number of available computer units to learners is ideal to cater to the needs of the learners.”, with the lowest mean of 2.55, verbally interpreted as “agree”.

Table 11 displays the implementation of DepEd Computerization Program (DCP) during Transitional Adjustments. The labels show an overall mean by combining the data from school heads and teachers, as 2.99, verbally interpreted as “agree”, which means that the respondents favor the above suggestions.

The data reveal that item number 2, “DepEd provides trainings/seminars for teachers and schools heads anchored on the DepEd computerization program.”, with a mean of 3.33, verbally interpreted as “strongly agree”, is leading. This simply means that the respondents strongly agree that DepEd provides trainings/seminars for teachers and school heads anchored on the DepEd computerization program during the transitional adjustment in the implementation of the DepEd Computerization Program.

On the other hand, the least agreeable statement is item number 10, “The ratio between the number of available computer units to learners is ideal to cater the needs of the learners.”, with the lowest mean of 2.58, verbally interpreted as “agree”. This simply means that respondents do agree that the ratio between the number of available computer units to learners is ideal to cater to the needs of the learners. This may be because many of the schools lack computer units as there is lack of budget by the DepEd to fully implement the program.

Overall, based on the data presented above, there are problems and challenges that need to be addressed during the transitional adjustments in the implementation of the DepEd Computerization Program. This is in accordance with Rodrigo (2011), citing studies that the Philippines is one of the many developing nations that has turned to information and communication technology (ICT) as a tool to improve teaching and learning.

Unfortunately, implementation suffers from several shortcomings: Knowing that the Philippines is a developing country in Southeast Asia whose educational system shares many of the same problems and limitations as those of its fellow developing nations. Some provincial schools lack chairs and tables, blackboards, computer units and laboratory equipment. Some even do not have electricity and water. There is a scarcity of learning aids in general.

Curriculum Integration and Adaptation

Table 12. Implementation of DepEd Computerization Program during Curriculum Integration and Adaptation

Problem/Challenges		School Heads		Teacher		School Heads	
		Mean	VI	Mean	VI	Mean	VI
1	The DepEd actively encourages educators to integrate computer education in every lesson regardless of the subject matter.	3.58	Strongly Agree	3.29	Strongly Agree	3.31	Strongly Agree
2	The DepEd computerization program is adaptive to the globally, ever-changing curriculum.	3.67	Strongly Agree	3.29	Strongly Agree	3.31	Strongly Agree
3	The DepEd computerization program is necessary to the development of the 21st century skills of the learners.	3.83	Strongly Agree	3.38	Strongly Agree	3.41	Strongly Agree
4	The DepEd computerization program is relevant and anchored to the content of the current curriculum design.	3.42	Strongly Agree	3.27	Strongly Agree	3.28	Strongly Agree
5	The DepEd computerization program is properly	3.75	Strongly Agree	3.13	Agree	3.18	Agree

	implemented based on its purpose on the curriculum.						
6	Computer softwares needed for curriculum implementation are available and installed in all the computer units in school's computer laboratory.	3.25	Strongly Agree	2.98	Agree	2.99	Agree
7	The computers are relevant in the evaluation and assessment procedures of the current curriculum.	3.00	Agree	3.24	Agree	3.22	Agree
8	The computers are used in the selection of appropriate instructional materials to maximize the purpose of the curriculum.	3.17	Agree	3.21	Agree	3.20	Agree
9	The DepEd computerization program are used to monitor the learners' progress and development.	3.00	Agree	3.24	Agree	3.23	Agree
10	The computers are used in the application of knowledge learned by the learners in the different subject areas.	3.67	Strongly Agree	3.23	Agree	3.26	Strongly Agree
Weighted Mean		3.43	Strongly Agree	3.22	Agree	3.24	Agree

Rate		Verbal interpretation (vi)
3.25	4.00	Strongly Agree
2.50	3.24	Agree
1.75	2.49	Disagree
1.00	1.74	Strongly Disagree

The implementation of DepEd Computerization Program (DCP) during curriculum integration and adaptation is gleaned from table 12. The data collected from the respondents are divided into 2 different groups, the school heads and the teachers.

The data from the school heads reveal that the overall mean is 3.43 and verbally interpreted as “strongly agree”, where the item number 3, “The DepEd computerization program is necessary to the development of the 21st century skills of the learners.”, with a mean of 3.83, verbally interpreted as “strongly agree”, is leading. This simply means that the school heads strongly believe that the DepEd computerization program is necessary to the development of the 21st century skills of the learners.

On the other hand, the least agreeable statements are items number 7 and 9, “The computers are relevant in the evaluation and assessment procedures of the current curriculum.”, and “The DepEd computerization program are used to monitor the learners progress and development.”, both with the lowest mean of 3.00, both verbally interpreted as “agree”. This simply means that most of the respondents do agree that the computers are relevant in the evaluation and assessment procedures of the current curriculum. Also, the DepEd computerization program is used to monitor the learners progress and development.

In comparison, the data from the teachers reveal that the overall mean is 3.22 and verbally interpreted as “agree”, where the item number 3, “The DepEd computerization program is necessary to the development of the 21st century skills of the learners.”, with a mean of 3.38, verbally interpreted as “strongly agree”, is leading. It simply means that most of the teachers strongly agree that the DepEd computerization program is necessary to the development of the 21st century skills of the learners.

On the other hand, the least agreeable statement is item number 6, “Computer softwares needed for curriculum implementation are available and installed in all the computer units in school’s computer laboratory.”, with the lowest mean of 2.98, verbally interpreted as “agree”. It simply means that the respondents agree that the computer softwares needed for curriculum implementation are available and installed in all the computer units in school’s computer laboratory.

Table 12 displayed the implementation of DepEd Computerization Program during curriculum integration and adaptation. The labels show an overall mean of 3.24, verbally interpreted as “agree”, which means that the respondents favor the above suggestions.

The data reveal that the item number 3, “The DepEd computerization program is necessary to the development of the 21st century skills of the learners.”, with a mean of 3.41, verbally interpreted as “strongly agree”, is leading, which means that the respondents strongly agree that the DepEd computerization program is necessary to the development of the 21st century skills of the learners.

On the other hand, the least agreeable statement is item number 6, “Computer softwares needed for curriculum implementation are available and installed in all the computer units in school’s computer laboratory.”, with a mean of 2.99, verbally interpreted as “agree”, simply means that the respondents agree that computer softwares needed for curriculum implementation are available and installed in all the computer units in school’s computer laboratory. Based on the data presented above, there are problems and challenges that need to be addressed during the curriculum integration and implementation of DepEd Computerization Program.

Relationship between Schools’ Profile and Significance of DCP to Teaching and Learning Process

Table 13. Relationship between the School Profile and the Significance of DepEd Computerization Program (DCP) to Teaching and Learning Process

School Profile		Significance of DCP	
		Teaching Process	Learning Process
SBM Level	r	.140	.292
	p-value	.663	.357
No. of Learners	r	.009	.288

	p-value	.979	.364
No. of Teachers	r	.054	.301
	p-value	.867	.341
No. of Computer laboratory per School	r	.158	.098
	p-value	.624	.762
No. of Computer per School	r	.100	.202
	p-value	.756	.529
Schools with Internet	r	.733**	-.029
	p-value	.007	.929
Computer Pupil Ratio	r	.503	.085
	p-value	.096	.793
*. Correlation is significant at the 0.05 level (2-tailed).			
**. Correlation is significant at the 0.01 level (2-tailed).			

Correlations involving school-profile variables were calculated at the school level ($n = 12$). Questionnaire responses were aggregated within each school to obtain school-level teaching-process and learning-process scores, which were then matched with the corresponding school-profile characteristics.

The results showed that among the school-profile variables examined, only the number of computers with internet connection had a statistically significant positive relationship with the perceived significance of the DepEd Computerization Program to the teaching process ($r = .733$, $p = .007$). This indicates that schools with a greater number of internet-connected computers tended to have higher school-level ratings regarding the significance of the DCP to the teaching process. The null hypothesis was therefore rejected only for the relationship between the number of computers with internet connection and the teaching process. No statistically significant relationships were found between the teaching process and SBM level, number of learners, number of teachers, number of computer laboratories, number of functional computer units, or computer-to-learner ratio ($p > .05$); therefore, the null hypothesis was not rejected for these variables. Given that the analysis was based on only 12 schools, these findings should be interpreted cautiously and as evidence of association rather than causation.

In terms of the learning process, none of the school-profile variables showed a statistically significant relationship with the perceived significance of the DepEd Computerization Program. Specifically, no statistically significant relationships were found for SBM level, number of learners, number of teachers, number of computer laboratories, number of functional computer units, number of computers with internet connection, or computer-to-learner ratio ($p > .05$). Therefore, the null hypothesis was not rejected for the relationships between the school-profile variables and the learning process. Given the small number of schools included in the analysis ($n = 12$), these findings should be interpreted cautiously because the analysis may have limited statistical power to detect relationships.

Relationship between Schools' Profile and the Implementation of DepEd Computerization Program (DCP)

Table 14. Relationship between the school profile and the Implementation of DepEd Computerization Program (DCP)

School Profile	Implementation of DCP			
	Transitional	Curriculum	Integration	and

		Adjustment	Adaptation
SBM Level	r	.078	.212
	p-value	.811	.509
No. of Learners	r	.577*	-.022
	p-value	.050	.946
No. of Teachers	r	.616*	.015
	p-value	.033	.964
No. of Computer laboratory per School	r	-.324	.322
	p-value	.304	.307
No. of Computer School	r	-.079	-.017
	p-value	.808	.959
Schools with Internet	r	.219	.404
	p-value	.495	.193
Computer Pupil Ratio	r	-.287	-.070
	p-value	.367	.829
*. Correlation is significant at the 0.05 level (2-tailed).			
**. Correlation is significant at the 0.01 level (2-tailed).			

Correlations involving school-profile variables were calculated at the school level ($n = 12$). Questionnaire responses were aggregated within each school to obtain school-level transitional-adjustment and curriculum-integration-and-adaptation scores, which were then matched with the corresponding school-profile characteristics. The data reveal that the Number of Learners ($r=0.577^*$ $p=0.050$), and Number of Teachers ($r=0.616$ $p=0.033$) yielded a significant relationship to the transitional adjustments.

On the contrary, SBM Level ($r=0.078$ $p=0.811$), Number of Computer Laboratory per school ($r=-0.324$ $p=0.304$) Number of Computer per School ($r=-0.079$ $p=0.808$), School with Internet ($r=0.219$ $p=0.495$) and Computer Pupil Ratio ($r=-0.287$ $p=0.367$) have no significant relationship to the transitional adjustments. Therefore, null hypothesis is rejected.

This simply means that the higher the number of learners and teachers, the more problems/challenges they had encountered during the transitional adjustments on the implementation of DepEd Computerization Program. In terms of Curriculum Integration and Adaptation, SBM Level ($r=0.212$ $p=0.509$), Number of Learners ($r=-0.022$ $p=0.946$), Number of teachers ($r=0.015$ $p=0.964$), Number of Computer Laboratory per school ($r=0.322$ $p=0.307$), Number of Computer per School ($r=-0.017$ $p=0.959$), School with Internet ($r=-0.404$ $p=0.193$) and Computer Pupil Ratio ($r=-0.070$ $p=0.829$) have no significant relationship to the curriculum Integration and adaptation. Therefore, there is no relationship between schools' profile and Curriculum Integration and Adaptation. The null hypothesis is accepted.

Relationship between the Significance of DCP and the Implementation of DCP

Table 15. Relationship between Significance and the Implementation of DepEd Computerization Program (DCP)

Significance of DCP		Implementation of DCP	
		Transitional Adjustment	Curriculum Integration and Adaptation
Teaching Process	r	.485**	.582**
	p-value	.000	.000
Learning Process	r	.586**	.663**
	p-value	.000	.000
**. Correlation is significant at the 0.01 level (2-tailed).			
**. Correlation is significant at the 0.01 level (2-tailed).			

The data reveal that the Teaching Process ($r=0.485^{**}$ $p=0.000$), and Learning Process ($r=0.586^{**}$ $p=0.000$) yielded a significant relationship to the Transitional Adjustment. this means, there is a significant relationship between the teaching process, learning process and the transitional adjustments. The null hypothesis is rejected.

The data also reveal that the Teaching Process ($r=0.582^{**}$ $p=0.000$), and Learning Process ($r=0.663^{**}$ $p=0.000$) yielded a significant relationship to the Curriculum Integration and Adaptation, which means that there is a significant relationship between the teaching process, learning process and the Curriculum Integration and Adaptation. The null hypothesis is rejected.

Table 16. Proposed Action Plan

Name of Agency: Department of Education

Objectives: To encourage school heads, teachers and learners to use computer technology;

- To enhance the level of performance of school heads, teachers and learners;
- To sustain professional growth and development; and
- To utilize the implementation of DepEd Computerization Program.

Activity	Developmental Intervention	Persons Involve	Resources Needed	Timeframe
1. Conduct inventory of school facilities, buildings and equipment	Improve and develop school facilities and provide computer peripherals that would cater the full implementation of DCP.	SDS, PSDS, School Heads and Teachers	GAA	Every quarter
2. Creation of ICT groups and clubs	To encourage learners to join clubs and groups that focuses on the development of computer skills.	Teachers and learners	MOOE fund	Every 1 st quarter
3. Technical mentoring and coaching	To provide assistance for coworkers and to promote collaboration if necessary.	Teachers and School Heads	School heads and Development team	Every quarter of the school year

4. Computer literacy seminars and trainings	To develop and improve computer literacy and to maximize the facilities provided under DCP.	School Heads and Teachers	MOOE fund	Every 1 st quarter of the school year
5. School and personnel evaluation	To evaluate the status of the implementation of DCP and provide feedback for further improvement.	SDS, PSDS, School Heads and Teachers	School heads and Development team	Every quarter of the school year
6. Assessment and evaluation of computer skills and literacy	To provide assessment tools that will evaluate learners' level of computer skills and their level of computer literacy.	Teachers and learners	MOOE Fund	Every quarter of the school year

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study was conducted to determine the school profile, significance of DepEd Computerization Program and the implementation of DepEd Computerization Program as basis for a proposed action plan in Santa Rosa North District, Division of Nueva Ecija. All the school heads in total enumeration (n=12) and all the teachers in total enumeration (n=164), in 12 elementary schools of Santa Rosa North District, Division of Nueva Ecija were cordially requested as respondents.

The data were analyzed using frequency counts, percentages, and weighted means to describe the schools' profiles, the significance of the DepEd Computerization Program, and the implementation of the program. For correlational analyses involving school-profile characteristics, questionnaire responses were aggregated by school and matched with the corresponding school-level characteristics. Thus, the school served as the unit of analysis for these correlations (n = 12), rather than treating individual teachers and school heads within the same school as independent observations. Pearson's product-moment correlation coefficient was used to examine the relationships among these school-level variables. Because the correlational analyses were based on only 12 schools, the findings were interpreted cautiously as exploratory associations. The output of the study was a proposed action plan.

The findings of the study are the following:

School Profile

The findings of the study showed that 7 (58.33%) schools were in the SBM level 3 or in the mature level, wherein the schools are expected to go further by maximizing efforts of the school and the community stakeholders to achieve higher learning outcomes, while the remaining 5 (41.67%) schools were in the SBM level 2 or in the progressive level wherein the schools are expected to intensify mobilization of resources and maximize their efforts to achieve desired learning outcomes.

On the number of learners enrolled from the 12 elementary schools' respondents, there are 7 (58.33%) schools that have a range of 94-288 learners enrolled, while 1 (8.33%) school has the biggest number of enrollees with a range of 874-1068 number of learners. Overall, there is a total of 4,257 learners enrolled in the 12 elementary schools in Santa Rosa North District.

On the number of teachers as respondents from the 12 elementary schools, there are 2 (16.7%) schools that have 7 permanent teachers. This posted the lowest in all the schools while 1 (8.3%) school employs 38 teachers. The largest school in terms of number of teachers, has a total of 164 teacher respondents.

On the number of schools with computer laboratory, from the 12 elementary schools in Santa Rosa North District, there are 8 (66.7%) schools that have their own school computer laboratories while only 4 (33.3%) do not have any school computer laboratory.

on the number of computers per school from the 12 elementary schools in Santa Rosa North District, there are 4 (33.3%) schools that have only 1 functional computer while only 1 (8.3%) school has 20 functional computers to cater to the DepEd Computerization Program. Overall, there are 73 functional computers in Santa Rosa North District that are being used for the implementation of DepEd Computerization Program. On the number of computer units with internet connections, there are 2 (16.7%) schools that have no access to internet, while there are 7 (58.3%) schools with 1 computer with an internet connection, 2 (16.7%) schools have 2 computers with internet connections and there is only 1 (8.3%) school that has 3 computers with internet connections. Overall, there are 14 computers with an internet connection or only 19% of the total number of functional computers in Santa Rosa North District have access to internet.

On the ratio of computer units to learners from the 12 elementary schools in Santa Rosa North District, there are 2 (16.7%) schools with a ratio of 1 computer for every 13 learners, while there is 1 (8.3%) school with a ratio of 1 computer for every 332 learners. Using the data provided, it can be said that for every computer unit, there are 58 learners in Santa Rosa North District using it.

Significance of DepEd Computerization Program

Significance of DepEd Computerization Program to Teaching Process

School heads' responses in terms of Significance of DepEd Computerization Program to Teaching Process obtained a mean of 3.68, verbally interpreted as "strongly agree", which means that the school heads favor the above suggestion that DepEd Computerization Program is significant with regards to teaching process.

In terms of teachers' responses on the Significance of DepEd Computerization Program to Teaching Process, it obtained a mean of 3.39, verbally interpreted as "strongly agree", which means that the teachers favor the above suggestion that DepEd Computerization Program is significant with regards to teaching process.

Significance of DepEd Computerization Program to Teaching Process obtained an overall mean of 3.41, verbally interpreted as "strongly agree", which means that the respondents favor the above suggestion that DepEd Computerization Program is significant with regards to teaching process.

Significance of DepEd Computerization Program to the Learning Process

On the school heads responses in terms of Significance of DepEd Computerization Program to Learning Process, it obtained a mean of 3.68, verbally interpreted as "strongly agree", which means that the school heads favor the above suggestion that DepEd Computerization Program is significant with regards to learning process.

In terms of teachers' responses on the Significance of DepEd Computerization Program to Learning Process, it obtained a mean of 3.24, verbally interpreted as "agree", which means that the teachers favor the above suggestion that DepEd Computerization Program is significant with regards to learning process.

Overall, in terms of Significance of DepEd Computerization Program to Learning Process, it obtained an overall mean of 3.27, verbally interpreted as "strongly agree", which means that the respondents favor the above suggestions that DepEd Computerization Program is significant with regards to learning process.

Implementation of DepEd Computerization Program

Implementation of DepEd Computerization Program during Transitional Adjustments.

On the school heads responses in terms of the Implementation of DepEd Computerization Program during Transitional Adjustments, it obtained a mean of 3.32 ,verbally interpreted as “strongly agree”, which means that the respondents favor the above suggestion that the presented transitional adjustments during the implementation of DepEd Computerization Program were encountered.

In terms of teachers’ responses on the Implementation of DepEd Computerization Program during Transitional Adjustments, it obtained a mean of 2.97, verbally interpreted as “agree”, which means that the respondents favr the above suggestion that the presented transitional adjustments during the implementation of DepEd Computerization Program were encountered.

Overall, in terms of the Implementation of DepEd Computerization Program during Transitional Adjustments, it obtained an overall mean of 2.99, verbally interpreted as “agree”, which means that the respondents favor the above suggestion that the presented transitional adjustments during the implementation of DepEd Computerization Program were encountered.

Implementation of DepEd Computerization Program during Curriculum Integration and Adaptation.

On the school heads’ responses in terms of the implementation of DepEd Computerization Program during Curriculum Integration and Adaptation, it obtained a mean of 3.43, verbally interpreted as “strongly agree”, which means that the respondents favor the above suggestion that the statements presented under curriculum integration and adaptation during the implementation of DepEd Computerization Program were encountered.

In terms of teachers’ responses on the Problems/Challenges of DepEd Computerization Program during Curriculum Integration and Adaptation, it obtained a mean of 3.22 ,verbally interpreted as “agree”, which means that the respondents favor the above suggestion that the statements presented under curriculum integration and adaptation during the implementation of DepEd Computerization Program were encountered.

Overall, in terms of Problems/Challenges of DepEd Computerization Program during Curriculum Integration and Adaptation, it obtained an overall mean of 3.24, verbally interpreted as “agree”, which means that the respondents favor the above suggestion that the statements presented under curriculum integration and adaptation during the implementation of DepEd Computerization Program were encountered.

Relationship between the Schools’ Profile and Significance of DepEd Computerization Program

Teaching Process

In the relationship between the schools’ profile and significance of DepEd Computerization Program, the Schools with Internet ($r=0.733^{**}$ $p<0.007$), yielded a significant relationship, which means, there is a significant relationship between the Schools with Internet and the teaching process. On the other hand, SBM Level ($r=0.140$ $p<0.663$), Number of Learners($r=0.009$ $p<0.979$), Number of teachers($r=-0.054$ $p<0.867$), Number of Computer Laboratory per school($r=0.158$ $p<0.624$) Number of Computer per School ($r=0.100$ $p<0.756$) and Computer Pupil Ratio ($r=0.503$ $p<0.096$) have no significant relationship to the Teaching Process. Therefore, null hypothesis is rejected.

Learning Process

As regards to the relationship between the schools’ profiles and learning process, SBM Level ($r=0.292$ $p<0.357$), Number of Learners($r=0.288$ $p<0.364$), Number of teachers($r=-0.301$ $p<0.341$), Number of Computer Laboratory per school($r=0.098$ $p<0.762$), Number of Computer per School ($r=0.202$ $p<0.529$), School with Internet ($r=-0.029$ $p<0.929$) and Computer Pupil Ratio ($r=0.503$ $p<0.096$), there is no significant relationship to the learning process. Therefore, in terms of relationship between school profile and learning process, there is no significant relationship. The null hypothesis is accepted.

Relationship between the Schools' Profiles and the Implementation of DepEd Computerization Program

Transitional Adjustments

In the relationship between the schools' profiles and the implementation of DepEd Computerization Program, the **Number of Learners ($r=0.577^* p=0.050$), and Number of Teachers ($r=0.616 p=0.033$)** yielded a significant relationship. This means that there is a significant relationship between the number of learners, number of teachers and the transitional adjustments. On the contrary, SBM Level ($r=0.078 p=0.811$), Number of Computer Laboratory per school ($r=-0.324 p=0.304$) Number of Computer per School ($r=-0.079 p=0.808$), School with Internet ($r=0.219 p=0.495$) and Computer Pupil Ratio ($r=-0.287 p=0.367$) have no significant relationship to the transitional adjustments. Therefore, null hypothesis is rejected.

Curriculum Integration and Adaptation

As regards to the relationship between the schools' profiles and curriculum integration and adaptation, SBM Level ($r=0.212 p=0.509$), Number of Learners ($r=-0.022 p=0.946$), Number of teachers ($r=0.015 p=0.964$), Number of Computer Laboratory per school ($r=0.322 p=0.307$), Number of Computer per School ($r=-0.017 p=0.959$), School with Internet ($r=-0.404 p=0.193$) and Computer Pupil Ratio ($r=-0.070 p=0.829$) there is no significant relationship to the curriculum Integration and adaptation. Therefore, profiles and Curriculum Integration and Adaptation yield no significant relationship. The null hypothesis is accepted.

Relationship between the Significance of DepEd Computerization Program and the Implementation of DepEd Computerization Program

The data revealed that the Teaching Process ($r=0.485^{**} p=0.000$), and Learning Process ($r=0.586^{**} p=0.000$) yielded a significant relationship to the Transitional Adjustment. This means there is a significant relationship between the teaching process, learning process and the transitional adjustments. The null hypothesis is rejected.

The data also revealed that the Teaching Process ($r=0.582^{**} p=0.000$), and Learning Process ($r=0.663^{**} p=0.000$) yielded a significant relationship to the Curriculum Integration and Adaptation, which means, there is a significant relationship between the teaching process, learning process and the Curriculum Integration and Adaptation. The null hypothesis is rejected.

Action Plan

The Action plan will serve as a guide in achieving success in the implementation of DepEd Computerization Program. The action plan will answer the six sub-problems of the study. The proposed action plan is consist of activities, objectives, persons involved, resources needed and timeframe.

CONCLUSIONS

- The availability of the facilities and peripherals needed for the implementation of DepEd Computerization Program is crucial to the success of the integration and adaptation of computer education in the curriculum.
- The success of the teaching and learning process deeply rely on the capability of schools to implement of DepEd Computerization Program through the availability of school computer laboratories, computer units and accessibility to the internet connection of the schools.
- The transitional adjustments and the curriculum integration and adaptation during the implementation of DepEd Computerization Program is connected to the status of availability of the schools' facilities and the readiness of the teachers to implement the DepEd Computerization Program successfully.
- The significance of DCP is divided into two subcategories, the teaching process and the learning process. It is observed under the teaching process that "schools with internet connection" yielded a significant relationship, which means, there is a significant relationship between the schools with

internet connection and the teaching process. While the learning process had no significant relationship to the presented variables under the schools' profile. Therefore, the null hypothesis stating that "There is no significant relationship between the schools' profile and the significance of the DepEd Computerization Program (DCP)" is rejected.

- The implementation of DCP is divided into two subcategories, the transitional adjustments and the curriculum integration and adaptation. It is observed under the transitional adjustments that "number of learners" and "number of teachers" yielded a significant relationship, which means, there is a significant relationship between the number of learners, number of teachers and the transitional adjustments made during the implementation of DepEd Computerization Program, while the curriculum integration and adaptation had no significant relationship to the presented variables under the schools' profiles. Therefore, the null hypothesis stating that "There is no significant relationship between the schools' profiles and the problems and challenges met by the DepEd Computerization Program (DCP)" is rejected.
- The significance of DCP and the implementation of DCP were both divided under two subcategories namely, teaching process, learning process, transitional adjustments and curriculum integration and adaptation. It was observed that the teaching process and learning process were both significant to the transitional adjustments and curriculum integration and adaptation during the implementation of DepEd Computerization Program. Therefore, the null hypothesis stating that "There is no significant relationship between the significance of DepEd Computerization Program (DCP), and the problems and challenges met by the DepEd Computerization Program (DCP)" is rejected.
- The proposed action plan will serve as a guide in improving the implementation, integration and adaptation of the DepEd Computerization Program to improve the Status of the Implementation of the Philippines' DepEd Computerization Program in Santa Rosa North District in Santa Rosa North District in Santa Rosa North District in Santa Rosa North District.

LIMITATIONS OF THE STUDY

This study has several limitations that should be considered when interpreting the findings. Although

questionnaire data were obtained from 164 teachers and 12 school heads, the correlational analyses involving school-profile characteristics were conducted at the school level, resulting in a sample of only 12 schools. The small number of school-level observations limits the statistical power of the correlational analyses and the generalizability of the findings beyond the schools included in the study. In addition, aggregating individual questionnaire responses at the school level may obscure variations in perceptions among teachers and school heads within the same school. Therefore, the significant and non-significant relationships identified in this study should be interpreted as exploratory associations rather than evidence of causal relationships. Future studies may include a larger number of schools and employ analytical approaches that account for the clustering of individual respondents within schools.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are offered:

- The schools may find ways on improving the number of computer units to an ideal number to properly implement the DCP. The school may also find ways in improving its facilities to cater to the DCP and provide computer literacy seminars and trainings to all the teachers and school heads to maximize the use of computer technology in the classrooms. Teachers and school heads can also maximize their effort to learn new things using computer technology. Innovations in teaching could drive fruitful learning experience on the part of the learners.
- To ensure the participation of learners in the implementation of DepEd Computerization Program, teachers may create learning groups and organization in schools that will focus on the development of learners' computer skills and literacy. The integration of the computer education in every subject to develop 21st century skills that will help learners to become globally competitive is also recommended.

- The Department of Education can regularly monitor the status of the facilities and peripherals used to implement the DepEd Computerization Program to ensure its success. It is also recommended that the Department of Education enhance the curriculum that would encourage teachers to use ICT in teaching their lessons to help familiarize learners on the use of computer technology.
- It is recommended that the Department of Education conduct more trainings and seminars for school administrators and teachers regarding the implementation, integration and adaptation of DepEd Computerization Program.
- The Department of Education continuously may develop facilities and provide peripherals needed for the implementation the DCP. The Department of Education may comprehensively monitor and evaluate the status of DCP implementation during transitional stage and curriculum integration and adaptation to ensure the success of the DCP.
- To properly assess the status and effectiveness of DepEd Computerization Program during the transitional adjustments and curriculum integration and adaptation on its implementation, the Department of Education may provide a separate quarterly assessment and evaluation focusing on learners' level of computer skills and their level of computer literacy.
- The proposed action plan is strongly recommended to be used in the 12 elementary schools of Santa Rosa North District, Division of Nueva Ecija to help the school heads, teachers and learners maximize the implementation of DepEd Computerization Program.
- Future researches may conduct further researches to verify and strengthen the results of these findings not only in Santa Rosa North District, Division of Nueva Ecija but also in the other regions of the Philippines.

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