



PHILIPPINE
N O R M A L
U N I V E R S I T Y



Graduate Dissertations

July 2024

DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model

Jerry F. Gallestre

Philippine Normal University-North Luzon

Follow this and additional works at
pnu-onlinecommons.org/omp/index.php



Online Commons Citation

Gallestre, J.F., & Reyes, A.S. (2024)
DepEd Computerization Program (DCP) Implementation: An Evaluation Towards
Technology Leadership Model
(Dissertation, Philippine Normal University-North Luzon)
Retrieved from pnu-onlinecommons.org/omp/index.php/pnu-oc/catalog/book/1541

DCP IMPLEMENTATION



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

**DEPED COMPUTERIZATION PROGRAM (DCP) IMPLEMENTATION:
AN EVALUATION TOWARDS TECHNOLOGY LEADERSHIP MODEL**

A DISSERTATION

Presented to

The Faculty of Teacher Development
Philippine Normal University North Luzon
The National Center for Teacher Education
The Indigenous Peoples Education Hub
Alicia, Isabela

In Partial Fulfillment
of the Requirements for the Degree
DOCTOR OF PHILOSOPHY
with Specialization in Educational Management

JERRY F. GALLESTRE

JULY 2024



APPROVAL SHEET

This dissertation titled **“DEPED COMPUTERIZATION PROGRAM (DCP) IMPLEMENTATION: AN EVALUATION TOWARDS TECHNOLOGY LEADERSHIP MODEL”** prepared and submitted by **JERRY F. GALLESTRE** in partial fulfillment of the requirements for the degree of **Doctor of Philosophy with Specialization in Educational Management**, is hereby recommended for approval and acceptance.

AGNES S. REYES, PhD

Adviser

Approved in partial fulfillment of the requirements for the degree **Doctor of Philosophy with Specialization in Educational Management** by the Oral Examination Committee.

LETICIA N. AQUINO, PhD

Chairperson

CLEMENTE M. AGUINALDO JR., PhD

Member

JANDY S. DANZALAN, PhD

Member

MARISSA R. GUIAB, EdD

Member

Accepted in partial fulfillment of the requirements for the degree **Doctor of Philosophy with Specialization in Educational Management**.

CLEMENTE M. AGUINALDO JR., PhD
Associate Dean, Faculty of Teacher Development

LETICIA N. AQUINO, PhD
Dean, Academics and the Hub

**ABSTRACT**

Name	:	Jerry F. Gallestre
Title of Study	:	DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model
Key Concepts	:	DCP Implementation, DCP Challenges, Technology Leadership, Technology Leadership Model
Degree	:	Doctor of Philosophy
Specialization	:	Educational Management
Adviser	:	Agnes S. Reyes, PhD

This study employed the mixed methods explanatory sequential design to investigate the school heads' level of support, manifestations, and levels of technology leadership, underlying challenges, and relationships and differences in the DCP implementation along the selected profile variables (personal profile, school profile, DCP profile) towards the development of a technology leadership model. Both quantitative and qualitative data through survey questionnaires, in-depth interviews, and focus group discussions were gathered from 33 school heads, 33 ICT coordinators, and 177 teacher respondents from 12 elementary, 6 integrated elementary and junior high, 4 junior high, 8 integrated junior and senior high, and 3 stand-alone senior high schools in the Schools Division of Isabela. The study concludes that school heads have given proficient DCP initiatives, conducted a high level of DCP trainings, implemented a high number of DCP programs, exhibited high DCP utilizations, and demonstrated moderate technology leadership along with the five dimensions: leadership and vision, teaching and learning, productivity and professional practice, support, management and operation, and

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

assessment and evaluation. Thus, there is a need for a Technology Leadership Model to make schools technologically prepared. The researcher thereby recommends that the Gallestre SMART Technology Leadership Model be proposed to the Schools Division of Isabela for adaption and implementation and for future researchers to evaluate the effectiveness of the model.



Abstrak

Pangalan	:	Jerry F. Gallestre
Pamagat ng Pag-aaral	:	DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model
Pangunahing Kaisipan	:	DCP Implementation, DCP Challenges, Technology Leadership, Technology Leadership Model
Digri	:	Doktor ng Pilosopiya
Ispesialisasyon	:	Pamamahalang Pang-edukasyon
Tagapayo	:	Agnes S. Reyes, PhD

Siniyasat ng pananaliksik na ito gamit ang *mixed methods explanatory sequential design* ang antas ng suporta, mga katangian at lebel ng pamumunong pangteknolohiya ng mga punong-guro, mga nakapaloob na hamon, at ugnayan at kaibahan sa pagitan ng implementasyon ng DCP at mga piling *profile variables (personal profile, school profile, DCP profile)* tungo sa pagbuo ng *Technology Leadership Model*. Kinalap ang mga quantitatibong at qualitatibong datos gamit ang *survey questionnaire, in-depth interview, at Focus Group Discussion (FGD)* mula sa mga respondente na binubuo ng 33 punong-guro, 33 ICT koordineytor, at 177 guro ng 12 *elementary*, 6 *integrated elementary and junior high*, 4 *junior high*, 8 *integrated junior and senior high*, at 3 *stand-alone senior high schools* sa Sangay ng Isabela. Natapos ang pag-aaral na ito sa pagtukoy sa aktuwal na kalagayan ng implementasyon ng DCP na may katamtamang initiatibo, mataas na lebel ng pagsasanay, programa, paggamit ng mga kagamitang pangteknolohiya, at kasanayan sa pamumunong teknolohiya sa limang dimensiyon: pamumuno at bisyon, pagtuturo at pagkatuto, praktis sa panggawang mapakinabang at

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

propesyon, suport, pamamahala at operasyon, at pagtataya at balwasyon, kaya nagpasya na kailangan ang *Technology Leadership Model* na magsilbing gabay upang ang mga paaralan ay magkaroon ng pangteknolohiyang kahandaan. Iminumungkahi ng risertser na ang *Gallestre SMART Technology Leadership Model* ay idulog sa pamunuan ng edukasyon sa Sangay ng Isabela na tanggapin at ipatupad sa mga paaralan, at para sa mga mananaliksik sa hinaharap na magsagawa ng ebalwasyon ng *model* na ito.



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

“Beyond the clouds, the sun never stops shining.”

- Gavin Pretor-Pinney
British Author

This milestone is heartily and lovingly dedicated to:

My parents,
breaths and heroes of my life,
who have always been
the heartbeat of my soul
and the driving force behind my academic pursuits.
You’ll always be at the bottom of my heart!

My sisters and nephew,
supporters and shields of my life,
who have always been
the constant source of my strength
and motivation into what I am today.
You are indeed the best anyone could ever have!

Above all, to **our Greatest Mentor,**
who without Him,
accomplishment of this piece of work
would not have been made possible.

JERRY



ACKNOWLEDGMENT

*“Give thanks in all circumstances; for this is the will of God in Christ Jesus for you”
(1 Thessalonians 5:18)*

The trajectory of this academic pursuit could not have materialized without acknowledging the countless assistance and support accorded by kind-hearted individuals and entities in the Department of Education (DepEd). It is to all of them that the researcher gives sincere appreciation and acknowledgment for their great contributions.

A million thanks is first of all extended to **Dr. Agnes S. Reyes**, his dissertation adviser, at the same time the Executive Director and Provost of the Philippine Normal University North Luzon, for her supreme research expertise she devotedly shared which provided illumination for the clouded mental resources of the researcher and refinement of his rather mediocre work.

My utmost gratitude goes to **Dr. Leticia N. Aquino**, Dean for Academics and the Hub, for her professional assistance in validating the three sets of questionnaires and making sure that these were valid research instruments. The encouragement and sincerity she shared during the colloquium motivated the researcher to work in reality.

Much appreciation is accorded to **Dr. Clemente M. Aguinaldo Jr.**, whose advice and guidance as the Associate Dean of the Faculty of Teacher Development paved the way for this achievement. His gracious assistance, dynamism, sincerity, and motivation in the many facets of graduate school life have deeply inspired the researcher not to give up this journey. Only God can rightfully reciprocate all his efforts and genuineness.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Deep-seated gratefulness is given to **Dr. Jandy S. Danzalan**, Member of the Oral Examination Committee and the Director for Research, Extension, Quality Assurance, and Development for his valuable insights and pragmatic recommendations, which enriched the content, layout, and overall substance of this study.

Special thanks is extended to **Dr. Marissa R. Guiab**, Part-Time Faculty and Former Associate Dean of the Faculty of Graduate Studies and Teacher Education Research in IP Education of PNUNL, for patiently mentoring, checking, and editing a voluminous manuscript in both printed and digital forms. Her availability at all times, scholarly pieces of advice, encouraging comments, and various forms of support made the researcher bring this study to a joyful and successful conclusion.

Honor and praise is conveyed to **Dr. Rachel R. Llana**, Schools Division Superintendent of Isabela, for unselfishly allowing the researcher to administer his questionnaire to all DCP school recipients across all levels, from elementary schools to senior high schools in the division, and for permitting him to conduct in-depth interviews and focus group discussions with some of the school heads, ICT coordinators, and teacher respondents which were needed to triangulate the veracity of the data and establish the reliability of his research instrument.

Respect and admiration are given to **Sir Orlando L. Nicolas Jr.**, Information Officer I of the Schools Division of Isabela, for confidently permitting the researcher to secure the list of DCP recipient schools in the elementary, junior, integrated elementary and junior, integrated junior and senior, and stand-alone senior high schools in the division starting from the School Year 2017-2018 up to School Year 2022-2023.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

A sincere note of gratitude is reserved for **Dr. Elizabeth B. Bueno**, San Manuel's Schools District Supervisor, for humbly granting the researcher to try out his research instrument to the three randomly selected public schools in her district.

Profound thanks is offered to **Dr. Veronica Jean Garza**, Author-Researcher of the dissertation entitled: *Technology Leadership and Teachers' Perceptions of the Principal Technology Leadership Role*, for her 28-item Technology Leadership questionnaire which the researcher adapted in his study.

A considerable debt is owed to **Mr. Bryan Carlo P. Responso**, whose expertise as the research statistician proved invaluable in analyzing the data. To **Mr. Allan V. Dizon**, Master Teacher I of Palayan Region High School, Bagnos, Alicia, Isabela, for his mathematical assistance that positively contributed to the interpretation of the statistical findings. Despite the distance, he painstakingly e-mailed the information the researcher needed.

Heartfelt recognition is extended to external validators: **Dr. Marinel P. Dayawon**, University Director for Instruction at the Isabela State University - Main Campus, Echague, Isabela, and **Dr. Rischelle G. Aggabao**, Program Chair of Bachelor in Technology and Livelihood Education (BTLEd) at the Isabela State University - Cabagan Campus, Cabagan, Isabela. Considering their knowledge and expertise in the field of research, the quantitative and qualitative components of the researcher's instrument were validated in terms of format and content.

Warmest gratitude is indebted to all respected members of the Research Ethics Committee (REC) of PNUNL: **Dr. Clemente M. Aguinaldo Jr.**, **Dr. Adelaila J.**

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Leaño, and **Dr. Nicette N. Ganal**. They deserve sincere appreciation for their guidance and assistance in upholding ethical standards.

The same acknowledgment goes to the **school heads**, **ICT coordinators**, and **teachers** of public schools in the Division of Isabela, for their voluntary participation in this academic endeavor. To **Sir Jovito M. Cadiz**, Principal IV of Cagasat High School, Cordon, Isabela, and **Sir Benigno C. Pagatpatan**, Principal II of Tumauni South Central School, Tumauni, Isabela, for their assistance during the conduct of in-depth interviews and focus group discussions within their schools.

Never-ending gratefulness is likewise extended to his beloved parents, **Mr. David Nolasco Gallestre** and **Mrs. Sebrina Fernandez-Gallestre**, for their unceasing prayers and comfort. To his sisters, **Jeny and Juna**, and only nephew, **Mhark Dhawe**, for their smiles, hugs, and support. No words can express the researcher's love and appreciation for them.

Above all, to the omnipotent, omniscient and omnipresent **God**, who without Him, this piece of work wouldn't be realized.

JFG

**TABLE OF CONTENTS**

	PAGE
TITLE PAGE	i
APPROVAL SHEET	ii
ABSTRACT	iii
DEDICATION	vii
ACKNOWLEDGMENT	viii
TABLE OF CONTENTS	xii
LIST OF TABLES	xv
LIST OF FIGURES	xviii
LIST OF APPENDICES	xix
 Chapter 1 The Problem and Literature Review	
1.1 Background of the Study.....	1
1.2 Literature Review.....	9
1.3 Theoretical Framework.....	35
1.4 Research Problem and Hypothesis.....	43
1.5 Significance of the Study.....	45
1.6 Scope and Limitations.....	47
1.7 Definition of Terms.....	48
 Chapter 2 Methods	
2.1 Research Design.....	53
2.2 Sampling and Participants.....	53
2.3 Instruments.....	59
2.4 Data Gathering Procedure.....	62
2.5 Data Analysis.....	63
2.6 Potential Ethical Issues.....	69

**Chapter 3 Results and Discussions**

3.1 Respondents' Personal Profile.....	70
3.2 Respondents' School Profile.....	77
3.3 Respondents' DCP Profile.....	80
3.4 School Heads' Level of Support in DCP Initiatives.....	87
3.5 School Heads' Level of Support in DCP Trainings.....	90
3.6 School Heads' Level of Support in DCP Programs.....	92
3.7 School Heads' Level of Support in DCP Utilizations.....	95
3.8 Manifestations and Levels of School Heads' Technology Leadership in Leadership and Vision Dimension.....	100
3.9 Manifestations and Levels of School Heads' Technology Leadership in Teaching and Learning Dimension.....	105
3.10 Manifestations and Levels of School Heads' Technology Leadership in Productivity and Professional Practice Dimension...	108
3.11 Manifestations and Levels of School Heads' Technology Leadership in Support, Management and Operation Dimension....	111
3.12 Manifestations and Levels of School Heads' Technology Leadership in Assessment and Evaluation Dimension.....	114
3.13 Challenges Encountered by School Heads, ICT Coordinators, and Teachers in the DCP Implementation.....	120
3.14 Difference in the DCP Implementation According to Profile Variables.....	130
3.15 Relationship between DCP Implementation and School Type.....	136
3.16 Proposed Technology Leadership Model.....	140

Chapter 4 Summary, Conclusions, and Recommendations

4.1 Summary of the Study.....	148
4.2 Summary of Results.....	150
4.3 Limitations of the Study.....	158
4.4 Conclusions.....	159
4.5 Recommendations.....	162

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

REFERENCES.....	163
APPENDICES.....	173
CURRICULUM VITAE.....	262

**LIST OF TABLES**

TABLE		PAGE
1	Elementary Central School Respondents.....	55
2	Integrated Elementary and Junior High School Respondents...	56
3	Junior High School Respondents.....	57
4	Integrated Junior and Senior High School Respondents.....	57
5	Stand-Alone Senior High School Respondents.....	58
6	School Personnel Respondents.....	59
7	Range of Values of Descriptive Interpretations.....	63
8	Descriptive Statistics on the Respondents' Length of Service.....	72
9	Descriptive Statistics on the Respondents' Highest Educational Attainment.....	73
10	Descriptive Statistics on the Respondents' Other ICT-Related Ancillary Tasks.....	76
11	Descriptive Statistics on the Respondents' Number of Schools Handled.....	77
12	Descriptive Statistics on the Size of School.....	78
13	Descriptive Statistics on the Type of School.....	80
14	Descriptive Statistics on the Number of Computer to Student Ratio in an ICT Class.....	81
15	Descriptive Statistics on the Number of ICT Personnel.....	82

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

16	Descriptive Statistics on the Number of Computer Laboratory or E-classroom.....	82
17	Descriptive Statistics on the Number of Serviceable Computers.....	83
18	Descriptive Statistics on the Number of Non-serviceable Computers (for condemnation).....	85
19	Descriptive Statistics on the Size of Computer Laboratory or E-classroom.....	86
20	Descriptive Statistics on the Maintenance Budget.....	87
21	Descriptive Statistics on School Heads' Level of Support in terms of DCP Initiatives.....	89
22	Descriptive Statistics on School Heads' Level of Support in terms of DCP Trainings.....	92
23	Descriptive Statistics on School Heads' Level of Support in terms of DCP Programs.....	95
24	Descriptive Statistics on School Heads' Level of Support in terms of DCP Utilizations.....	97
25	Summary of Descriptive Statistics on School Heads' Level of Support.....	100
26	Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership in terms of Leadership and Vision Dimension.....	104
27	Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership in terms of Teaching and Learning Dimension.....	108
28	Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership in terms of Productivity and Professional Practice Dimension.....	110
29	Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership in terms of Support, Management and Operation Dimension.....	113

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

30	Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership in terms of Assessment and Evaluation Dimension.....	116
31	Summary of Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership.....	119
32	Descriptive Statistics on the Challenges Encountered by School Heads, ICT Coordinators, and Teachers in the DCP Implementation.....	129
33	Descriptive and Inferential Statistics on the Difference in the DCP Implementation across Personal Profile Variables...	132
34	Descriptive and Inferential Statistics on the Difference in the DCP Implementation across School Profile Variables.....	134
35	Descriptive and Inferential Statistics on the Difference in the DCP Implementation across DCP Profile Variables.....	136
36	Inferential Statistics on the Relationship between DCP Implementation and School Type.....	137
37	Summary Table of the Overall Results: Basis of the Proposed Technology Leadership Model.....	138

**LIST OF FIGURES**

FIGURE		PAGE
1	Anderson and Dexter's Model of Technology Leadership.....	30
2	Davies' Extended Model of Educational Technology Leadership.....	31
3	Flanagan and Jacobsen's Role Responsibilities and Goals of Technology Integration.....	32
4	Technology Acceptance Model.....	37
5	John Dewey's Theory of Learning.....	39
6	The Theoretical Framework.....	40

**LIST OF APPENDICES**

	PAGE
APPENDIX	
A Letter to the Schools Division Superintendent.....	173
B Approved Letter by the Schools Division Superintendent.....	174
C Letter to the Division Information Technology Officer.....	175
D Letter to the Experts for Content Validation of the Instrument.	176
E Letter to the Public Schools District Supervisor of San Manuel District for Pilot Testing.....	178
F Letter to the School Head of San Manuel District for Pilot Testing.....	179
G Reliability Analysis Report by the Statistician.....	180
H Letter of Adaption.....	181
I Letter to the Public Schools District Supervisor.....	182
J Letter to the School Heads.....	183
K Letter to the School Head Respondents and Informed Consent.	184
L Validated Questionnaire for School Heads.....	185
M In-depth Interview Questions for School Heads.....	197
N Letter to the ICT Coordinator Respondent and Informed Consent.....	198
O Validated Questionnaire for ICT Coordinators.....	199
P In-depth Interview Questions for ICT Coordinators.....	212
Q Letter to the Teacher Respondent and Informed Consent.....	213

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

R	Validated Questionnaire for Teachers.....	214
S	In-depth Interview Questions for Teachers.....	226
T	Focus Group Discussion (FGD) Questions for Teachers.....	227
U	Local Executive Order No. 13 (Echague, Isabela).....	228
V	Local Executive Order No. 16 (Echague, Isabela).....	229
W	Local Executive Order No. 17 (Echague, Isabela).....	230
X	Local Executive Order No. 16 (Angadanan, Isabela).....	231
Y	Local Executive Order No. 17 (Angadanan, Isabela).....	232
Z	Local Executive Order No. 18 (Angadanan, Isabela).....	233
AA	DepEd Order No. 037, s. 2022.....	234
AB	Certification from the Statistician.....	235
AC	Certificate of Professional Proofreading and Language Editing.....	236
AD	Certificate of Authenticity.....	237
AE	Request Letter for Validation of Research Report (In-depth Interview for School Heads).....	238
AF	Request Letter for Validation of Research Report (In-depth Interview for ICT Coordinators).....	239
AG	Request Letter for Validation of Research Report (In-depth Interview for Teachers).....	240
AH	Request Letter for Validation of Research Report (Focus Group Discussion for Teachers).....	241
AI	Verbal Statements of Respondents Pertaining to Personal Profile's Length of Service.....	242
AJ	Verbal Statements of Respondents Pertaining to Personal Profile's ICT-Related Ancillary Tasks.....	244

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

AK	Verbal Statements of Respondents Pertaining to DCP Profile's Computer to Student Ratio.....	246
AL	Verbal Statements of Respondents Pertaining to DCP Profile's Non-serviceable Computers.....	247
AM	Verbal Statements of Respondents Pertaining to School Heads' Level of Support in Terms of DCP Initiatives.....	248
AN	Verbal Statements of Respondents Pertaining to School Heads' Level of Support in Terms of DCP Programs.....	251
AO	Verbal Statements of Respondents Pertaining to School Heads' Level of Support in Terms of DCP Utilizations.....	253
AP	Verbal Statements of Respondents Pertaining to the DCP Challenge on the Ratio of Computer to Learner.....	255
AQ	Verbal Statements of Respondents Pertaining to the DCP Challenge on the Internet Connectivity.....	257
AR	Verbal Statements of Respondents Pertaining to the DCP Challenge on the Allotted DCP Funds.....	259
AS	Verbal Statements of Respondents Pertaining to the DCP Challenge on the ICT/DCP-Related Trainings.....	260

**CHAPTER 1****THE PROBLEM AND LITERATURE REVIEW****1.1 Background of the Study**

The Fourth Industrial Revolution is being experienced across the world. Millions of people are simply connected to a single device, and data and information are just in the blink of a touch on a gadget, which clearly describes that this stage is the complex form of a cyber-physical system of people and technology. Part of this cyber phenomenon is apparently within the walls of educational institutions across the different countries in the world (Hoy, 2016).

In Costa Rica, situated in the Central America region, this cyber phenomenon is significantly marked by their Information and Communication Technology (ICT) Program- One Laptop Per Child, popularly known as the OLPC. OLPC was one of the most popular promoted programs designed to provide every child with access to new channels of learning, sharing, and self-expression through the use of rugged, connected laptop computers and tablets that empower individual learning and growth (Ames, 2019). Latin American and Caribbean countries such as Brazil, Peru, Colombia, Uruguay, Haiti, Paraguay, Nicaragua, and Costa Rica have also implemented OLPC programs, with slight variations in the number of computers provided per student, connectivity access, training offered, and after-school computer access (Meza-Cordero, 2022).

In the autonomous community of Catalonia, Spain, located in the northeastern corner of the Iberian Peninsula, the eduCAT1 $\times$ 1, which was later replaced by eduCAT2.0, was

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

initiated, which aimed to promote the utilization of technology among secondary schools. The new version of the program has two distinct features, which are one student : one laptop (similar to the old version), and two students : one laptop (additional feature). However, this program ended its implementation in the academic year 2012-2013 due to a lack of funds (Mora, Escardíbul, & Di Pietro, 2018).

In Turkey, a country lying partly in Asia and partly in Europe, “Movement of Enhancing Opportunities and Improving Technology” (FATIH) project was launched in 2010. FATIH was the new computerization project created to provide infrastructure and e-content for all classes, students, and teachers, thus creating equal opportunities for access to ICT resources throughout the country, and transformations in curricula and teacher training processes (Kaleci & Cihangir, 2019).

In Thailand, One Tablet Per Child, popularly known as the OTPC was introduced. OTPC was the primary computerization program of the Ministry of Education (MOE), which aimed to enhance the kind of education in both urban and rural children by providing mobile devices such as android tablet PCs containing electronic learning materials of Mathematics, Science, Thai language, Social Studies, and English Language to all students across levels (OECD/UNESCO, 2016).

Likewise, in the Philippines, the Department of Education (DepEd), the country’s core department responsible for the citizen’s literacy and numeracy, manifested its commitment to embracing the demands of e-learning and technology education through the Digital Rise Program. The Digital Rise Program, headed by Undersecretary Alain Del Pascua under the leadership of the former DepEd Secretary, Dr. Leonor Briones, is an

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

educational framework that consists of ICT infrastructures, software, and related technology trainings of teachers (Hernando-Malipot, 2022).

The Digital Rise Program concerning technology has four anchors namely: DepEd Commons, Pen-Public Education Network, DepEd Computerization Program, and Digitalizing Operations. Among these four anchors, the DepEd prioritizes the DepEd Computerization Program, commonly known as DCP. This DCP is designed to provide ICT packages and IT infrastructure in public schools, having the financial allocation of Php 11.3 billion in the 2022 National Expenditure Program (NEP), which is twice the previous budget (Hani, 2021).

Moreover, DCP aims to: (a) provide ICT packages; (b) integrate ICT in the teaching and learning process; (c) raise the ICT literacy of learners, and school personnel; (d) improve computer-to-learner ratio; and (e) enhance the replacement cycle of ICT packages (DO No. 78, s. 2010).

With the existence of DCP/ICT, new avenues and opportunities in the education system have been offered. The school, as the institution that caters learning, has been provided with the fundamental support of developing new ways of teaching and learning. The drive towards digitalization has made a transformation on the collaborative learning abilities and transversal skills of the learners, turning their learning interest and motivation beyond the classroom. It has opened new career opportunities for these learners (Phutela & Dwivedi, 2019).

Teachers using ICT have made their classes interesting with the use of game-based learning activities in which the students can use their skills and gain in-depth knowledge

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

about their topic. Contact time with the learners has increased due to the availability of ready-made lesson plans and friendly-user assessment software, especially for the grading system. With online databases, educational websites, and digital libraries, they have been provided with sufficient information and resources for their lessons that aid them in making the teaching-learning process more productive and engaging to the learners. They have been allowed to create and replicate didactic tools that are quite suitable for use in lessons (Shoraevna, Eleupanovna, Tashkenbaevna, Zulkarnayeva, Anatolevna, & Nurlanbekovna, 2021).

Parents, too, have benefited from ICT for they have a higher accessibility in monitoring their children's development and achievement by establishing a clear and open line of communication to the school. This way, they can make themselves more active school stakeholders in the holistic development of their children (Keenze, 2022).

More so, school heads have prepared them to become technology leaders. Keeping up with the age of technology, they have a well-designed Student Information System (SIS) and Digitized School Data (DSD), which have automated many of the tasks that have traditionally been manual and time-intensive. With this system, essential data about enrollment, school fees, attendance of school personnel, and salaries could be retrieved for future use. Likewise, progress reports on attendance, achievement, and anecdotal issues of students could be revealed by this system for proper school management (Narra, 2021).

Since DCP serves as a tool of the DepEd to address the gap in the technology literacy of learners, school leaders of the different public schools are somehow requested to

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

manifest their technology leadership by making their school station one of the recipients of this DCP. With the DCP infrastructure, such as laptops, projectors, computer units, tablets, and other IT gadgets, school leaders need to meet the minimum requirements of being qualified school recipients. Some of these DCP infrastructure requirements are secured ICT room, electricity, computer tables, and ICT teacher (DO No. 78, s. 2010).

The DCP requirements challenged the technology leadership of the different school heads. They have competed among themselves in preparing these requirements by outsourcing all possible means to meet and make all the necessary requirements evident and get the approval of being one of the recipients of the DCP Package. With the report of the DepEd, there were still schools that failed to be the recipient of the DCP. This is in relation to the 2019 Commission on Audit (COA) data that from 2015 to 2019, only 59.43 percent of the DCP plans have been met. Hence, the remaining 40.57 percent serves as the contributors of the gap in technology literacy in education (Gatchalian, 2021).

The principals' readiness to lead as technology leaders is a growing concern affecting educational administration and management. The problem lies in the process of transforming the traditional culture of the school into a modernized one. With the principal's basic ICT skills due to the abrupt educational digitalization, they must find opportunities to learn and adopt the demands of technology while maintaining the proper management and governance of their schools.

Such finding was revealed true in a study undertaken by Quidasol (2020), who testified that school heads in the Schools Division of Laguna possess moderate

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

technology leadership with limited ICT skills, particularly when it comes to meeting standards in information and data management. School leaders have made minimal efforts to engage teachers, parents, and students in the school's technology planning process. While school heads were most effective in sharing and demonstrating best practices in technology-enhanced learning and teaching to faculty and staff, they still lacked in providing support to teachers for utilizing student assessment data to improve instruction.

With regard to communicating with education stakeholders, a significant number of school leaders did not encourage or utilize technology (e-mail, blogs, videoconferences) at all. This issue could be attributed not to the school leader's lack of skills, but to the absence of the necessary infrastructure. Also, only 71% of them demonstrated significant execution in terms of supporting, managing, and operating their roles although none of them achieved a full extent of performance across these domains. This highlights a notable gap between current performance levels and optimal effectiveness in the context of technology management.

Gulpan and Baja (2020), in another study, found that the technology leadership of private secondary principals in Batangas province is moderate across five dimensions: visionary leadership, digital age learning culture, excellence in professional practice, systematic improvement, and digital citizenship. Though efforts were undertaken to enhance their technological skills, they still remained unfamiliar with effectively utilizing information technology.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

In Thai education, Apsorn, Sisan and Tungkunanan (2019) likewise discovered administrators' lack of readiness to be technology leaders. This was due to their insufficient knowledge, poor skill in utilizing media, or low experience in creating new media and information technology for teaching and learning. Such findings were in consonance with Richardson and Sterrett (2018) who noted that school leaders are not adequately prepared to take on the role of technology leaders within their institutions. They stated that insufficient professional development on instructional technology resources and programs has made it challenging for them to serve as role models for the teachers they work with. As Bass (2021) pointed out in his study, the absence of professional learning opportunities has made it difficult for school leaders to identify which resources should be purchased to effectively integrate technology.

Lastly, in Malaysia, the gap on technological leadership was condemned publicly by parents and employers who claimed whether their education system could really prepare their children for the 21st century challenges. This issue was cited by Hamzah, Juraime, and Mansor (2016) who proved that majority of the schools in Malaysia do not have technology visions and policies. Also, a higher proportion does not have plans for ICT integration in their respective institutions. This would mean that the crises in technology leadership practices lie not just in poor resource management or improper empowerment in managerial aspect of the institution, but in non-visionary and not fully committed leadership of school heads. This was also affirmed by Yusof, Yaakob, and Ibrahim (2019), who found that the content of digital leadership is not yet fully implemented by principals. This clearly indicates that digital learning is not understood by school leaders

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

as they exhibited poor skill and knowledge on technical aspect, low utilization of technology in their personal lives due to lack of training, and failure of integrating technology in the classroom, which resulted to minimal improvement in their teaching and learning.

In today's education landscape, where hologram technology, social media, and artificial intelligence are key teaching tools, school principals need to undergo significant changes in their roles to become technology leaders. This transformation is crucial for guiding the adoption of cutting-edge digital technologies in the 21st-century classroom (Mullen, 2019). Hence, as Thannimalai and Raman (2018) recommended, there is a need for school heads to develop their abilities in honing their students as they continually experience the impact of technology problems. Furthermore, the essential qualities of school heads for a better technology leadership must be identified as they faced and addressed these challenges.

Thus, technology leadership is the only type of leadership that is anchored technologically, requiring careful investigation and exploration on technological resources. It is a critical aspect of leadership that must be addressed to help bridge the gaps that are uncovered, and to prepare current and future school leaders' successful technology implementation (Hero, 2020). With the existing reports of the distributed DCP infrastructure to public schools, not all of them became DCP school recipients; hence, only some of them can integrate technology in the classroom and utilize technology in management.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

This actual situation of the public schools is very alarming because not all schools have the ICT infrastructure, but they all face the demands of being technologically inclined educational campuses headed by a school leader equipped with technology leadership. The remaining gap in the distributed DCP infrastructures among the schools in the country, as well as in many other reported issues and challenges, really hinders the proper and smooth implementation of the DCP. The said issues elicited the interest of the researcher to evaluate the DCP implementation among public schools in the Schools Division of Isabela towards the development of a technology leadership model.

1.2 Literature Review

School Computerization Program in Other Countries

Hoping to improve their educational systems, many countries around the world have initiated computerization programs. One of these nations that placed a high emphasis on education, innovation, and research was Singapore. This country, having a population of about 6 million people, has constantly improved its ICT infrastructure in the education technology (EdTech) sector for more than 25 years with support from government initiatives and various local and international organizations. Between 12,425 SGD (9,300 USD) to 21,428 SGD (16,150 USD) per student from primary to university level was spent in public education annually (2021 census data from SingStat). This compares to an average of 3,469 USD in other Asia-Pacific countries (Global Education Monitoring Report Team, 2023).

Together with the Infocomm Development Authority (IDA), the Singaporean government has strategized the provision of financial assistance to families with child-

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

schoolers. Likewise, the government has developed the first ICT scheme as part of their Education Master Plan known as Neu PC programme (NPP), which aimed to provide computers and internet access to poor families. NPP was the only national program which provided financial assistance for subsidized PCs and free broadband connectivity to regular students and persons with special needs from less fortunate families. With NPP, these beneficiaries were given equal access to resources and opportunities as their peers; empowered for independent learning beyond the boundaries of school; and enjoyed the benefits of convenience and connectivity in their daily lives (Ng, Sun Sun, Pang, Lim, Soh, Pakianathan, and Ang, 2021).

To instill a sense of ownership, applicants made a small co-payment for the PC-Bundle. However, for some applicants, this small co-payment amount remained a barrier. Since 2007, iNSPIRE Fund provided a last-mile solution to student applicants who were unable to afford, by allowing them to perform community service in place of the co-payment. This inculcated the spirit of pay-it-forward whereby the beneficiaries not only helped themselves but also extended help to others (Infocomm Media Development Authority, 2019).

Since the launch of NPP in November 2006, this program has benefited about 33,000 poor families. One of the key success factors was the close IMDA collaboration with community partners which provided better reach and effective seamless delivery to the beneficiaries for lower operational cost, so that NPP can benefit more beneficiaries, and no one is at a disadvantage in their lifelong learning journey and daily living (Infocomm Media Development Authority, 2019).

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

In Costa Rica, different technology programs were initiated in similar ways. One Laptop Per Child (OLPC) was one of the most popular promoted programs designed for primary and secondary schools' literacy improvement. It was created to provide every child with access to new channels of learning, sharing, and self-expression using rugged, connected laptop computers and tablets that empower individual learning and growth. It was an idealistic tool to drive social change by incorporating interphases designed for play, freedom, and connectivity into a laptop device for children (Ames, 2019).

Funded and implemented by the Quirós Tanzi Foundation since 2012, this intervention has initially distributed 1,550 computers across 15 public primary schools within four low-income districts. However, in 2019, three million laptops or 80% were distributed in Latin America. Latin American and Caribbean countries such as Brazil, Peru, Colombia, Uruguay, Haiti, Paraguay, Nicaragua, and Costa Rica have likewise implemented OLPC programs, with slight variations in the number of computers provided per student (one per student or a fixed number of students sharing), connectivity access, training offered, and after-school computer access (Meza-Cordero, 2022).

In Catalonia, Spain, they have the so-called eduCAT1 $\times$ 1, that is designed to promote the utilization of technology in the different secondary schools. This has been developed with three main goals, which aimed to provide laptops, interactive digital boards, and e-books as learning tools. The government partially subsidized this eduCAT1 $\times$ 1 to those poor parents having children under the first year of compulsory secondary education. This was later named as eduCAT2.0 which provided the second option of two

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

students sharing a laptop. However, it ended in the year 2012 due to insufficient funds (Mora et al., 2018).

In Turkey, a new computer program named “Movement of Enhancing Opportunities and Improving Technology” (FATIH) project was implemented to provide equal chances in accessing ICT resources of all students and school personnel throughout the country. Likewise, it aimed to transform the curricula and teacher training processes, aid the monitoring and evaluation, establish research and development studies, and adjust the traditional teaching method and strategy to project-based learning (Kaleci & Cihangir, 2019).

Lastly, in Thailand, the Ministry of Education adopted the One Tablet Per Child (OTPC) program which aimed to enhance Thai educational standards. OTPC was the reason behind on the school’s improvement in Thai education. It significantly enhanced the knowledge of the far-flung learners and teachers enabling them to be technologically prepared in the digital world (Tubplee, 2019).

The OTPC was fully funded by 5 million baht for the hardware, software, professional development of teachers, and electronic instructional tools in every school under the Thai Kem Kang national project. It provided 336 learning objects through its 800,000 tablets that focused on the five learning areas: Thai Language, English Language, Mathematics, Science, and Social Studies (Machmud, Widiyan, & Ramadhani, 2021).

DepEd Computerization Program (DCP) in the Philippines

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

A 10-year Modernization Program, consisting of a computerization project and the School of the Future project, was implemented by the DepEd in the year 1996 to mainly improve the teaching and learning processes and the school's management and operation. This large-scale ICT education initiative was a manifestation of the Philippine government's serious commitment to integrating ICT into education.

This program had then evolved into the DepEd Computerization Program (DCP). As cited in DO No. 16, s. 2023 (Revised Guidelines on the Implementation of the DepEd Computerization Program), DCP is a multi-billion-peso program that envisions to enhance the teaching, learning, governance, and operation processes, practices, programs, and policies to address the demands of the modern age.

This computerization program is seen as one of the mechanisms to: (a) provide public schools with appropriate technologies; (b) address the computer backlog of public schools; (c) enhance the ICT literacy of learners, teachers and school heads; and (d) help schools to be technology prepared (DO No. 78, s. 2010).

As reiterated by the DepEd Secretary of Education, Hon. VP Sara Zimmerman Duterte-Carpio, the objectives of the revised guidelines of the DCP are the following: (a) to upgrade and strengthen the ICT competencies and capability building of learners, faculty and staff, and school heads; (b) to come up with ICT infrastructure and systems in public schools and DepEd offices; (c) to provide the relevant and necessary software, hardware, training, and other program support to all DepEd personnel (teaching and non-teaching); (d) to furnish smart TV packages to all public schools; and (e) to ensure

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

complete and quality computer laboratory packages to all public schools (DO No. 16, s. 2023).

Funded through the General Appropriations Act (GAA) annually, this program has three components such as (DO No. 78, s. 2010):

(1) Infrastructure Provision

This component refers to the allocation and distribution of DCP packages to be primarily used in the teaching and learning activities, and management of the different public schools across the country. This is assigned to the Technical Service-Information and Communication Technology Unit (TS-ICTU).

(2) Program Orientation

This component pertains to the conduct of program orientations and related ICT-trainings for the public school recipients. This is assigned to the ICT Technical Service.

(3) Monitoring and Evaluation

This component refers to the inspection, validation, and assessment in compliance to the selection criteria and implementation program. This activity is spearheaded by the different Regional and Division ICT coordinators in the country.

In relation to the student's enrolment, DepEd set the following guidelines in the DCP implementation such as: (a) schools with less than 2,000 students would receive 11 computers, (b) schools with greater than 2,000 but less than 5,000 would have 50

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

computers, (c) schools with more than 5,000 but less than 9,000 would receive 100 computers, and (d) schools with more than 9,000 would have 150 computers (DO No. 78, s. 2010).

To be a recipient of the DCP, however, public schools must have the following criteria: (a) stable supply of electricity, (b) at least one teacher assigned to handle Computer Education classes, (c) at least one additional teacher support coming from English, Science and Math, (d) pledge of support coming from school stakeholders, (e) never been a recipient of computers from other non-DepEd agencies, and (f) strong linkage with the community like LGU.

Prior to delivery, the recipient schools must be ready with the following requirements: (a) secured ICT-classroom having windows and door grills, (b) proper electrical wirings, (c) sufficient electrical lighting and ventilation; (d) presence of school security guard; and (e) organized school facility coordinators (DCP Orientation Handbook, 2018).

Through this program, 8,523 or 59.43% schools out of the 14,342 targeted schools as of December 31, 2019, and 7,555 or 16.29% schools out of 46,382 targeted schools in the country as of December 31, 2020 have been provided ICT packages. This backlog was due to the following reasons: (a) non-delivery of ICT packages, (b) delayed procurement and delivery, (c) non-utilization of ICT packages, and (d) defective delivered computers (COA, 2019).

Since 2019, the DepEd gradually replaced the traditional computer laboratories into mobile laboratories. These new laboratories, which contained tablets and laptops, have

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

the following advantages: (a) common classroom can be used as ICT laboratories due to the portability and handy features of the tablets/laptops, (b) class disruptions can be minimized due to class shifting, and (c) maintenance and protection can be easily established (DepEd-OUA, 2021c).

Implementing such a computerization program is indeed beneficial to the education system. It can help students as their reference tools, teachers as their source of knowledge and data, and school administrators as their management tools like in recording and other clerical works (Gersalia, Benavides, and Labo, 2020).

Based on the aforementioned literature, it explicitly shows the importance of DCP in education which continuously challenges the educators for the betterment of quality education.

Benefits of ICT/DCP in Education

According to UNESCO (2021), the power of Information, Communication, and Technology (ICT) in education has been invading the world since its birth. History tells that information has been around since a long, long period of time. Since it first appeared in the mid-1980s, ICT has become a popular tool in schools, and is defined as a diverse set of technological resources used to transmit, store, create, share, or exchange information. These technological tools and resources include computers, internet (websites, blogs, and emails), live broadcasting technologies (radio, television, and webcasting), recorded broadcasting technologies (podcasting, audio and video players, and storage devices), and telephony (fixed or mobile, satellite, videoconferencing, and the like).

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

At present, ICT plays salient roles in workplaces, business, education, and entertainment. It makes dynamic changes in society. It has become an increasingly important element for improving the teaching and learning process of students. It has made the world a much smaller place, as people now can communicate with anyone in any part of the world in a matter of seconds (Ahmed, 2019).

ICT is proven to be beneficial in teaching and learning for it: (a) enhances efficiency and improves quality in education; (b) provides digital resources; (c) creates a more interactive experience; (d) creates better opportunities for more engaging teaching and learning activities; and (e) enhances the literacy and numeracy skills of the students (Bariu, 2020; Shatri, 2020).

Das (2019), in a similar vein, believed ICT to have the great impact in education for it: (a) enables students better achievement elicited by contemporary approaches; (b) establishes better interaction between learners and teachers, and school administrators and community; (c) enhances teaching and learning process through gamification; (d) provides higher chance of accessibility of education; and (e) serves as instructional and communication tools between teachers and students.

In different online activities, students can hone their collaborative skills while working on their virtual learning environments. For example, they can easily share their ideas through their electronic documents or virtually interact with other students through videoconferencing tools like google meet and zoom (Xhuraj, Mehmetaj, & Berisha, 2023).

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Students who are engaged, motivated, and interested in things they are studying, can have better knowledge retention on the learning matter when using virtual reality learning applications. ICT provides special opportunities for making learning more reliable for everyone with different learning needs and styles due to individual differences. Likewise, ICT, with the help of internet, provides a vast range of resources and opens to different opportunities to all types of students as they learn with their own pacing and interest (Hafner, 2020).

To find information quickly and accurately, students can just get help through educational videos anytime, anywhere, and massive open online courses. It makes students reduce learning time and provides opportunities in a nontraditional way. It provides students with a way to connect curriculum to the real world, and those areas of academic focus can truly enrich the student experience (Xhuraj et al., 2023).

With its countless online resources, ICT can enhance instruction. It can transform the conventional teaching method to contemporary, making the students more engaging and achieve higher academic performance. Through it, teachers can save a ton of time by using online assessment tools and lesson plans. Furthermore, it can improve instructions effectively through its modernized instructional programs that can elicit and sustain the interest of the students to learn (Henderson, 2020; Ratheeswari, 2018).

ICT is widely seen as having the potential to contribute positively to educational growth and development for it has the significant characteristics such as: (1) immateriality, which is creating essential digital information; (2) interactivity, which is exchanging information between a person and a computer; (3) interconnection, which is

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

creating link between two technologies, (4) instantaneity, which is transmitting information in a speedy manner over long distances; (5) digitization, which is presenting information in a unique universal format; and (6) innovation, which is giving rise to the creation of new means to enhance communications (Business, 2020).

By referring to the above-mentioned benefits of using ICT in teaching and learning process, it is expected that ICT in education cannot only change the way the teachers teach, but the way the students learn as well. It is relatively useful to reduce the distance between teachers and students. Through website utilization, for example, students can play a role not only as connoisseurs of information but also as researchers and analysts by analyzing various data and information that have been obtained (Pirani and Hussain, 2019).

Challenges, Issues, and Concerns in DCP/ICT Implementation

For every implemented program, there is always an obstacle to face with like in the DCP implementation. The foremost serious challenge encountered by the DCP school recipients was the low ratio of computer to learner (Castro, 2023; Mula & Bucar, 2023; Palencia, 2022; Gersalia et al., 2020; Tuazon, 2019; Lupina, 2021; Bannan, 2021) that adversely affect the expected desired results of the program.

The second serious problem that negatively affected the DCP implementation was the limited ICT/DCP trainings of teachers (Castro, 2023; Mula & Bucar, 2023; Palencia, 2022; Tuazon, 2019; Lupina, 2021; Herrera & Janer, 2018), which resulted to low skills of teachers (Castro, 2023; Mula & Bucar, 2023; Palencia, 2022; Gersalia et al., 2019; Tuazon, 2019; Lupina, 2021). Such challenges might be the effect of the next issues met

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

by the DCP school recipients which were the low DCP budget (Castro, 2023; Mula & Bucar, 2023; Palencia, 2022; Gersalia et al., 2019; Tuazon, 2019; Herrera & Janer, 2018), and poor DCP financial support from stakeholders (Mula and Bucar, 2023; Gersalia et al., 2019; Tuazon, 2019; Herrera & Janer, 2018).

Another set of problems was the no sustainability plans in the implementation of the DCP (Castro, 2023; Mula & Bucar, 2023; Tuazon, 2019), which was due to no ICT personnel (Castro, 2023; Mula & Bucar, 2023), and poor or unsecured ICT laboratory (Castro, 2023; Mula & Bucar, 2023; Palencia, 2022; Gersalia et al., 2019).

Likewise, issues on the poor ICT integration in the classroom (Lupina, 2021), and unstable internet connectivity (Palencia, 2022; Herrera & Janer, 2018) were labelled as moderately serious ICT problems. The cited challenges were manifestations that some DCP school recipients have low level of preparedness and readiness (Herrera & Janer, 2018).

These identified problems imply that the DCP school recipients encountered different circumstances in the implementation of ICT computerization programs and projects that affect their performance. Though schools nationwide received the DCP package, Ocampo and Lacasan (2019) observed that not all these schools have been able to maximize its use. Not all learners were able to use or access them (Brasileño & Bidad, 2021), and around 75% of the teachers did not know how to operate the desktop virtualization package (Rodriguez, 2022).

With these findings, Herrera and Janer (2018) recommended the following: (a) the challenges encountered by the DCP school recipients especially on the financial crisis can

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

be raised to the school stakeholders for support, (b) teachers and staff are suggested to undergo ICT/DCP trainings that focused on the utilization and integration in the different teaching methods/approaches as well as to the learning content, (c) the school heads and teachers should establish an open communication through regular meetings and LAC sessions for feedbacking and evaluation vis-à-vis to the ICT/DCP plan, and (d) there must be a ICT/DCP sustainability plan which can be submitted to the top management for verification, implementation, and adoption.

In developing countries like Singapore, some of the challenges that have been introduced with the development of technological infrastructure were the following: (a) students have unstable internet connection leading to reduced interaction. This barrier is especially significant for students who are learning remotely and based elsewhere in the region or in the world; (b) 2-in-1 notebooks have become too hot during use, and hardware has not met user needs (e.g., too few USB ports); (c) users have reported challenges in integration across platforms. While having the opportunity to choose from vendors increase comparability, using different vendors can affect seamless integration. An expert from the field noted that ICT investment decisions may over-rely on boards or school department heads who will have incomplete information and suggested that legislation needs to encourage compatibility when institutions consider upgrading technological infrastructure; and (d) challenge in procurement, in which management opted to buy a software that more cost-effective, while a more expensive tool better matched teachers' preferences and usage. In higher education, allocation of technological resources is often dependent on university's focus and immediate needs: examples

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

include decisions to offer immersive environments for face-to-face students instead of building e-learning courses or negotiating with employers about synchronous or asynchronous learning rather than advancing digital infrastructure (Global Education Monitoring Report Team, 2023).

In Finland, Finnish teachers experienced several challenges in integrating ICT in their teaching and learning activities. To name some: (a) limited ICT instructional tools, (b) low teacher's ICT skills, (c) inadequate ICT training budget, and (d) no guidelines on proper ICT integration in their curriculum. Also, Indonesia encountered crises and problems in the ICT implementation. Some of these are: (a) no clearly defined ICT policies, (b) no ICT infrastructure, (c) lack of ICT experts in the region, (d) gaps in educational curriculum, and (e) low teachers' ICT skills. Even in Malaysia, though most of their teachers have shown a high ICT skills, they were challenged in the proper integration of ICT in the instructional aspect and ICT utilization in the educational management (Lupina, 2021).

These are such DCP/ICT growing concerns affecting educational administration and management. So, it is a must for principals to learn more in order for them to adapt the various technology trends in education by maximizing the utilization of ICT resources in their schools. This will happen if they learn the essence of technology integration towards the improvement of pupils' learning and motivation (Tuazon, 2019).

With these issues and challenges, necessary actions should be taken. As Paine (2019) mentioned, school stakeholders are great factors in the different school improvements, provided that school administrators have established a healthy relationship between and



among them. Hence, stakeholders are really one of the best school partners in the pursuit of technology implementation.

Technology Leadership Measurement and Standards

The use of technology in education was directed by standards to create 21st-century skills among students. The International Society for Technology in Education (ISTE), launched in 1940, is a nonprofit membership association of educators that aims to promote the utilization of technology in support of the enhancement of teaching and learning. The said organization realized its goal by publishing sets of standards for students, teachers, and administrators, focusing on educational technology (Alayan, 2022).

In 2001, ISTE, through National Educational Technology Standards for Administrators (NETS-A), measured the technology leadership of principals or administrators along the six parameters, namely: (1) leadership and vision, (2) teaching and learning, (3) productivity and professional practice, (4) support, management and operation, (5) assessment and evaluation, and (6) social, legal and ethical issues.

The six parameters are described by NETS-A (2005) as follows:

(1) Leadership and Vision

Administrators inspire a shared vision for comprehensive integration of technology and foster an environment and culture conducive to the realization of that vision. They should: (a) facilitate the shared development of a technology use vision by all stakeholders and widely communicate that vision; (b) maintain an inclusive and cohesive process to develop, implement, and monitor a dynamic, long-range, and systemic

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

technology plan to achieve the vision; (c) foster and nurture a culture of responsible risk taking and advocate policies promoting continuous innovation with technology; (d) use data in making leadership decisions; (e) advocate for research-based effective practices in the use of technology; and (f) advocate, on the state and national levels, for policies, programs, and funding opportunities that support implementation of the district technology plan.

(2) Teaching and Learning

Administrators make sure that the design of the curriculum, teaching strategies, and learning environments must have proper integration of suitable technologies to optimize teaching and learning. They must do the following: (a) determine, utilize, evaluate, and advocate appropriate technologies for better student achievement, (b) establish and sustain collaborative technology-based learning environments for quality learning, (c) utilize technology anchored to individual differences for learner-centered environment, (d) facilitate the use of technology for the enhancement of classroom and school management, and (e) provide quality professional learning technology opportunities of school personnel for improved teaching and learning activities.

(3) Productivity and Professional Practice

Administrators apply technology to enhance their professional practice and to increase their own productivity and that of others. They must focus on the following: (a) create effective use of technology exemplars, (b) establish communication and collaboration among colleague, school personnel and community with the use of technology, (c) participate learning communities, (d) sustain job-related professional

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

learning using technology, (e) maintain technological awareness related to education, and (f) utilize technology for organizational advancement.

(4) Support, Management, and Operation

Administrators ensure the integration of technology to support productive systems for learning and administration. They should: (a) create policies and guidelines that ensure suitability of technologies; (b) utilize integrated technology-based management and operation system; (c) establish budgetary allocations for the implementation of technology plan; (d) align strategic and technology plans with policies, and leverage technology resources; and (e) implement procedures for continuous improvement of the school's technology system.

(5) Assessment and Evaluation

Administrators use technology-based assessment and evaluation effectively. With the use of technology, they must: (a) utilize various assessment and evaluation methods; (b) use technology in the different research activities; (c) assess and inform school personnel's performance; and (d) evaluate administrative, managerial, and operational systems of school administrators.

(6) Social, Legal, and Ethical Issues

Administrators learn and abide by the social, legal, and ethical issues related to technology. With the use of technology, they should: (a) ensure equity in the accessibility of technology resources; (b) enforce social, legal, and ethical practices; (c) promote online and environment safety, and healthy technology practices; (d) practice professional intellectual property.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

However, in 2009, ISTE updated the six parameters of NETS-A into the following performance indicators: (1) visionary leadership, (2) digital age learning, (3) excellence in professional practice, (4) systemic improvement, and (5) digital citizenship.

Finally, the set of the NETS-A by the ISTE was revised in 2018 and became “ISTE for Education Leaders” with the following dimensions such as: (1) equity and citizenship advocate, (2) visionary planner, (3) empowering leader, (4) systems designer, and (5) connected learner.

As principals go to higher positions, they can strategize their skills along with technology for better mentoring and school management. As they utilize this technology, they can create deeper understanding on the essence of technology and build a repertoire of modernized strategies to be used by teachers in the classroom. Likewise, they can model to their teachers the required skills in the proper integration of appropriate technology in the different methods or approaches for a higher chance of quality learning and student’s achievement (Brown & Jacobsen, 2016).

School Head’s Technology Leadership Studies

One of the earliest researches reviewed by the researcher concerning the 2005 NETS-A dimensions was Garza’s (2023) study. Based on his study in terms of teaching and learning technology dimension, majority of the principals with professional development have accomplished their activities significantly, and they have provided teacher’s assistance through the provision of professional development along with technology. Further, respondents mentioned that they have regularly used technology in accessing



staff and student's records, communicating with school stakeholders, and accomplishing day-to-day tasks during the interview.

As to the results on the leadership and vision dimension, it was found that most of the principals do not compare and align technology plans, identify and advocate research-based practices in using technology, participate in planning activities, and share technology plans with stakeholders.

In terms of support, management, and operation results, it was revealed that majority of the principals do not agree on the allocation of campus funds, hardware and software upgrade of computers, and assessment of staff satisfaction in using technology.

With these findings, the teacher respondents recommended that principals should: (a) significantly engage in activities on promoting participation in technology planning, (b) communicate these technology plans with the community, (c) advocate best technology practices, (d) facilitate professional development, (e) conduct staff needs assessment, and (f) allocate supplemental funds for technology service support.

Likewise, Cantos and Callo (2022) have strengthened the results that principals have highly demonstrated the six domains of the school heads' technology leadership. These principals have participated professional development events that aim to improve their technological capabilities, encouraged and nurtured learning communities, assisted teachers and staff in the utilization of technology, maintained technological awareness related to education, and sought additional financial support. Further, Cantos and Callo recommended that school heads should significantly practice the competencies of a technology leader for better school performance.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

In another study by Mendoza and Catiis (2022), they found that public school administrators possess a high level of technology leadership, and they have full knowledge and skill in the utilization and application of technology. Also, they attested that school administrator respondents are duly acquainted with technology leadership along with teaching and learning.

Looking into the study performed by Quidasol (2020) in the Division of Laguna, Philippines, it unveiled that there is a minimal school heads' participation and performance under the leadership and vision due to failure of comparing and aligning technology plans with other plans, and minimal promotion of stakeholders' participation in technology planning. However, these school administrators have significantly exhibited an extent of performance along with the teaching and learning domain for they excelled the most in modelling best practices with the use of technology to their teachers.

Guided by the idea of Martinuzzi (2019), who stressed: "there's hardly anything worse for company morale than leaders who practice the 'Do as I say, not as I do' philosophy", public school administrators have established leading by example among teachers that made them role models in teaching and learning.

Using the descriptive-correlation design, Hero (2020) proved that along visionary leadership, principals are good in inspiring and facilitating on the shared vision among stakeholders in relation to digital resources. Also, principals are advocates of policies and programs related to technological infusion in the school.

Finally, Gulpan and Baja (2020) attested in their study that principals of private secondary schools are least prepared for visionary leadership. This is due to some



identified factors such as: (a) abrupt change in educational landscape, and (b) increasing demands brought about by new policies. In terms of digital age learning culture, principals manifest a moderate practice in using ICT in various activities in the school because of slow and unstable internet connection used in the teaching and learning activities.

With their findings, they suggested that principals should: (a) exert effort in learning and embracing various trends in technology, (b) evaluate application of educational technology resources needed by the school, (c) include allocation of resources in their school plans, and (d) utilize ICT in communicating school stakeholders.

Technology Leadership Models

Anderson and Dexter's Model of Technology Leadership

Anderson and Dexter (2005) have developed a technology leadership model, which is based on the NETS-A Standards, having three elements: infrastructure, technology leadership, and technology outcomes.

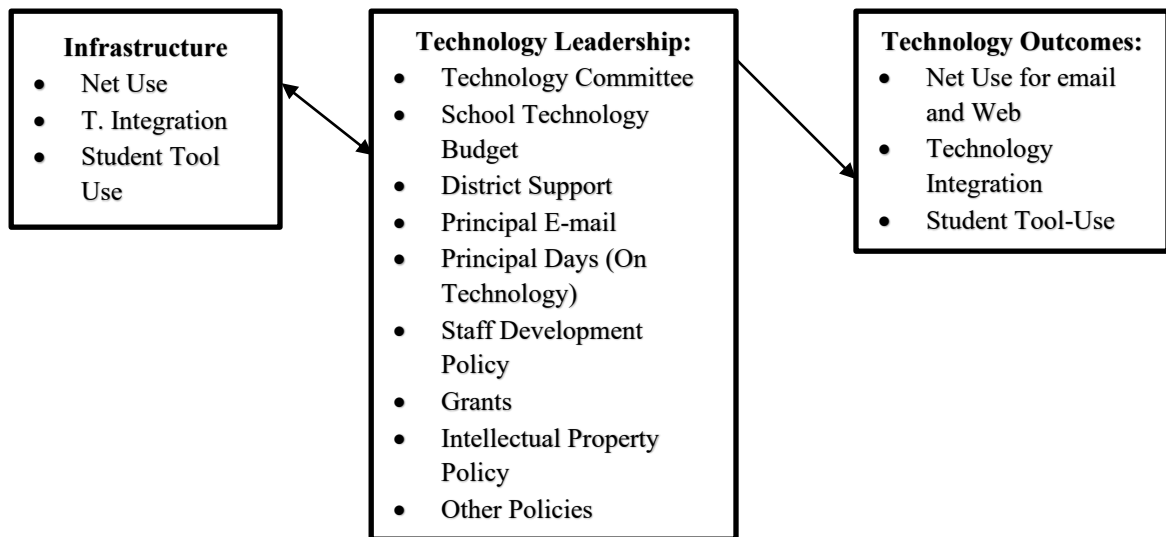
Technology infrastructure, according to them, is the literature on leadership and technology that tends to ignore infrastructure except to acknowledge that they are important as resources. Net use, technology integration, and student tools are the indicators of this infrastructure.

Under the technology leadership element, the authors included technology committee, school technology budget, district support, principal e-mail, principal days on technology, staff development policy, grants, intellectual property policy, and other policies.


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

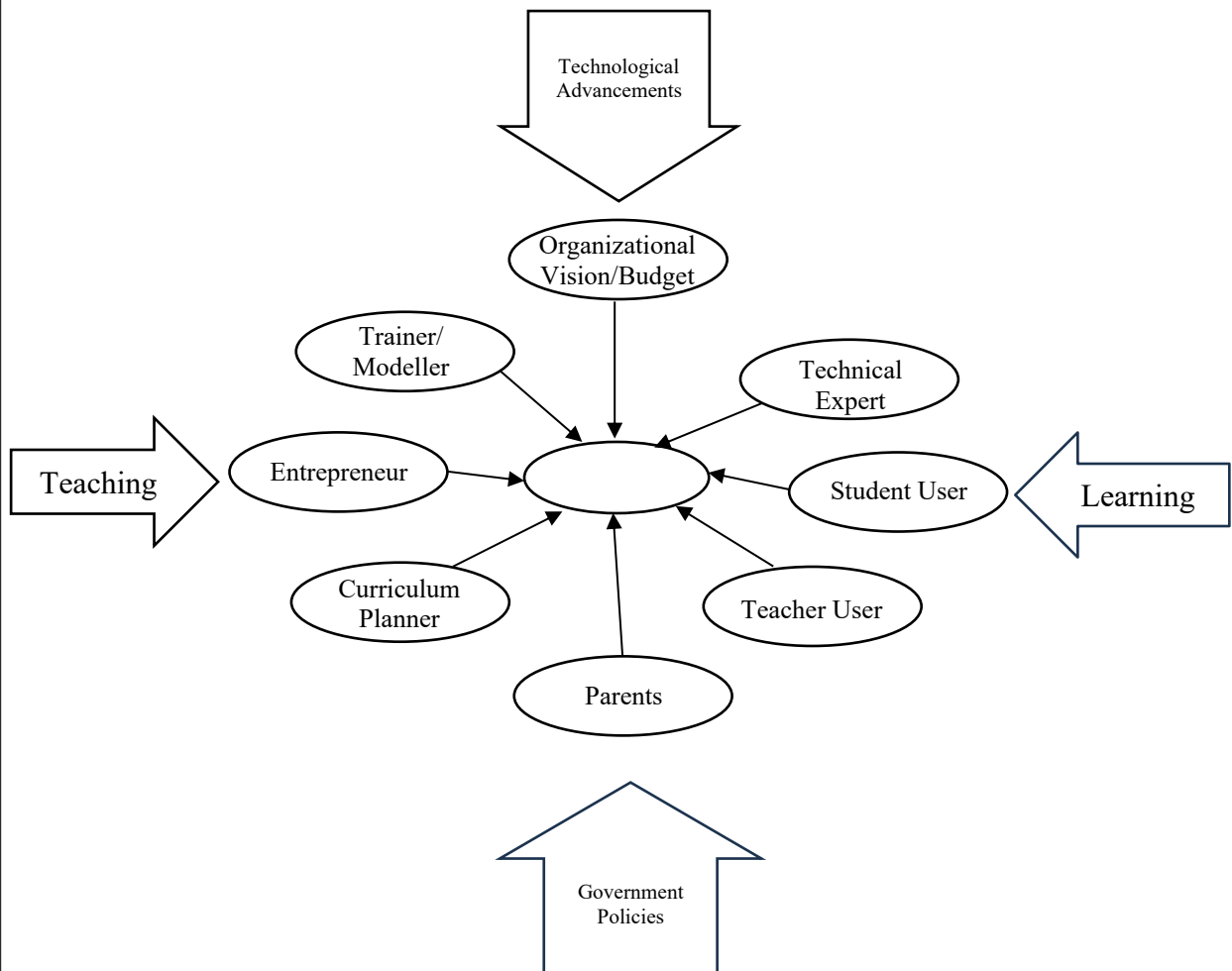
Indicators in the final element, technology outcomes, included net use for email and web, technology integration, and student tool use (Anderson & Dexter, 2005).

Figure 1
Anderson and Dexter's Model of Technology Leadership

Davies' Extended Model of Educational Technology Leadership

Davies (2010) has developed a technology leadership model that he calls the Extended Model of Educational Technology Leadership shown in Figure 2. The purpose of this model is primarily intended for effective use of technology collaboration, and its general impact to every member in an organization. Also, it provides a picture of the influence of external factors that might affect the organization. In the end, the model serves as the catalyst for the organizational change from central themes shared by the school leadership.

**Figure 2**

Davies' Extended Model of Educational Technology Leadership



Flanagan and Jacobsen's Role Responsibilities and Goals of Technology Integration

An additional technology leadership model comes from the work of Flanagan and Jacobsen (2003). This model, Role Responsibilities and Goals of Technology Integration shown in Figure 3, suggested that “technology leadership is much more than resource acquisition and management. Technology leadership has multiple dimensions given the complexity of schools as learning organizations” (Flanagan & Jacobsen, 2003, pp. 124-

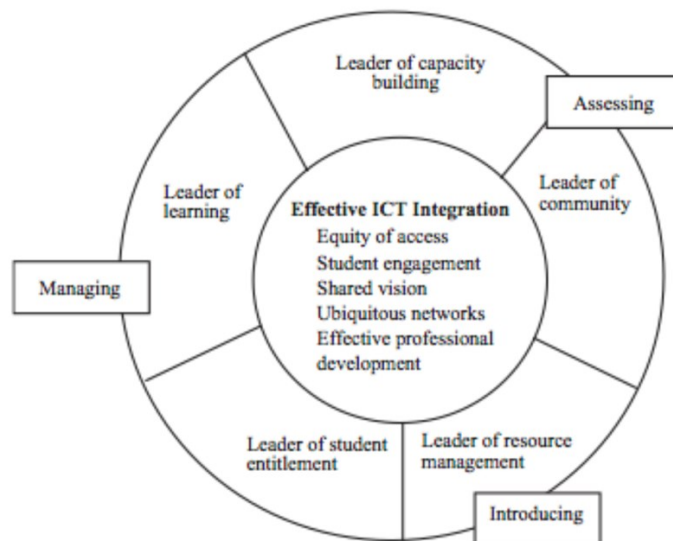


125). The main purpose of this model is to focus on describing roles, responsibilities, and goals of technology integration (Arafeh, 2015).

Flanagan and Jacobsen's model reiterated the goals of technology integration, and roles and responsibilities in the realization of these goals. The model contained five elements of effective ICT integration: equity of access, student engagement, shared vision, ubiquitous networks, and effective professional development (Flanagan & Jacobsen, 2003; Arafeh, 2015).

Figure 3

Flanagan and Jacobsen's Role Responsibilities and Goals of Technology Integration



Impact of Technology on Education Management and Leadership

Technology has become an integral part of people's daily lives, and the field of education is no exception. From administrative tasks to teaching methods, technology is revolutionizing the way educational institutions are run and how students learn. With the use of ICT, school administration made efficient and effective, facilitated sending and

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

replying to memoranda, provided a secured and retrievable storage of school data, made student registration easier, improved school management, and ensured communication open between principal and other school personnel (Olowonefa, 2022).

Akinwumi, Babalola, and Alegbeleye (2021) discovered that ICT is a significant contributor to effective administration of public secondary schools. They recommended the provision of necessary ICT resources and infrastructure for a better technological environment.

Ngozi, Ogunode, and Olatunde-Aiyedun (2022) observed that ICT is applicable to all aspects of education which clearly show positive influence. They also acknowledged the essence of ICT in school administration, management, planning, supervision, establishment of quality assurance, budgetary planning, human resource management, and research and development. Further, they believed that ICT provides better opportunities for school administrators, teachers, and staff to realize their organizational goals.

Minaz, Baki, Ozel, and Ay (2022) in their study found the following: (a) there is a strong correlation between the technological leadership and the school effectiveness, (b) human-centered, supportive, and visionary sub-dimensions of technological leadership have a positive and significant effect on school performance, and (c) communication and cooperation dimensions do not affect school effectiveness. They concluded that improving the technology leadership skills through adopting the human-centered approach of school administrators would significantly contribute to the enhancement of the school effectiveness.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Emmanuel (2021) revealed that ICT is very much utilized in human resource management such as receiving student's fees electronically, communicating teachers using electronic platforms, sending digital circulars/memoranda regarding school matters, registering school properties, checking the adequacy of resources, monitoring school finances, and managing relevant revenues and expenditures. The above-mentioned utilizations of ICT are the seven out of the 15 areas that are utilized significantly by the secondary school administrators.

Ukpoma (2019), lastly, seconded the usefulness of ICT among the secondary school administrators. He proved that ICT application is maximized in the areas of: (a) financial management such as generation of balance sheet, pay slip and audit reports, (b) student's evaluation support, and (c) other school reports. He found that they use the Point of Sale (POS) tool in maintaining and keeping records for better accessibility and generation of necessary reports.

Conclusively, the aforementioned literature highlight the similarities to the present study. The existence of the computerization programs internationally such as NEU PC Plus Programme, One Laptop Per Child (OLPC), eduCAT 1 x 1, FATIH project, and One Tablet Per Child (OTPC) are deemed to be significantly related to the DCP as a program of the DepEd Philippines. The underlying benefits of these international computerization programs are to: (1) provide computers and Internet access to households who cannot afford to purchase computers, (2) improve digital literacy in primary and secondary schools, (3) promote the use of technology in secondary schools, (4) provide infrastructure and e-content on all classes, students, and teachers, and (5) improve Thai

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

educational standards, respectively, which are quite similar to the main purpose of the DCP in the Philippines. Along with these remarkable similar benefits, the purpose of the current research endeavor was conceptualized.

As to the slight variations of these studies, the international studies have a broader scope focusing on the utilization of technology gadgets associated to the activities of school leaders, while the present research has a specific focus, which is on the school heads' level of support, manifestations and levels of technology leadership, and challenges entirely associated to the DCP implementation in the Schools Division of Isabela, DepEd Philippines.

1.3 Theoretical Framework

This study revolved around revealing the implementation of the DepEd Computerization Program (DCP) and the underlying concepts that were embedded in the perception of the benefits of DCP in the school and its utilization joint with the school's operation. All these concepts were assumed to be manifested by the technology leadership as one of the kernel variables of this study.

The Technology Acceptance Model (TAM) was adopted by the researcher to elaborate on the aspect of DCP as a package and as a tool for a school to operate properly and smoothly. TAM postulated that the acceptance of technology is predicted by the users' behavioral intention, which is, in turn, determined by the perception of technology's usefulness in performing the task and the perceived ease of its use. The acceptance and the use of information technologies can bring immediate and long-term benefits at organizational and individual levels, such as improved performance, financial

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

and time efficiency, and convenience (Foley Curley, 1984; Sharda, Barr, & McDonnell, 1988). The potential of technology to deliver benefits has long motivated Information System management research to examine the willingness of individuals to accept innovative technology (Davis, 1989). The research on the adoption of technology became of primary importance in the 1980s, which coincided with the growth of the use of personal computers.

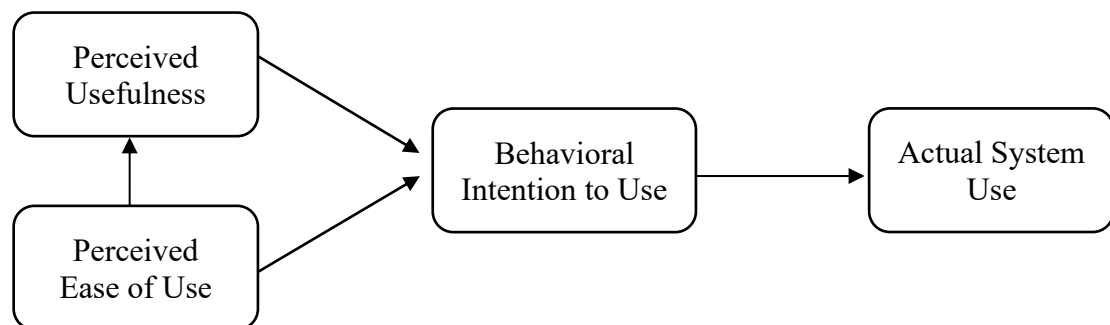
According to TAM, technology acceptance is a three-stage process whereby external factors (system design features) trigger cognitive responses (perceived ease of use and perceived usefulness), which, in turn, form an affective response (attitude toward using technology/intention), influencing use behavior (Davis, 1989; Davis, 1993). TAM represents the behavior as the outcome predicted by perceived ease of use, perceived usefulness, and behavioral intention (Figure 5). Perceived ease of use and perceived usefulness capture the expectations of positive behavioral outcomes and the belief that behavior will not be labor-consuming (Davis, 1989). According to a follow-up study, behavioral intention can be substituted by the attitude toward behavior (Davis, 1993), which is an affective evaluation of the potential consequences of the behavior (Ajzen, 2011). The higher the affective response, the higher the likelihood that the behavior will take place. The effect of perceived usefulness on actual use can be direct, underscoring the variable's importance in predicting behavior. Although perceived ease of use does not affect use behavior directly, it underpins the effect of perceived usefulness (Davis, 1993). The model implies that if an application is expected to be easy to use, the more likely it



will be considered useful for the user and the more likely it is that this will stimulate the acceptance of the technology (Davis, 1989; Davis, 1993).

The TAM as a model, which is shown in the figure below, shows the underlying concepts similar to the concepts of acquisition and utilization of DCP in the school.

Figure 4
Technology Acceptance Model



On the other hand, the main features of John Dewey's theory of education are also used as main theory of this study. Dewey suggested that individuals learn and grow as a result of experiences and interactions with the world. These interactions and experiences lead individuals to continually develop new concepts, ideas, practices, and understandings, which in turn are refined through and continue to mediate the learner's life experiences and social interactions (The Education Hub, 2019).

According to the principle of Dewey, the following underlying principles are aligned to this study:

1. *Interactions and communications focused on enhancing and deepening shared meanings increase potential for learning and development.* When school heads establish open communication between and among other school heads and

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

teachers, they can widen their perspective, and build deeper ideas for a better learning and development.

2. *Shared activities are an important context for learning and development.* If school heads and teachers only passively perceive a problem and do not experience the consequences in a meaningful, emotional and reflective way, then they are unlikely to adapt and revise their habits or construct new habits, or will do so only superficially.
3. *School heads and teachers learn and perform best when their interests are engaged.* It is important to develop ideas, activities and events that stimulate school heads and teachers' interest and to which teaching can be geared. Teaching and lecturing can be highly appropriate as long as they are geared towards helping school heads and teachers to analyze or develop an intellectual insight into a specific and meaningful situation.
4. *Learning always begins with one's emotional response, which spurs further inquiry.* Dewey advocated for what he called 'aesthetic' experiences: dramatic, compelling, unifying or transforming experiences in which school heads and teachers feel enlivened and absorbed.
5. *School heads and teachers should be engaged in active learning and inquiry.* Rather than teach school heads and teachers to accept any seemingly valid explanations, education ought to give school heads and teachers opportunities to discover information and ideas by their own effort in a teacher-structured environment, and to put knowledge to functional use by defining and solving

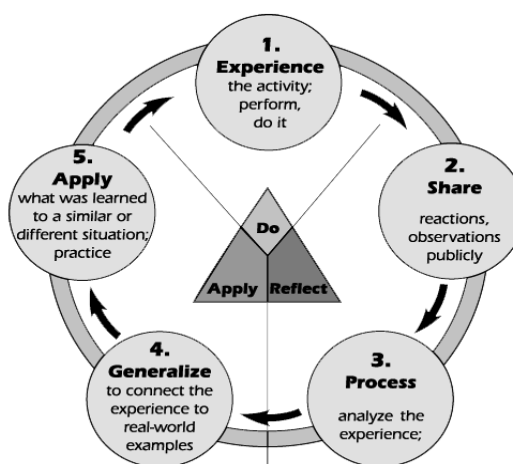
**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

problems, and determining the validity and worth of ideas and theories. As noted above, this does not preclude explicit instruction where appropriate.

6. *Inquiry involves school heads and teachers in reflecting intelligently on their experiences to adapt their habits of action.* Allowing students to explore possibilities and reflect about what they had done would cater a better experience of learning that could turn into habits of action.
7. *Education is a keyway of developing skills for democratic activity.* With the different experiences of school heads and teachers, they could provide a positive learning by recognizing and appreciating these experiences constructively considering the individual differences in one's belief and habit.

The above-mentioned principles can be summed up with the key words of John Dewey's theory of learning which are Do, Apply, and Reflect. This is shown in Figure 5 below.

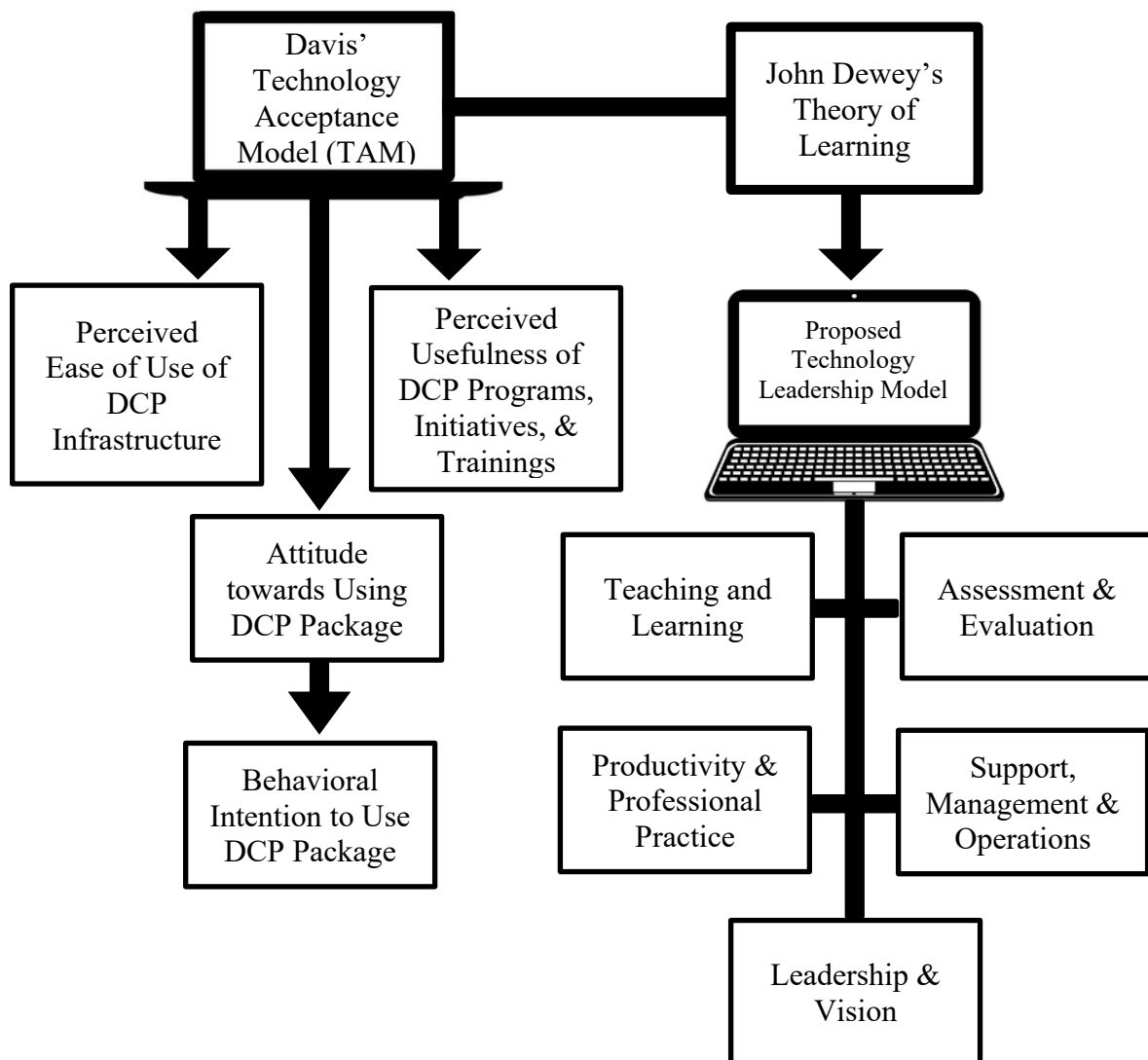
Figure 5*John Dewey's Theory of Learning*



With the coined concepts of the TAM as model of acceptance of the DCP and the underlying principle on theory of learning which the school heads and teachers may use and experience, the theoretical framework of this study was crafted as shown below.

Figure 6

The Theoretical Framework



To facilitate better understanding of the study, a theoretical framework is presented in Figure 6 illustrating the interrelationship of the conceptualized research variables of this

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

study. As shown, this study is anchored in the Technology Acceptance Model and John Dewey's theory of learning. TAM is adapted and served as one of the foundational concepts in building up the proposed technology leadership model. With the use of TAM, the researcher assumes that the perception of the respondents about the ease of use of DCP infrastructure exists as the school heads and teachers perform their duties and functions. In the perceived usefulness of DCP in the school, this usefulness is deemed to be affected by the DCP programs, initiatives launched and implemented by the school heads as well as the DCP trainings implemented by the division. The respondents' attitude towards using the DCP package and their innate behavioral intention to use this DCP package in their school are regarded to be associated with their degree of acceptance and these will be manifested with the existing level of technology leadership in the school where they are working with.

As to the theory of learning, the theory which says that people learn through "practical" approach is used as the second foundational concept of the framework of this study. The main concepts of this theory: Do-Apply-Reflect with the five (5) components experience, share, process, generalize, and apply are all regarded to be applicable in the proposed technology leadership model.

In the component *experience*, participants take part in educational activities. In this study, the dimension *Leadership and Vision* is assumed to be associated in the component *experience*. School heads, ICT coordinators, and teachers join in planning the process in the acquisition of DCP package, work as a team in planning the needed communication to the school stakeholders, and work as a school for the utilization of the DCP package.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

In the component *Apply*, the doer/participant connects his/her new talent to his/her daily life of work. In this study, the component *Apply* is theoretically viewed to be associated with the dimension *Teaching and Learning*. The DCP's usefulness can be evidently manifested in the daily teaching-learning activities of the faculty and learners. Likewise, the school head working as mentor may use DCP as the tool, applying his/her technology skills in giving technical assistance or guidance to his/her teachers and staff.

In the component *Share* in which the participants reflect on what happened throughout the event. The dimension *Assessment and Evaluation* is associated with the component *Share*. It is in this dimension where the school head and the ICT coordinator conduct assessment and evaluation and do the necessary analysis for them to see what went well and what went wrong in the DCP implementation in the school.

In the component *Process* in which participants examine how the activity was conducted. This component is associated with the dimension *Support, Management and Operation*. School heads in this dimension are expected to establish a comprehensive management plan, a support that will scaffold the implementation and the operation which entails all the necessary people involved and expected output.

In the component *Generalize*, participants show a connection between their activities and a life skill. This component is associated theoretically in this study with the dimension *Productivity and Professional Practice*. In this dimension, the school head establishes the connection of the DCP programs and activities with the benefits that can be derived from it like the technological learning skills which can be applied not only in

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

the school but also as extra source or means of livelihood of teachers and school heads as well.

All the mentioned variables are intertwined between and among themselves and would give a constructive and positive relationship between the level of technology leadership of school heads as they manifest these attributes in the form of school practices reflected in the different dimensions of the DCP which the researcher believes to come up with a comprehensive technology leadership model.

1.4 Research Problem and Hypothesis

This study aimed to evaluate the DepEd Computerization Program (DCP) implementation in the Schools Division of Isabela, DepEd, Philippines.

Specifically, it sought to answer the following research questions:

1. What is the profile of the respondents in terms of:

1.1 Personal Profile

1.1.1 length of service;

1.1.2 highest educational attainment;

1.1.3 other ICT-related ancillary task/s;

(for items 1.1.4, 1.2.1, and 1.2.2, school heads only)

1.1.4 number of schools handled;

1.2 School Profile

1.2.1 size of school;

1.2.2 type of school;

1.3 DCP Profile

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

(for items 1.3.1 – 1.3.7, ICT coordinators only)

- 1.3.1 number of computer-to-student ratios in an ICT class;
 - 1.3.2 number of ICT personnel;
 - 1.3.3 number of computer laboratories or e-classrooms;
 - 1.3.4 number of serviceable computers;
 - 1.3.5 number of non-serviceable computers;
 - 1.3.6 size of computer laboratory or e-classroom; and
 - 1.3.7 maintenance budget?
2. What is the school heads' level of support in the implementation of the DCP in terms of:
- 2.1 DCP initiatives;
 - 2.2 DCP trainings;
 - 2.3 DCP programs; and
 - 2.4 DCP utilizations?
3. What are the manifestations and levels of technology leadership of school heads along the following dimensions:
- 3.1 leadership and vision;
 - 3.2 teaching and learning;
 - 3.3 productivity and professional practice;
 - 3.4 support, management, and operation; and
 - 3.5 assessment and evaluation?
4. What are the challenges encountered in the implementation of DCP by the:

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

- 4.1 school heads;
 - 4.2 ICT coordinators; and
 - 4.3 teachers?
- 5. Is there a significant difference in the implementation of DCP when respondents are grouped according to their profile variables?
 - 6. Is there a significant relationship between the implementation of DCP and the type of school?
 - 7. What technology leadership model can be proposed based on the findings of the study?

Likewise, this study tested the following hypotheses:

- 1. There is no significant difference in the implementation of DCP when respondents are grouped according to their profile variables.
- 2. There is no significant relationship between the implementation of DCP and the type of school.

1.5 Significance of the Study

Through the findings and conclusions of this study, the significance lies on the utilization, first of all, by the **top management**. They can devise interventions that address emerging issues. They can develop not only policies on ICT but also DCP programs that would truly meet the challenges of the 21st century. Relatively, gathered data will provide them baseline in planning, monitoring, and implementing DepEd projects and activities related to integrating ICT in the school system.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

For the **school heads**, being the servant leaders in education, they will be guided in formulating future modifications and designing strategies towards the effective and successful utilization of DCP packages. Provided feedback will help them plan and be informed about the most appropriate in-service trainings needed to improve their technology leadership practices and school ICT culture.

In tandem with the school heads, the **ICT Coordinators**, who serve as the immediate support of the school heads, will be assisted in the implementation of ICT plans and in the formulation of action plans necessary to bridge the problems encountered in the implementation of DCP program in school settings based on the recommendations.

On the part of the **teachers**, the study serves as their basis in properly implementing DCP in education. Realizing the importance of ICT in the classroom will help them improve their teaching-learning process and develop methodologies suitable for them and their learners. Being informed of their ICT competence can thereby identify areas that need enrichment and further development. The expected results will be of considerable value in sustaining technology innovation which is vital in the performance of their duties and functions as becoming the 21st century educators.

Likewise, **learners**, being the kernel beneficiaries of any educational initiatives made in the management of the school, will be benefited through the advent of advanced technology in learning. Such results of the study will strengthen their appreciations to the technology leadership employed by the school leaders and stakeholders by proper utilization, maintenance, and sustainability of the DCP infrastructure.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

More so, **parents and stakeholders**, being the strongest partners, are expected to be enlightened about their responsibilities as far as ICT is concerned. Having an in-depth knowledge of the significance of DCP in education will further make them aware of how they are going to support their children in the successful implementation of ICT-related activities.

Lastly, **future researchers** who wish to venture into studies that revolve around the implementation of the DepEd Computerization Program (DCP) will have a concrete reference. Undertaking a similar study or related area of investigation will indeed give the right sense of direction since this research work envisions to eventually come up with a technology leadership model.

1.6 Scope and Limitations

The study was conducted in the Schools Division of Isabela across levels from elementary schools to senior high schools, which served as the research population. The school heads, the ICT coordinators, and the teachers at these schools were the primary respondents of this research endeavor.

Exclusion was made to a few school members of the research population such as: (1) public schools whose DCP packages were declared damaged due to natural calamities such as typhoons, (2) Technology-Vocational schools, (3) non-central elementary schools in the Division of Isabela, and (4) secondary schools as CHED laboratory schools.

Central school was chosen over other elementary schools or primary schools because of the underlying fact about central school that it is always the biggest school in the



district having the highest number of teachers, and assurance of having an ICT coordinator and one definite school head, who is usually a full-pledged school principal.

Schools offering senior high school programs but not declared as stand-alone senior high schools as per the records of the Schools Division of Isabela were not treated in the category of stand-alone senior high schools. Hence, the categories of the school respondents of this study were entirely dependent on the record provided by the ICT Unit of the division.

For the research respondents, district supervisors and newly appointed school heads of School Year 2023-2024 were likewise part of the delimitation.

As to the limitations of the study, the verification of the degree of honesty of the respondents in answering questions in both quantitative and qualitative instruments and the process of transcribing the possible Filipino verbal statements into English statements were the perceived variables beyond the control of the researcher.

1.7 Definition of Terms

For purposes of clarity and vividness of the usage, the following terms were technically and operationally defined according to what they convey in this study:

Ancillary Task. This refers to the ICT-related additional task/s performed by a school head, an ICT coordinator, or a teacher this current SY 2023-2024 in consideration of his/her professional expertise and experience such as: Information and Communication Technology (ICT), Brigada Eskwela, Oplan Balik Eskwela, Learner Information System (LIS), Enhanced Basic Education Information System (EBEIS), Disaster Risk Reduction Management (DRRM), School-Based Feeding Program (SBFP), Pantawid Pamilyang

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Pilipino Program (4Ps), Boy Scouts of the Philippines/ Girl Scouts of the Philippines (BSP/GSP), Catch-up Friday, Gulayan sa Paaralan, Reading, Journalism, Research, Sports, and others.

Assessment and Evaluation. This is one of the six (6) dimensions in the National Educational Technology Standards for Administrators. In this study, it refers to any form of technology comprehensively integrated in the K to 12 curriculum used for grading system and assessing performance of learners and school personnel.

Challenges. These refer to the problems/issues/concerns/hindrances encountered by school heads, ICT coordinators, and teachers that may alter effective implementation and sustainability of DepEd Computerization Program (DCP). In this study, these refer to the twenty-five (25) hindrances with 50% or more Mean Percentage Score (MPS) among the respondents.

DCP Initiatives. These refer to the school heads' initiated activities towards the efficient DCP implementation in the different public schools.

DCP Programs. These refer to the ICT-related school programs implemented by the school heads, ICT Coordinators, or teachers in the school/district.

DCP Trainings. These refer to the ICT-related school trainings/workshops conducted by the school heads, ICT Coordinators, or teachers in the school/district.

DCP Utilizations. These refer to the frequency of using and integrating DCP to the school operations, activities, and programs of school personnel.

DepEd Computerization Program (DCP). This is the main subject of concern in the study that refers to a DepEd program which aims to provide public schools with

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

appropriate technologies that would enhance the teaching-learning process and meet the challenges of the 21st century.

ICT Coordinator. This refers to any teacher who is designated as a DCP Coordinator.

Leadership and Vision. This is one of the six (6) dimensions in the National Educational Technology Standards for Administrators. In this study, it refers to any initiative, program, or activity of the school heads in establishing a shared vision, communicated strategic plan, and continuous evaluation for transforming learning with technology.

Maintenance budget. This refers to the financial allocation from the DCP fund for the repair and sustainability of the DCP package.

Manifestation and Level of Technology Leadership. This refers to the 40 statements used to describe the attributes of the school heads towards technology leadership.

Number of computer laboratories/e-classrooms. This refers to the number of declared ICT rooms for the DCP package.

Number of computer-to-student ratios in an ICT class. This refers to the average ratio of the received DCP package and the average number of students in the class.

Number of ICT personnel. This refers to the school personnel who have ICT teaching loads.

Number of non-serviceable computers. This refers to the accounted DCP computers that are declared non-functional, non-repairable, and recommended for



condemnation.

Number of schools handled. This refers to the maximum number of schools handled simultaneously by the school head within his/her 5-year residence based on DepEd rationalization plan.

Number of serviceable computers. This refers to the accounted DCP computers that are declared functional, maintained, and still usable for instruction.

Productivity and Professional Practice. This is one of the six (6) dimensions in the National Educational Technology Standards for Administrators. In this study, it refers to any activity or initiative of school heads in applying technology to enhance their professional practice and to increase their productivity and that of others.

School Head. This refers to the school leader appointed as principal, assistant principal, head teacher, teacher-in-charge, and officer-in-charge.

School Size. This refers to the size of the school based on the number of regular/permanent school personnel (school head, staff, and faculty) categorized as small, medium, large, or mega schools.

School Type. This refers to the type of school, whether elementary, integrated elementary and junior high, junior high, integrated junior high and senior high, or stand-alone senior high school.

Size of computer laboratory/e-classroom. This refers to the standard size of the DepEd computer laboratory, 9-meter wide by 18-meter length.

Support, Management and Operation. This is one of the six (6) dimensions in the National Educational Technology Standards for Administrators. In this study, it refers to

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

any program, or initiative of school heads in ensuring the integration of technology to support productive systems for learning and administration.

Teacher. This refers to any appointed school personnel as Teacher I, Teacher II, Teacher III, Master Teacher I, Master Teacher II, Master Teacher III, and Master Teacher IV assigned in a school who may have ancillary task/s.

Teaching and Learning. This is one of the six (6) dimensions in the National Educational Technology Standards for Administrators. In this study, it refers to any activity, or program of school heads in ensuring that curricular design, instructional strategies, and learning environments integrate appropriate technologies for optimal learning and teaching.

Technology Leadership Model. This is the expected output of the study which is deemed by the researcher as a tool in monitoring and evaluating the different aspects of DCP, school's technology preparedness, and technology leadership of school heads, ICT coordinators, and teachers.



CHAPTER 2

METHODS

This chapter details the research design, sampling and participants, research instrument and its validity and reliability, data gathering procedure, potential ethical issues, and statistical tools used in interpreting the data gathered from this study.

2.1 Research Design

This study employed the mixed methods explanatory sequential design. In this design, both the quantitative and qualitative data were collected from the respondents. The triangulation protocol was used to integrate quantitative and qualitative data in the study (Creswell, Clark, Gutmann, & Hanson, 2003).

The utilization of a researcher-made survey instrument, structured interview, and Focus Group Discussion (FGD) with the research participants was the main part of the research design to gather data that unveiled the current or actual situations. The structured interview, which contains closed-ended questions and focus group discussion, was used to triangulate the responses of the respondents in the survey instrument.

The study was conducted to reveal the actual situation of DCP by evaluating the DCP implementation among public schools in the Schools Division of Isabela towards the development of a technology leadership model.

2.2 Sampling and Participants

The population of the study composed of all the school heads, ICT coordinators, and teachers of the elementary and secondary schools in the Schools Division of Isabela.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Specifically, only the central elementary, integrated elementary and junior high, junior high, integrated junior high and senior high, and stand-alone senior high schools were chosen as the school respondents.

The study employed purposive sampling technique in getting the sample of the study. Only the DCP recipient-schools were included in the population of the study. Upon the availability of the DCP recipients in the division of Isabela, the selection of school-respondents which includes the school heads, ICT coordinators, and teachers, was done.

The Legislative District (LD) from LD 1 to LD 6 was used as the cluster of the school-recipients. To complete the needed school-respondents, the following procedures were done as follows: (a) every school was assigned to a unique number which served as the basis for the generated random number, and (b) every legislative district was represented by two elementary central schools, one junior high school, one stand-alone senior high school, one integrated elementary and junior high school, and one integrated junior and senior high school.

The selection of school respondents was entirely dependent on the provided list of the DCP recipient schools by the ICT Unit of the Schools Division of Isabela. The non-existence of a school in a particular category was replaced by another school in another category in the same legislative district.

The detailed lists of schools involved in this study are cited in Tables 2.1 to 2.5 on the next page.


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Table 2.1 shows the elementary central school respondents. Out of the 50 central schools in the division, 24 percent of them are chosen, comprising two central schools per legislative districts, making a total of 12 elementary central school respondents. One central school from Delfin Albano, and one central from Tumauni represented the nine central schools in LD1. A central school from Gamu, and a central school from Benito Soliven represented the six central schools in LD2. Central schools from Cabatuan and San Mateo represented the 12 central schools in LD3. Central schools from Cordon and Jones represented the eight central schools in LD4. A central school from Luna, and one central school from Roxas represented the nine central schools of LD5. Lastly, two central schools from San Isidro represented the six central schools of LD6.

Table 2.1
Elementary Central School Respondents

School	District	Legislative District	Percentage (School : LD Schools)
Delfin Albano Central School	Delfin Albano	1	2:9 (22.22 %)
Tumauni South Central School	Tumauni (South)	1	
Gamu Central School	Gamu	2	2:6 (33.33 %)
Benito Soliven Central School	Benito Soliven	2	
Cabatuan West Central School	Cabatuan (West)	3	2:12 (16.67 %)
San Mateo East Central School	San Mateo (South)	3	
Cordon South Central School-Main	Cordon (South)	4	2:8 (25.00 %)
Jones West Central School	Jones (West)	4	
Luna Central School	Luna	5	2:9 (22.22 %)
Roxas West Central School	Roxas (West)	5	
San Isidro West Central School	San Isidro (West)	6	2:6 (33.33 %)
San Isidro East Central School	San Isidro (East)	6	
Total = 12			12:50 (24.0 %)


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Table 2.2 presents the integrated elementary and junior high school respondents. As vividly shown, six out of the 51 integrated elementary and junior high schools are chosen. Specifically, the six integrated schools are from Tumauini of LD1, Naguilian of LD2, Angadanan of LD3, Cordon of LD4, Aurora of LD5, and San Guillermo of LD6.

Table 2.2
Integrated Elementary and Junior High School Respondents

School	District	Legislative District	Percentage (School : LD Schools)
Lapogan Integrated School	Tumauini (South)	1	1:8 (12.5 %)
Surcoc Integrated School	Naguilian	2	1:21 (4.8 %)
Lomboy Integrated School	Angadanan (West)	3	1:8 (12.5 %)
Wigan Integrated School	Cordon (North)	4	1:3 (33.33 %)
Bagnos Integrated School	Aurora	5	1:7 (14.29 %)
Colorado Integrated School	San Guillermo	6	1:4 (25.00 %)
Total = 6			6:51 (11.76 %)

Table 2.3 displays the junior high school respondents. As reflected, four junior high schools are chosen to represent the 20 existing junior high schools in the division. LD3 and LD6 junior high schools were not included because during the time of the conduct of the survey, interview, and FGD, the aforementioned legislative districts were under the Alternative Delivery Mode (ADM) of the Local Executive Orders (See Appendices U, V, W, X, Y, and Z), and the DepEd Order No. 037, s. 2022 (See Appendix AA). As to the respondents, one national high school represented the five junior high schools in LD1. A rural school represented the junior high schools in LD2. One secondary school out of the seven junior high schools represented the LD4. Lastly, one national high school represented the three junior high schools in LD5.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Table 2.3*Junior High School Respondents*

School	District	Legislative District	Percentage (School : LD Schools)
Aneg National High School	Delfin Albano	1	1:5 (20.00 %)
Gamu Rural School Annex-Junction Upi Annex	Gamu	2	1:5 (20.00 %)
Dorganda High School	San Agustin	4	1:7 (14.29 %)
Doña Aurora National High School	Aurora	5	1:3 (33.33 %)
Total = 4			4:20 (20.00 %)

Table 2.4 reveals the integrated junior high and senior high school respondents. Eight out of 89 integrated junior high and senior high schools are chosen. Specifically, these eight schools are composed of one national high school of Tumauni in LD1, a national high school of Gamu in LD2, a region high school and a national high school of Alicia in LD3, a national high school of Cordon in LD4, one national high school of Burgos in LD5, and two national high schools coming from Echague and San Isidro in LD6.

Table 2.4*Integrated Junior and Senior High School Respondents*

School	District	Legislative District	Percentage (School : LD Schools)
Tumauni National High School	Tumauni (South)	1	1:20 (5.00 %)
Mabini National High School	Gamu	2	1:13 (7.69 %)
Palayan Region High School	Alicia (South)	3	2:17 (11.76 %)
Alicia National High School	Alicia (East)	3	
Cagasat National High School	Cordon (South)	4	1:10 (10.00 %)
Burgos National High School	Burgos	5	1:19 (5.26 %)
Don Mariano Marcos National High School	Echague (South)	6	2:10 (20.00 %)
San Isidro National High School	San Isidro (East)	6	
Total = 8			8:89 (8.99 %)


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Table 2.5 views the stand-alone senior high school respondents. The three school respondents of this study are evidently taken from the only stand-alone senior high school in SDO Isabela of LD1 and in San Mateo of LD3, and one out of the two stand-alone senior high schools in Aurora of LD5.

Table 2.5
Stand-Alone Senior High School Respondents

School	District	Legislative District	Percentage (School : LD Schools)
Isabela Sports Senior High School	SDO- Isabela	1	1:1 (100.00 %)
Salinungan Stand-Alone Senior High School	San Mateo (North)	3	1:1 (100.0 %)
Aurora Stand-Alone Senior High School	Aurora	5	1:2 (50.00 %)
Total = 3			3:4 (75.00 %)

However, as to school personnel, it can be gleaned based from Table 2.6 on the next page that every elementary central school, junior high school, or stand-alone senior high school is represented by five teachers, one ICT coordinator, and the school head. Meanwhile as to integrated schools (integrated elementary and junior high school, and integrated junior and senior high school), it is represented by six teachers, one ICT coordinator, and the school head.


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Table 2.6
School Personnel Respondents

School Category	Number of Teacher-Respondents	Number of ICT Teacher-Respondents	Number of School Head-Respondents	Total School Personnel Respondents
Elementary Central Schools	60	12	12	84
Integrated Elementary & Junior High Schools	36	6	6	48
Junior High Schools	30	6	6	42
Integrated Junior & Senior High Schools	36	6	6	48
Stand-Alone Senior High Schools	15	3	3	21
Total	177	33	33	243

All technical-vocational schools (TVL) in the Division of Isabela were excluded in the selection because they are operated by special laws and have special ICT programs. Likewise, public DCP recipient schools in the coastal areas, specifically Palanan, Maconacon, and Divilacan District schools, were excluded due to the record given by the ICT Unit of Schools Division of Isabela that natural calamities like Typhoon Lawin damaged the DCP packages received by these schools.

Only the central schools were included in the selection for the elementary level.

2.3 Instruments

The three sets of questionnaires had the following parts: (1) *Personal Profile*. This determined the respondents' length of service, highest educational attainment, other ICT-related ancillary task/s, and number of schools handled; (2) *School profile*. This assessed the school heads' school size and type; (3) *DCP Profile*. This determined the school respondents' quantitative data along the following: computer-to-student ratio in an ICT

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

class, ICT personnel, computer laboratory/e-classroom, serviceable and non-serviceable computers, computer laboratory/e-classroom size, and maintenance budget; (3) Level of Support. This 20-item researcher-made survey assessed the school heads' level of support in terms of DCP initiatives, DCP trainings, DCP programs, and DCP utilizations; (4) Technology Leadership Level. This survey questionnaire was adapted from Garza's study (2023) to measure the level of technology leadership of school heads. This was also formulated based on the National Education Technology Standards for Administrators (NETS-A); and (5) DCP Challenges. This identified the problems/issues/concerns/hindrances encountered by the school heads, ICT coordinators, and teachers in the DCP implementation.

To triangulate the veracity of the data gathered, an in-depth interview guide with 10 specific questions and FGDs consisting of 16 questions were formulated that divulged the school heads' level of support along DCP initiatives, DCP trainings, DCP programs, and DCP utilizations; manifestations and levels of technology leadership along leadership and vision, teaching and learning, productivity and professional practice, support, management and operation, and assessment and evaluation; and challenges in the DCP implementation.

Hence, to establish a thorough analysis of every item of the research instrument, the four phases of validation were done. For the face validity of the instrument, it was established through the expertise and knowledge of the Associate Dean for Faculty of Teacher Education of PNUNL. For the content validity, it was affirmed by two faculty members of the graduate program of PNUNL, and two external validators, the University

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Director for Instruction of ISU-Main Campus, and the Program Chair for BTLEd of ISU-Cabagan. Lastly, for the construct and concurrent validity, they were determined by the research statistician, a DepEd faculty member of Jones Rural School-Main.

As to gender, ethnicity, or cultural sensitivity, each of the validators has given the right to comment and suggest to ensure the fairness of the research instrument.

Pilot testing was conducted as requested by one of the validators to establish the reliability index of the questionnaire. The schools of San Manuel District were used for pilot testing. A random sample of 4 school heads, 4 ICT coordinators, and 29 teachers from the three (3) public schools of San Manuel District, San Manuel, Isabela namely: San Manuel Central School, Malalinta National High School, and Callang National High School, were considered.

Using the appropriate statistical tool, the McDonald's omega (ω) was used to quantify the reliability of the questionnaire's components. The acceptability of the research instrument with respect to its reliability was based on the idea of Kline (1999), in which values in the regions of 0.7–0.8 were regarded as reliable. The computed reliability indices of the research instrument for DCP initiatives ($\omega = 0.803$), DCP trainings ($\omega = 0.780$), DCP programs ($\omega = 0.848$), DCP utilizations ($\omega = 0.883$), and technology leadership manifestations and levels ($\omega = 0.951$) of the research variables in the instrument exhibited high reliability. Please see Appendix G.



2.4 Data Gathering Procedure

To gather the data from the respondents, the researcher used the following steps:

First, the researcher sought permission and approval from the Schools Division Superintendent for the conduct of the study. Upon approval, the researcher requested the list of DCP recipients from the Information Technology (IT) officer of the division.

Second, the researcher executed the stratified proportional random sampling in choosing the required number of respondents. Upon selection, the researcher requested permission and approval from the Public Schools District Supervisors to implement the study to the different schools.

Third, the researcher administered the instrument to the randomly chosen respondents. After retrieval of the instrument, random structured interviews were undertaken to some of the school heads, ICT coordinators, and teachers. Further, FGDs were conducted among the teacher respondents for the triangulation of the data and establishment of the instrument's reliability.

Finally, the data were tallied, coded, analyzed, interpreted, and presented in table form for statistical treatment. The transcribed verbal statements of the respondents from in-depth interviews and FGDs were also presented to them for validation and approval prior to the needed thematic analysis (See Appendices AE-AH). Thereafter, a summary of the results was made, remarkable conclusions were drawn, and significant recommendations were crafted. A final report was therefore written.



2.5 Data Analysis

The data gathered was analyzed in both quantitative and qualitative ways. In the quantitative way of analyzing the data gathered through the survey form, the following statistical tools were employed to answer the specific questions in the study:

For the profile of the respondents, descriptive statistics such as frequency, percent, and mean distribution was used.

For the level of support and level of technology leadership, mean and standard deviation were utilized.

For clearer interpretation of data, the arbitrary scale was established per set of variables, as follows:

Table 2.7
Range of Values of Descriptive Interpretations

Range	DCP Initiatives	DCP Trainings, Programs, and Utilizations	Technology leadership
1.00–1.49	Beginning	Very low	Not at all
1.50–2.49	Developing	Low	Somewhat
2.50–3.49	Proficient	High	Moderately
3.50–4.00	Advanced	Very high	Fully

For the DCP challenges, descriptive statistics was employed. Any statement with 50 percent or higher was concluded as a challenge in DCP implementation.

For the test of significant differences in the implementation of DCP, the factorial analysis of variance was utilized. The F-statistic and its associated p-value were used to determine significant differences in each comparison. Moreover, partial eta squared, an effect size index, was calculated to determine the magnitude of the difference in each



comparison. It was interpreted using the guidelines from Kirk (1996): .01 means small difference, .06 means moderate difference, and .14 means large difference.

For the test of significant relationship or association between the implementation of DCP and the type of school, the chi-square test of association was used. In this procedure, Fisher-Freeman-Halton's exact test and its associated p-value was used to assess the significance, and the Cramer's V to assess the strength of the correlation.

Test of significance was set at 0.05 margin of error, and the SPSS for Windows was used for the calculation.

For the triangulation and analysis of the data from the in-depth interviews and FGDs, the five-step thematic spiral analysis of Creswell and Poth (2018) and the six-step thematic analysis of Braun and Clarke (2017) were considered as bases in data analysis. However, due to the familiarity of the steps, the Braun and Clarke (2017) method of analyzing qualitative data was used. For Phase 1, the researcher familiarized the main content of every question in the interview. Phase 2 required the researcher to transcribe all the answers of the respondents grouping them thematically and generating code from each group. For Phase 3, the researcher analyzed the concept as the main theme of every coded answer. For Phase 4, themes drawn from the coded answers were then re-analyzed by associating to the existing themes in the different related studies. For Phase 5, the researcher with the technical assistance of his adviser labelled these themes according to the variables of the study. On this part, the relevance of these themes to the main variables was reflected. Lastly, Phase 6 required the researcher to present the respondents'


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

answers according to the themes with their labels or names in association with the research variables.

The six recursive steps of data analysis by Braun and Clarke (2017) are shown below:

Phase 1: Familiarization of the Main Content in every Question

In-depth Interview Questions for School Heads and Themes

In-Depth Questions	Theme	Sub-theme
1. What comes to your mind by the term DCP? What made you think so?	Familiarity of DCP	DCP as a program DCP as a package
2. Do you believe that DCP improves school performance?	Improvement of school performance	Effect of DCP in school as an educational institution Effect of DCP in specific areas of school's operation
3. How does DCP improve your school significantly?	Areas of improvement	Key feature of school with DCP
4. Does DCP transform you? How do you show it?	Effect of DCP	Personal benefits of DCP
5. Do you think that DCP has improved the quality of teaching of your teachers? What is the most distinguished feature of that change?	Improvement of quality of teaching	DCP as part of teaching DCP as part of teaching assessment
6. If you were a member of the top management planning team, how would you plan the DCP implementation?	Planning of DCP implementation	School's Plan with DCP


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

7. What is the most crucial problem you experienced as school head because of the existence of DCP in your school? How did you address it?	Crucial problem and means of solving	Crucial problems in DCP programs Crucial problems in DCP trainings Crucial problems in DCP utilization
8. Do your stakeholders support DCP? If yes, in what way do they give support? If not, what made them non-supporters of DCP? Do they have issues on DCP?	Stakeholders support on DCP	Alumni Stakeholders' support SPTA Stakeholders' support LGU Stakeholders' support
9. If your school was not selected as DCP recipient, do you still initiate to have ICT gadgets? What will be your primordial step?	Initiatives to have ICT gadget	School head initiative
10. Do you think DCP has achieved its goal? If yes, which one is the most successful? If not, which part of the implementation went wrong?	DCP implementation success	DCP implementation success

Focus Group Discussion Questions for Teachers and Themes

FGD Questions	Theme	Sub-theme
1. What do you know about DCP?	Familiarity of DCP	DCP as a program DCP as a package
2. Have you seen or felt the preparations made by your school head to acquire DCP package?	School's preparation for DCP acquisition	Initiatives in school's preparation for DCP acquisition
3. Is DCP a part of your instruction? How do you integrate it?	DCP integration in instruction	DCP as part of teaching



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

4. Do you have trainings on DCP? How frequently do you attend such trainings?	DCP trainings	DCP trainings
5. What are the benefits of DCP in you as a teacher aside from its importance in your daily teaching?	Personal benefits of DCP	DCP importance
6. Does your school have stable internet connectivity? Do you access it for free?	Internet connectivity	Internet
7. Does your school ask for DCP financial support from your stakeholders? How often?	Stakeholders' DCP financial support	Alumni Stakeholders' support SPTA Stakeholders' support LGU Stakeholders' support
8. Does your school head implement DCP LAC sessions? How often do you attend?	DCP LAC sessions	DCP trainings
9. Does your school advocate DCP? In what sense is it shown/evident?	DCP advocacy	DCP advocacy
10. Does your school provide School Improvement Plan (SIP) Research-Based Data? How is DCP related to it?	DCP in SIP	DCP as part of school plan
11. Does DCP boost your morale as a teacher? What evidence do you have?	Personal benefits of DCP	Personal benefits of DCP
12. Do you use DCP in your assessment? In what way?	DCP in assessment	DCP as part of teaching assessment


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

13. Which is better: DCP or your personal ICT gadget? Why?	Comparison of DCP and personal ICT resources	Personal ICT gadget
14. Do you use DCP as your school data bank for your Human Resource Information System (HRIS)? How accessible is it?	DCP utilization for school personnel	DCP utilization for personnel
15. What aspects of DCP (package, program, implementation) do you believe need improvement to meet the school needs? How will you do it?	DCP aspect that needs improvement	DCP areas in school operations
16. Is DCP maintenance and utilization one of the priorities of your school? How can you say so?	DCP maintenance and utilization in school's priority	DCP budget

(For Phases 2 to 4, please refer to Appendices AI to AS for Verbal Statements/Responses of the Respondents)

Phase 2: Transcribing of Verbal Statements/Responses of Respondents and Generating Codes

Phase 3: Data Analysis based on Coding

Phase 4: Re-Analysis and Thematic Groupings

(For Phases 5 and 6, please refer to Chapter 3)

Phase 5: Associating Themes to Research Variables

Phase 6: Presenting Thematic Data

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

2.6 Potential Ethical Issues

In the conduct of the library works and meta-analysis for the realization of this research, all authors and sources were given due acknowledgment through proper referencing. Proper protocol and channeling with duly coordinated letters of communication were done to give respect and recognition to the person in authority in the different fields of concern of this study.

With regard to the names of the schools and school heads/ICT coordinators/teachers as samples of this study, all data were kept confidential in relation to the Data Privacy Act of 2012.

Each randomly chosen participant was given a proper letter of communication expressing the details of data privacy of the data gathered from them as well as the means and procedures for conducting the surveys and interviews. Actual questions for the in-depth interviews and FGDs were only asked during the conduct of these activities.

**CHAPTER 3****RESULTS AND DISCUSSION**

Presented and discussed in this chapter are the data gathered, interpretations, and corresponding valuable analysis. A thorough discussion of each table is shown following the order of the research questions specified in the statement of the problem.

Problem 1. Profile of the Respondents**1.1 Personal Profile**

Table 3.1 presents the descriptive statistics on the respondents' length of service categorized into teachers, ICT coordinators, and school heads. Based on the table along the category of teachers, it can be notably seen that there are proportions of teachers who are deemed to be neophytes in the service especially the teachers who serve below 1 year (1.7%), and the sophomore educators in the field who are employed from 1 to 10 years (45.8%) as regular/permanent teachers of the DepEd. These 81 teachers are involved in the preparation and acceptance of DCP package in their respective schools. This is followed by 19.8 percent or 35 teachers under 11 to 20 years of service, and 17.5 percent or 31 pioneer teachers having 21 to 30 years in the service. Lastly, the remaining proportion, 15.3 percent of pillar teachers who belong to the group of above 30 years in the service are the ones who experienced teaching endeavor without the presence of the DCP package.

The quantitative findings above conform to the responses of the teacher respondents during their FGDs such as RT4 who has 6 months in the service as permanent; RT5, RT1 and RT2 who have rendered from two to seven years; RT17 who has served 18 years;

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

RT3 and RT12 who have rendered 26 years; and RT9 and RT11 who have served for more than thirty years (See Appendix AI).

This group of respondents proves the veracity of the findings that there are pioneer teachers who rendered 21 to 30 years of teaching, and novice educators who had their appointment of permanency within the current school year.

For teachers who have special assignments as ICT coordinators, the distribution varies, with 48.5 percent having 1 to 10 years of service, 27.3 percent with above 30 years, 18.2 percent with 11 to 20 years, and 6.1 percent with 21 to 30 years. A remarkable result shown in the table is the 27.3 percent of educators who are still in the service working even though they have rendered 30 years of service or more. This group of teachers significantly shows that they can adapt to the demands of digitalization by accepting the roles and functions of ICT coordinators.

With respect to the school head respondents, most of them have served more than three decades as the school head (39.4%), followed by the two-to-three-decade school heads (33.3%), the one-to-two-decade school heads (24.2%), and the remaining proportion (3%) is occupied by 1-decade school heads. It can be deduced that school heads of the division are honed through a long range of experience in leadership, leading the schools to acquire technology packages to adapt to the demands of 21st-century education. Moreover, the length of service of school heads explicitly manifests that they have been working with regular/permanent teachers who fortunately passed the requirements of principalship and had the opportunity to manage schools through Special Order from the Superintendent.

**Table 3.1***Descriptive Statistics on the Respondents' Length of Service*

Profile	Teachers		ICT coordinators		School heads	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Above 30 years	27	15.3	9	27.3	13	39.4
21 to 30 years	31	17.5	2	6.1	11	33.3
11 to 20 years	35	19.8	6	18.2	8	24.2
1 to 10 years	81	45.8	16	48.5	1	3.0
Below 1 year	3	1.7	0	0.0	0	0.0

Table 3.2 shows the descriptive statistics on the respondents' highest educational attainment categorized into teachers, ICT coordinators, and school heads. Based on the table, a diverse distribution is observed among the respondents. Majority of the teachers who started their Master's degree is 53.1 percent while those who had finished their Master's degree is 24.9 percent. Additionally, teachers who had started their post education-doctorate degree is 9 percent, while those who had finished their Doctorate degree is 5.1 percent. Such findings are similar to the group of ICT coordinators wherein most of them, 54.5 percent have started their Master's degree, 21.2 percent have finished their Master's degree, same proportion (21.2%) have started their Doctorate degree, and lastly, 3 percent of ICT coordinators have finished their Doctorate degree. These findings remarkably show that teachers and ICT coordinators are education advocates who keep on continuing their learning and skills making them capable of catering quality education to the learners.

As to the school head respondents, it is good to note that the majority of them hold a doctorate degree (54.5%), followed by those with doctorate units (21.2%), Master's


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

degree holders (9.1%), and with Master's units (15.2%). These results imply that school heads have manifested the essence of leadership through modeling making their teachers convinced to push through their graduate studies as well, and by compelling themselves to become better school administrators and more effective instructional leaders. Moreover, such variations in educational background may influence the approach to ICT integration and policy implementation within schools, with higher academic qualifications potentially correlating with greater expertise and leadership capabilities.

Further, the above findings, which reveal that the highest educational attainment of the majority of the school heads is being a Doctorate degree holder, can be used to draw a conclusion that they are most capable in implementing the proposed technology leadership model of this academic endeavor.

Table 3.2
Descriptive Statistics on the Respondents' Highest Educational Attainment

Profile	Teachers		ICT coordinators		School heads	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Doctorate degree holder	9	5.1	1	3.0	18	54.5
Master's degree holder with doctorate units	16	9.0	7	21.2	7	21.2
Master's degree holder	44	24.9	7	21.2	3	9.1
Bachelor's degree holder with master's units	94	53.1	18	54.5	5	15.2
Bachelor's degree holder	14	7.9	0	0.0	0	0.0

Table 3.3 indicates the descriptive statistics on the respondents' other ICT-related ancillary tasks. Based on the table, most of the teachers (25.7%) have other coordinatorships related to ICT, not listed above such as: Supreme Elementary Learner

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Government (SELG)/Supreme Secondary Learner Government (SSLG) Adviser, Academic Coordinator (English Coordinator, Science Coordinator, or Grade-level Coordinator), Youth for Environment in Schools Organization (YES-O) Adviser, Water, Sanitation and Hygiene in Schools (WINS) Coordinator, National Drug Education Program (NDEP)/*Barkada Kontra Droga (BKD)* Coordinator, Ecological Solid Waste Management (ESWM) Coordinator, and Senior High School (SHS) focal person. This is followed by Journalism, which is occupied by 21.1% of teachers, Reading (18.3%), Boy/Girl Scouts of the Philippines (BSP-GSP) (13.1%), Brigada Eskwela (11.4%), Catch-up Friday (10.9%), and Sports (10.9%). This means that despite the mandate of the Civil Service Commission (CSC), which is 6-hour teaching and 2-hour instructional material preparation, there are still so many non-academic ancillary tasks held by teachers, which compel them to manifest their ICT skills, especially in the submission of reports.

Such quantitative findings adhere to the statements of the teacher respondents during their FGD such as RT6 who has the designation as the Grade 5 coordinator and SELG adviser, RT10 as the Social Science coordinator and SSLG adviser, RT8 as the SBFP and WINS coordinator, RT13 as the Grade 9 level coordinator and DRRM coordinator, RT14 as the English Coordinator, Catch-up Friday and Reading Coordinator, while others have only one designation like RT7 as the Journalism coordinator, and RT15 as the Senior High School focal person (See Appendix AJ).

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

The FGD results validate the data presented above which shows that it is a normal situation for teachers to have ancillary tasks such as coordinatorship in Reading, Journalism, and SBFP aside from their teaching loads.

With regard to ICT coordinators' ancillary tasks, coordinatorship on ICT (34.7%) serves as the highest additional tasks assigned by their school heads. This is followed by being the LIS coordinator (25.3%), Enhanced Basic Education Information System (EBEIS) coordinator (16.8%), *Pantawid Pamilyang Pilipino Program (4Ps)* coordinator (4.2%), and Boy/Girl Scouts of the Philippines (BSP-GSP) coordinator (4.2%). This implies that ICT coordinators are extensively involved in ICT-related tasks, indicating their central role in facilitating technological initiatives within schools.

As regards to school heads, it reveals that their primary ancillary task is *Brigada Eskwela* (34.6%), followed by ICT and Research (both 19.2%), Learner Information System (LIS) and Catch-up Friday (both 15.4%), and Sports (11.5%). This is due to their additional role as school heads which is to improve and sustain the physical resources of their schools. They have an effective data resources for school personnel and learners through their ICT and research roles. They have maintained Catch-up Friday program for the quality learning of learners through this program.

A remarkable result lies in the *Gulayan sa Paaralan* ancillary task, wherein none of the school heads or ICT coordinators holds this additional task. This is because the task is shouldered by a teacher who usually handles higher grade level students who serve as his/her manpower in implementing the *Gulayan sa Paaralan* program.


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

The given list of ICT-related ancillary tasks assigned to the different respondents of this study divulged the truth in the field that there are so many additional roles performed by the teachers and ICT coordinators aside from being the classroom teachers as their primary roles, proving them to be multi-talented employees of the DepEd who are facing the multi-disciplinary aspects of the formal education in the country.

Table 3.3
Descriptive Statistics on the Respondents' Other ICT-Related Ancillary Task/s

Profile	Teachers		ICT coordinators		School heads	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Information and Communications Technology	10	5.7	33	34.7	5	19.2
Brigada Eskwela	20	11.4	2	2.1	9	34.6
Oplan Balik Eskwela	10	5.7	1	1.1	2	7.7
Learner Information System	11	6.3	24	25.3	4	15.4
Enhanced Basic Education Information System	6	3.4	16	16.8	2	7.7
Disaster Risk Reduction and Management	11	6.3	1	1.1	1	3.8
School-Based Feeding Program	10	5.7	0	0.0	2	7.7
Pantawid Pamilyang Pilipino Program	7	4.0	4	4.2	0	0.0
Boy/Girl Scouts of the Philippines	23	13.1	4	4.2	2	7.7
Catch-Up Friday	19	10.9	0	0.0	4	15.4
Gulayan sa Paaralan	11	6.3	0	0.0	0	0.0
Reading	32	18.3	2	2.1	2	7.7
Journalism	37	21.1	2	2.1	2	7.7
Research	14	8.0	2	2.1	5	19.2
Sports	19	10.9	2	2.1	3	11.5
Others	45	25.7	2	2.1	3	11.5

Table 3.4 depicts the descriptive statistics on the respondents' number of schools handled. Based on the table, it indicates that most of the school heads (45.5%) handled one school, followed by the school heads who handled two schools (30.3%), and school



heads who handled three or more schools (24.2%). This implies that most of the school heads are beginners in managing their schools, and they have slightly experienced the effect of rationalization plan of DepEd, which mandates that the school heads will stay at most five years as school heads in a particular school.

Table 3.4

Descriptive Statistics on the Respondents' Number of Schools Handled

Profile	School Heads	
	<i>f</i>	%
4 or more schools	4	12.1
3 schools	4	12.1
2 schools	10	30.3
1 school	15	45.5

1.2 School Profile

Table 3.5 highlights the descriptive statistics on the school profile's size of the school. It is evident based on the table that majority of the school heads manage a medium school (42.4%) with 10 to 29 teachers for elementary and 10 to 25 teachers for secondary; followed by a large school (27.3%) with 30 to 50 teachers for elementary and 26 to 100 teachers for secondary; a small school (18.2%) with 9 or less teachers for both elementary and secondary; and a mega school (12.1%) with 51 or more teachers for elementary and 101 or more teachers for secondary. It can be deduced that there are more medium schools because of the establishment of integrated schools in the division. Conversely, there are only few mega schools due to the separation of stand-alone senior high schools, making these schools into either large or medium schools.


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

The findings stated above are supported by the responses of some school head respondents (RSH). RSH1 has been in the service for 9 years and handles a large school for the first time, RSH2 had experienced managing a central school and a mega school, and RSH3 has been leading a medium integrated school.

The results definitely imply that the SDO Isabela adheres and abides to the rationalization law in which school heads must only reside within five years, and be transferred to another school for them to lead. Further, it shows that a higher privilege is given to school heads who manage secondary schools because they have the full authority in financial aspect and direct chances in attending division level executive conferences.

Table 3.5
Descriptive Statistics on the Size of School

Profile	<i>f</i>	%
Mega	4	12.1
Large	9	27.3
Medium	14	42.4
Small	6	18.2

Table 3.6 outlines the descriptive statistics on the school profile's type of school. As expected, elementary as the type of school has the highest proportion (36.4%), followed by integrated schools: integrated junior high and senior high school, and integrated elementary and junior high school with 24.2 percent and 18.2 percent, respectively. The last two remaining proportions are occupied by junior high school (12.1%), and stand-alone senior high school (9.1%). Such findings on the elementary and integrated schools exhibit that DepEd top management adhere to the national policy which is the


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

establishment of elementary school in a barangay, and the DepEd Order No. 91, s. 1999 which mandates the establishment and operation of integrated schools in a region/cluster of barangays. With regard to stand-alone proportion, only few integrated junior high and senior high school have managed to disintegrate and work as stand-alone schools due to non-existence of government-owned separate land.

These findings are being supported by the response of a school head respondent on why they don't have stand-alone senior high school in their municipality:

“Wala pa kasing bakanteng lote na pagmamay-ari ng DepEd na pwedeng pagpatayuan ng mga buildings kaya hindi pa naihiwalay ang senior high school. . . ang mga buildings na natanggap namin ay halos three-storey lahat. Wala na kaming choice eh, vertical expansion nalang.” (RSH4)
(There is no vacant lot owned by the DepEd within the locality for us to separate the senior high school. . . , most of the buildings that we received are three-storey. We don't have a choice, only vertical expansion.)

The data shows a very minimal number of stand-alone senior high schools in the division, which is only three as per records. This is because most of the integrated **junior and senior high schools cannot seek approval from the region to function independently because DepEd has no available lot or separate land for them.**

Table 3.6
Descriptive Statistics on the Type of School

Profile	<i>f</i>	%
Stand-Alone Senior High School	3	9.1
Integrated Junior High and Senior High School	8	24.2
Junior High School	4	12.1
Integrated Elementary and Junior High School	6	18.2
Elementary	12	36.4

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

1.3 DCP Profile

Table 3.7 reveals the descriptive statistics on the number of computer-to-student ratio in an ICT class based on the computer package received by public schools. It can be discerned that majority of the schools (69.6%) received DCP package with just one-third number of computers, compared to the highest number of learners in a class. Next finding is the 1 computer is to 2 learners (15.2%), which indicates that these schools received DCP package having one-half number of computers. Both findings require these schools to implement ICT class scheduling and shifting to meet one computer-one learner ratio. This scenario suggests a potential bottleneck in ensuring all students receive adequate hands-on time with technology, which is crucial for developing digital literacy.

The remaining proportion which is 15.2% is occupied by 1 computer is to 1 learner. This means that these are the fortunate schools which received enough number of computers.

The findings above are being attested by the school head respondents along with their answers to the 7th question during their in-depth interview: *What is the most crucial problem you experienced as a school head because of the existence of DCP in your school?* as follows:

School heads assert that the most crucial problem is the computer-to-learner ratio, which is one computer to two, or three or more. (See Appendix AM).

“Actually, the most crucial problem is the computer to learner ratio. Sad to say that there were only 12 client-computers available, that’s why the computer teacher held the class in group having three or more learners per computer” (RSH4).



“It’s on the ratio of computers to learners. Our school doesn’t have the capacity to buy the needed number of computers for as to provide the ideal ratio 1:1. We resorted to learning by groupings...” (RSH7)

Likewise, teacher respondents (RT7, RT11, RT13 and RT16) significantly expressed their similar experiences about low ratio of computers to learners through their statements during the in-depth interview (See Appendix AK).

Table 3.7

Descriptive Statistics on the Number of Computer-to-Student Ratio in an ICT Class

Profile	<i>f</i>	%
1 computer is to 1 learner	5	15.2
1 computer is to 2 learners	5	15.2
1 computer is to 3 or more learners	23	69.6

Table 3.8 depicts the descriptive statistics on the number of ICT personnel. As shown herein, majority of the ICT teachers (69.7%) are responsible for three or more grade levels, while four teachers (12.1%) are assigned to two grade levels. This ratio indicates a likely strain on the ICT teachers, potentially impacting their ability to provide effective support and maintenance, as well as individualized attention to students’ needs in leveraging technology for learning.

A notable result is shown: six (18.2%) of them are assigned to one grade level. This situation shows that the proportion of students having one ICT teacher-to-one grade level is expected to have higher opportunity in acquiring better ICT literacy.

Table 3.8

Descriptive Statistics on the Number of ICT Personnel

Profile	<i>f</i>	%
1 ICT teacher is to 1 grade level	6	18.2
1 ICT teacher is to 2 grade levels	4	12.1
1 ICT teacher is to 3 or more grade levels	23	69.7


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Table 3.9 mirrors the descriptive statistics on the number of computer laboratories or e-classrooms. As gleaned, a total of 29 or 87.9 percent of public schools in the division have one computer laboratory or e-classroom for three or more grade levels, while three or 9.1% of them have one computer laboratory or e-classroom for two grade levels. It can be inferred that there is resource scarcity in terms of dedicated ICT learning spaces, which can impede the implementation of a comprehensive ICT curriculum.

It is sad to note that there is only single school (3%) in the division that has one computer laboratory intended for one grade level. This is attributed to the fact that most of the schools have prepared one ICT laboratory regardless of their learners' population as one of the basic requirements for the compliance of DCP school recipient.

Table 3.9
Descriptive Statistics on the Number of Computer Laboratories or e-Classrooms

Profile	<i>f</i>	%
No. of computer laboratories or e-classrooms		
1 lab is to 1 grade level	1	3.0
1 lab is to 2 grade levels	3	9.1
1 lab is to 3 or more grade levels	29	87.9

Table 3.10 displays the descriptive statistics on the number of serviceable computers. As depicted, 20 (60.6%) schools have three or more serviceable computers for every 10 computers (30% or higher), 11 (33.3%) have one serviceable computers for every 10 computers (10% or less), and two (6.1%) have two serviceable computers for every 10 computers (20%). This is in consideration of the fact that computer as an ICT gadget depreciates its functionality, and requires specialized skills of the ICT teacher for its



maintenance. In the absence of ICT technicians employed in these schools would mean that this DCP package might turn into non-serviceable computers. Moreover, every non-serviceable computer in a school DCP recipient would alter adversely the ideal ratio of computer to learner.

Table 3.10

Descriptive Statistics on the Number of Serviceable Computers

Profile	<i>f</i>	%
No. of serviceable computers		
1 computer for every 10 computers	11	33.3
2 computers for every 10 computers	2	6.1
3 or more computers for every 10 computers	20	60.6

Table 3.11 presents the descriptive statistics on the number of non-serviceable computers. As illustrated, 22 (66.7%) schools have three or more computers for every 10 computers, 8 (24.2%) have one computer for every 10 computers, and three (9.1%) have two computers for every 10 computers. Based on these dismal results, it really depicts that the existence of non-serviceable computers means that there is no definite ICT technician personnel assigned to these DCP school recipients. Further, it implies that ICT coordinators might not have the necessary ICT skills (e.g. NC II Computer Hardware and Services) to repair and maintain serviceable computers to avoid condemnations.

Confirming the above findings on aspects of DCP that need improvement, two teacher respondents (RT4 and RT5) openly shared that DCP package is the primary concern which includes ratio of laptops to learners, poor internet connectivity, and those computers that need repair.



“ Package . . . the first batch of computers ay halos hindi na functional, kailangan itong imaintain.” (RT4) (Package, sir because the received packages especially the first batch of computers is almost not functional, and there’s a need to maintain them.)

“: . . package sir. . . networking is bad because if you happen to turn off the motherboard, lahat na mamamatay, at masisira lahat yung ginagawa ng mga bata. It’s very slow and not only that, outdated pa”(RT5). (In my own experience, package is needed to improve because it is a network type of computer that if you happened to turn off the server, all the computer clients will shut down, and everything that is done by the learners is lost. I found that they are too slow and non-upgradable.)

Additionally, teacher respondents (RT9 and RT11) reasonably confirmed the issue on the non-upgradable kind of DCP computers they received (See Appendix L). This is further affirmed by RSH5 saying that almost all units in the package are damaged and no one knows to do repair; hence, the DCP package was declared non-serviceable and for condemnation.

The findings on non-serviceable computers reveal the realistic situation, showing that DCP packages especially the first batches are too slow with respect to their performance, non-upgradable with respect to the program, and low-end computers with respect to the unit as a whole.

Table 3.11

Descriptive Statistics on the Number of Non-serviceable Computers (for Condemnation)

Profile	<i>f</i>	%
No. of non-serviceable computers (for condemnation)		
1 computer for every 10 computers	8	24.2
2 computers for every 10 computers	3	9.1
3 or more computers for every 10 computers	22	66.7


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Table 3.12 shows the descriptive statistics on the size of computer laboratory or e-classroom. As shown in the table, 6.1% of the schools have an oversized computer laboratory (larger than 7 m x 18 m) which implies that these computer laboratories provide spacious venue for learning. Next are the schools that have standard computer laboratories (51.5%) which have met the standard size criteria. However, 42.4% of these schools have substandard e-classrooms.

As revealed by Funkhouser (2009) in his study, there is a very small effect of classroom size reduction on student achievement in Reading and Math. This means that the size of the discrepancy might affect the effectiveness of teaching because it delimits the space of proper arrangement of computers, allowing students to work properly, thereby a tendency of diminishing the educational experience and limiting the effectiveness of ICT instruction.

Table 3.12
Descriptive Statistics on the Size of Computer Laboratory or e-Classroom

Profile	<i>f</i>	%
Substandard (smaller than 7 m x 18 m)	14	42.4
Standard (7 m x 18 m)	17	51.5
Oversize (larger than 7 m x 18 m)	2	6.1

Table 3.13 displays the descriptive statistics on the maintenance budget. As demonstrated, majority of the schools (87.8%) allocates DCP maintenance budget annually. Such finding indicates that majority of the schools might only maintain the functionality of their DCP packages during the beginning of the school year. The adverse


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

effect of annual DCP maintenance budget allocation is experienced when there is a need for an immediate budget to repair and restore damaged computers within the school year.

Due to the above finding, which shows a long range of time waiting for the next budget, needed fund for immediate repair and maintenance is usually shouldered by the teacher. This is affirmed by the response of the school head respondent during the in-depth interview specifically to the 7th question: *What is the most crucial problem you experienced as a school head because of the existence of DCP in your school? How did you address it?:*

“The most crucial is that the DCP given to my school is not working. We just used it for a year. We addressed the problem by self-finding charging for example one laptop for the whole school and then self-provision by the teachers as well because we cannot wait for the Department of Education to really give us something, so we get from our own pocket. My computer is not provided by the DepEd. That is my personal, and it really works because the initiative of the teachers really matters.” (RSH8)

Meanwhile, the four (12.2%) schools which have quarterly appropriation for DCP package may experience a lesser number of non-serviceable computers due to their immediate and regular repair and maintenance.

Finally, none of the schools has provided a maintenance budget in a semestral manner.

Table 3.13
Descriptive Statistics on the Maintenance Budget

Profile	<i>f</i>	%
Quarterly	4	12.2
Semestral	0	0.0
Annually	29	87.8



Problem 2. School Heads' Level of Support in the DCP Implementation

2.1 DCP initiatives

A detailed view of the descriptive statistics on the school heads' level of support in terms of DCP initiatives is provided in Table 3.14. It can be gleaned that school heads' overall level of support along DCP initiatives ($M = 2.83$, $SD = 0.77$) is proficient. This is manifested with the collaborative efforts of teachers ($M = 3.03$, $SD = 0.86$), LGU ($M = 2.72$, $SD = 0.92$), SPTA ($M = 2.76$, $SD = 0.92$), alumni ($M = 2.63$, $SD = 0.92$), and the school preparations ($M = 2.98$, $SD = 0.80$).

Such findings on DCP initiatives are apparently manifested by the responses of the school head respondents to the question: *If your school was not selected as a DCP recipient, do you still initiate to have ICT gadgets in your school? What will be your primordial step?* On the issue of being non-DCP recipient and initiatives to have ICT

gadgets in school, school heads say that they “will still encourage . . . teachers to have their own laptops” (RSH1, RSH2); use the MOOE to purchase additional Units (RSH2) and involve the stakeholders in acquiring computers to improve the teaching-learning process (RSH3).

However, school heads are “making preparations to be DCP recipients” and are “soliciting assistance from stakeholders to put up e-classrooms” (RSH5, RSH6 and RSH10), and their efforts are being confirmed by the teacher respondents (RT8, RT10, RT11, RT12, RT15 and RT16) when they shared that their “school heads are taking initiatives indicating their strong belief to the significance of DCP package towards smooth and proper school operations” (See Appendix M).

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Though the mean value ($M = 2.63$) is the least, which shows the level of support coming from alumni is almost not proficient or somewhat proficient, school heads have manifested DCP initiatives through solicitations and donations coming from other school stakeholders like Local Government Unit. This is because they have known that DepEd has its own fund given to schools as added by some school head respondents during their in-depth interview to the 8th question: *Do your stakeholders support DCP? If yes, in what way do they give support? If not, what made them non-supporters of DCP?*

As to support of stakeholders to DCP, one school head was glad to share that *“stakeholders supported DCP. . .Local Government Unit procured TV per barangay for the learners, and watched the TV episode produced by the teachers and the provision of towers per barangay and the provision of cellphones to those schools that are poor... mayor gave each learner cellphone, free internet connectivity installing every barangay, and one to those who are not connected to the cable network. They also provided us such as laptop where we can edit the ETV episodes, lights, machines, camera, hard drives, and all of those things that we need for the educational television”* (RSH2). Stakeholders are very supportive by voluntarily giving their money, and offering their financial assistance to repair all those facilities or computers that are not functional (RSH 3) but the support is not 100% (RSH7).

**Table 3.14***Descriptive Statistics on School Heads' Level of Support in Terms of DCP Initiatives*

Questions	<i>M</i>	<i>SD</i>	Desc.
1. At what level of preparation did the school head make to be a recipient of the DCP package?	2.98	0.80	P
2. At what level of assistance did the school head get from your alumni to be a recipient of the DCP package?	2.63	0.92	P
3. At what level of assistance did the school head get from your School-Parent Teacher Association (SPTA) to be a recipient of the DCP package?	2.76	0.92	P
4. At what level of assistance did the school head get from your Local Government Unit (LGU) to be a recipient of the DCP package?	2.72	0.92	P
5. At what level of support did the school head get from the teachers to be a recipient of the DCP package?	3.03	0.86	P
Overall DCP initiatives	2.83	0.77	P

Note. P = Proficient.

2.2 DCP trainings

A complete descriptive statistics on the school heads' level of support in terms of DCP trainings is displayed in Table 3.15. It can be deduced that the school heads' overall level of support along DCP trainings ($M = 3.13$, $SD = 0.61$) is generally high. This reflects a robust commitment to capacity building, as seen in up-to-date submission of ICT/DCP-related training reports ($M = 3.25$, $SD = 0.71$), active participation in ICT-related trainings and workshops ($M = 3.24$, $SD = 0.75$), and regular implementation of Learning Action Cell (LAC) sessions on DCP ($M = 3.08$, $SD = 0.78$). This learning endeavor of teachers and ICT coordinators initiated by their school heads has resulted to high level of achievement ($M = 2.93$, $SD = 0.77$) along ICT-contested activities.

Such findings on LAC sessions and ICT-related trainings/workshops are in conformity with the responses of teacher respondents in relation to DCP LAC



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

implementation where they confirmed that their respective school heads implement ICT-related LAC sessions which they attend once a year (RT1, RT2), twice a year (RT12, RT15) or four times a year (RT4) depending on the topics and availability of speakers (RT15).

“We have ICT-related LAC session. . . once a year.” (RT1).

“Same sir. . . once a year.” (RT2).

“Yes, our school DCP LAC sessions four times a year.” (RT4)

“We usually attend DCP LAC sessions twice a year during our INSET. (RT5).

Yes, sir. School LAC sessions are done twice a year. I mean DCP is integrated. It does not only focus on DCP. (RT15)

Meanwhile, as to the submission of ICT/DCP-training reports, there is improvement in School Information Dissemination because “*submission of report is fast*” (RICT1).

Most of the information kasi prino-provide ng division ngayon which is mabilis na lang ang pag-process ng information. . . And if there are reports needed to be accomplished, you can do it, and submit it right away with the use of DCP (RICT1) (Most of the information are provided by the division now, which is the fastest way to process the information. . .(RICT1))

In terms of how DCP improves school and affects teachers, according to teacher respondents, DCP improves report submission because data are available on files and DCP improves their efficiency and productivity.

“DCP improves the performance of the school through submitting online reports promptly. It made me improved, and it made me work efficiently and productively.” (RT5).

“Through DCP, we can submit reports on time because all the files are being saved in the computer.” (RT8)



Based on the findings above, it is safe to say that respondents have acquired high technology skills due to the conducted ICT/DCP-related trainings, and enhanced by their own personal experiences in utilizing the DCP package and in teaching ICT subjects.

Table 3.15

Descriptive Statistics on School Heads' Level of Support in Terms of DCP Trainings

Questions	<i>M</i>	<i>SD</i>	Desc.
DCP trainings			
6. At what level does your school implement LAC sessions on DCP?	3.08	0.78	H
7. At what level does your school participate in ICT-related trainings/workshops?	3.24	0.75	H
8. At what level does your school submit DCP/ICT-related training reports?	3.25	0.71	H
9. At what level does your school achieve ICT-contested activities?	2.93	0.77	H
10. At what level does your school train teachers technologically?	3.15	0.68	H
Overall DCP trainings	3.13	0.61	H

Note. H = High.

2.3 DCP programs

A thorough descriptive statistics on the school heads' level of support in terms of DCP programs is divulged in Table 3.16. It can be inferred that the school heads' overall level of support along DCP programs ($M = 2.97$, $SD = 0.61$) is predominantly high, but slightly lower compared to DCP trainings. This is evidently shown in the strong support for implementing ICT programs ($M = 3.20$, $SD = 0.69$), and maintaining the DCP package ($M = 3.15$, $SD = 0.74$). However, financial allocations ($M = 2.76$, $SD = 0.78$) are not so high, and they conform to the findings about the DCP maintenance budget which is only done annually.



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

The above findings, particularly on the school ICT program implementation, are being supported by the responses of teacher respondents to the questions *“Is DCP a part of your instruction? How do you integrate it?”*

“In the teaching and learning process, we usually use the Internet or the computer in the teaching process. We incorporate PowerPoint and other computer programs in our daily teaching.” (RT1).

“ . . . we are using the blended type of learning, so as teachers, we are utilizing the use of computer assisted instructions. For example, during the distance learning using different online platforms such as Quizizz. . . we use google form.” (RT2)..

“Yah, this is a part of the course nowadays. We are using computers to teach our students to empower them not only in other aspects when it comes to computer. Simply, I integrate DCP in my everyday lesson.” (RT3).

The utilization of DCP in daily teaching by integrating ICT gadgets is likewise affirmed by teacher respondents (RT5, RT9, RT11, RT12, RT13, RT15, RT16, RT4 and RT13) during their FGD. (See Appendix AN).

Meanwhile, as to the financial aspect of the DCP program, FGD reveals that schools do not ask for DCP financial support (RT3, RT11) because DCP is given by DepEd and it is free (RT9). However, support from stakeholders are solicited for other projects and for computer lessons before the DCP (RT3, RT11).

“Regarding financial support from stakeholders as far as I am concerned, wala po atang nag-aask ng DCP financial support but in other school projects.” (RT3)

(Regarding financial support from stakeholders as far as I am concerned, no one is asking for DCP financial support but in other school projects.)

“No, because the DCP is given by the DepEd, and it is for free that’s why we don’t ask financial support from our stakeholders. Before the DCP package, there was a computer lesson on students supported by PTA then when we received the DCP, it stopped but actually parents are willing to support



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

whatever finances. They are supportive actually but so far we never ask any support the fact that we don't have concern yet." (RT9)

"So far I cannot remember any instances that the school ask DCP financial support from the stakeholders." (RT11)

Finally, in relation to securing the DCP package, not all schools have school security guards that protect school properties such as the DCP package. Worse to this, only few schools allocate DCP budget for school security guards who would serve round-the-clock. As expected, security measures for DCP resources ($M = 2.87$, $SD = 0.78$) are reflected in one of the lowest scores, which suggest areas where further improvements could be made to ensure sustainability and safety of the resources.

Furthermore, some school heads and teacher respondents affirmed that their stakeholders support DCP by providing security guards and by extending financial assistance and resources.

"Our stakeholders are very supportive like for example our PTA. . . are allotting an amount for the guard to look after the protection of our DCP during the night and during Saturdays and Sundays. . . they make it sure that the packages are safe and secured." (RSH1)

"As to their support, for example in safeguarding our laboratory, yes they do participate . . . they provided financial and fiscal resources for it." (RSH8)
(As to their support, for example in safeguarding our laboratory, yes they do participate like I tell them: "We need your support to fix our computer lab. What can we do?." They provided financial and fiscal resources for it.)

As regards the most crucial problems experienced, the school heads and teachers reported cases of burglary, lack of storage rooms, irregular support of stakeholders and no funds for simple provisions for barangay volunteers. To address the problems, they hired security guards and requested support from the barangay.


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

“I had the problem regarding the room of our ICT package where they ransack it, so the resolution that I made is that I hired a security guard that will secure 24 hours, and definitely it gave us the solution that is in a longer and larger bases and for our school. Another problem is that the lack of room where we can store our DCP package because other rooms are used for classroom instruction.”(RSH3).

“Actually, we have the support from the barangay, but the problem is they are not consistent, and also we cannot provide for example their coffee every night and others. Actually, nanakawan na kami ng DCP. We asked support from our stakeholders. They responded, but they are not consistent.”(RT2). (Actually, we have the support from the barangay, but the problem is they are not consistent, and also we cannot provide for example their coffee every night and others. Actually, we have been robbed by DCP. We asked for support from our stakeholders. They responded, but they are not consistent.)

Table 3.16
Descriptive Statistics on School Heads' Level of Support in Terms of DCP Programs

Questions	M	SD	Desc.
11. At what level does your school implement an ICT program?	3.20	0.69	H
12. At what level does your school maintain the DepEd Computerization Program package?	3.15	0.74	H
13. At what level or how much does your school spend for the DCP financial program?	2.76	0.78	H
14. At what level or how frequently does your school join ICT-contested activities such as but not limited to video editing, animation, digital poster making, and the like?	2.85	0.80	H
15. At what level or degree does your school secure a DCP package such as but not limited to hiring school security guards, DCP laboratory protection, and the like as a DCP security program?	2.87	0.78	H
Overall DCP programs	2.97	0.61	H

Note. H = High.

2.4 DCP utilizations

An in-depth look at the descriptive statistics on the school heads' level of support in terms of DCP utilizations is illustrated in Table 3.17. It can be observed that DCP utilization ($M = 3.25$, $SD = 0.58$) has the highest overall support among the four school



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

heads' level of support. This is due to the high levels of DCP integration into teaching ($M = 3.37$, $SD = 0.65$), utilization of DCP package in academic activities ($M = 3.23$, $SD = 0.75$), and on-time submission of school reports and presentation of school activities or achievements ($M = 3.33$, $SD = 0.69$), which imply that teachers have regularly used DCP in their daily endeavor.

Teacher respondents affirm that they use DCP in assessing performance in MIL and e-Tech (RT2) and Social Science subject (RT10), giving summative tests through Google forms (RT1), quizzes, checking through scan application, and encoding of grades.

"... in giving summative... we use Google forms to make it faster." (RT1)

"... sa subject naming MIL at e-Tech, we used the DCP package for assessment, sa pagbibigay ng mga Quizzes, sa kanilang portfolio as well as in actual encoding. Instead of manually checking their papers, we used this scan application." (RT2)

(We have, sir, in our subject MIL and e-Tech, we used the DCP package for assessment, in giving Quizzes, in their portfolio as well as in actual encoding. Instead of manually checking their papers, we used this scan application.)

"I'm using the DCP during my Social Science subject." (RT10)

Regarding the usefulness of DCP such as submitting of reports, and presenting school activities and school achievements, school heads and ICT coordinators declare that DCP has greatly help them become adept as technology leaders as has been manifested with the responses to the 4th question in the in-depth interview: *Does DCP transform you as a technology leader/ ICT coordinator? How do you show it?* such as:

"Yes... through DCP, we can easily surf in the internet, transmit reports online... facilitate information dissemination to the field, ... most common sending emoticons or GIF as means of recognizing achievements via online." (RSH3)


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

“Being a school leader, I need to showcase my ICT skills by preparing the minutes of the meeting in a presentation form, monitoring, and checking of attendance of participants in a digital manner. Lastly, making of a virtual drive for us to submit all reports and requirements.” (RSH5)

“Definitely, because... there is an immediate response from the teachers because they are allowed to use the devices in order to fulfill or to finish the reports for them to pass in the office... a great help in the consolidation of reports submitted by the teachers... online regularly without delay.” (RICT4)

In a similar manner, ICT coordinator (RICT2 and RICT8) respondents contend analogous responses about the use of DCP in submitting reports during their in-depth interview (See Appendix AO).

Truly, the essence of DCP in the school is quite maximized by the school heads and ICT coordinators for which DCP facilitates and ensures on-time submission, and up-to-date consolidation of reports. With this, the ICT literacy of school personnel is honed by the existence of DCP in the school.

Table 3.17

Descriptive Statistics on School Heads' Level of Support in Terms of DCP Utilizations

Questions	<i>M</i>	<i>SD</i>	Desc.
16. At what level does your school allow teachers to integrate DCP into teaching?	3.37	0.65	H
17. At what level does your school permit the learners to utilize the DCP package in their academic activities?	3.23	0.75	H
18. At what level does your school utilize the DCP package in establishing and communicating partnerships?	3.11	0.73	H
19. At what level does your school use DCP in submitting school reports and presenting school activities or achievements?	3.33	0.69	H
20. At what level does your school utilize DCP in the conduct of Monitoring and Evaluation (M&E)?	3.19	0.70	H
Overall DCP utilizations	3.25	0.58	H

Note. H = High.



Generally, the overall school heads' level of support ($M = 3.05$, $SD = 0.55$) in the DCP implementation presented in Table 3.18 are found high, which are specifically manifested by their proficient DCP initiatives ($M = 2.83$, $SD = 0.77$), high DCP trainings ($M = 3.13$, $SD = 0.61$), high DCP programs ($M = 2.97$, $SD = 0.61$), and high DCP utilizations ($M = 3.25$, $SD = 0.58$).

As to the proficient DCP initiatives as a manifestation of school heads' level of support, it implies that these initiatives serve as the primary step of the school heads to open crucial opportunities for teachers and staff to utilize and maximize technology resources of the school. Likewise, these DCP initiatives serve as the school heads' reflection of resourcefulness revealing the skills in the dimensions of Leadership and Vision towards being a visionary leader; Support, Management and Operation towards being a transformational leader; and Teaching and Learning towards being a democratic mentor/coach. Hence, these three dimensions of technology leadership are essential components of the proposed technology leadership model.

In terms of high DCP trainings, which are conducted as a manifestation of the school heads' support to the DCP implementation, it implies that the necessity of these relevant trainings must be evident to ensure a successful implementation of a technology leadership. As such, DCP training has become an essential element of the Teaching and Learning dimension because teachers who have high level of trainings are capable to cater quality education to the learners. Likewise, due to the high level of trainings of these teachers, they can make themselves more productive as they utilize the DCP resources in the dimension of Productivity and Professional Practice. Hence, it is

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

imperative to include these two dimensions as essential components of the proposed technology leadership model.

Regarding the high DCP programs, which are implemented as a manifestation of the school heads' support to the DCP implementation, it implies that school heads find an opportunity to hone their technology leadership skills, making these programs as their avenue to support the teaching force of the school, manage school resources, and establish proper operations. Hence, this indicator is in support to the dimension of the technology leadership which is the Support, Management and Operation, making it necessary to be part of the proposed technology leadership model.

Lastly, with respect to the high DCP utilizations as a manifestation of the school heads' support to the DCP implementation, it implies that there is a positive attitude of school personnel towards the DCP as a program, and they have high DCP skills in using technology resources of the school. The high level of integration of DCP into teaching, which is manifested by allowing teachers and learners to utilize the DCP package in their academic activities, reveals its necessity to the dimension of Teaching and Learning in the technology leadership. More so, in submitting reports and presenting school activities and school achievements as primordial part of monitoring and evaluation of schools, show its essence as part of the Assessment and Evaluation dimension. Hence, the two dimensions are necessary to be part of the proposed technology leadership model.

In a nutshell, there is a need to develop a Technology Leadership Model to optimize the level of support of school heads in the effective implementation of DCP.

**Table 3.18***Summary of Descriptive Statistics on School Heads' Level of Support*

Indicators	M	SD	Desc.
DCP initiatives	2.83	0.77	P
DCP trainings	3.13	0.61	H
DCP programs	2.97	0.61	H
DCP utilizations	3.25	0.58	H
Overall School Heads' Level of Support	3.05	0.55	H

Note. P = Proficient, H = High.

Problem 3. Manifestations and Levels of School Heads' Technology Leadership

3.1 Leadership and vision

The school heads' manifestations and levels of technology leadership along leadership and vision dimension are unravelled in Table 3.19. As clearly shown, school heads' leadership and vision are manifested by the endeavor in communicating information, conducting planning, and implementing the school plan along with the school stakeholders ($M = 3.25$, $SD = 0.72$) as well as the encouragement on the development and growth of effective approaches for integrating technology into teaching ($M = 3.48$, $SD = 0.58$), and through the collaborative effort of school heads and stakeholders in building the shared vision ($M = 3.33$, $SD = 0.70$) towards the development and adoption of this shared vision for using technology to improve student success through the technological practices of teachers ($M = 3.25$, $SD = 0.69$).

The above findings on the endeavor of adopting shared vision for using technology towards students' improvement, and communicating information are sounded by the following responses of the school heads to the 2nd question during their in-depth interview: *Do you believe that DCP improves school performance? Why?:*



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

“Yes, because of the students’ achievement which significantly improved through the use of DCP/ICT. As we all know, student’s achievement is one of the indicators of school performance. Another indicator is the on-time submission of reports.”(RSH1)

“Yes, I believe that DCP improves school performance because our learners are 21st century learners. . . enhance their learning if they are manipulating something, . . . we can connect their understanding by using something that really interests them, that arouses their interests, and that motivates them as well. These gadgets will help them to search for more learnings, and it really helps rather than using a traditional chalk board because of the animations, moving clips, interactive video lessons which really arouse their interest. In short, there is a greater assurance of student’s achievement and completion rate indicator.” (RSH2)

Followed by this question:

In what school key indicator (Leading Strategically, Managing School Operations and Resources, Focusing on Teaching and Learning, Developing Self and Others, and Building Connections) does it improve the most?

School heads claim that they have improved in Managing School Operations and Resources (RSH1) and in Leading Strategically (RSH8).

“... KRA #2 which is Managing School Operations and Resources, because it makes our operation easier, simpler with the use of ICT.”(RSH1)

“... Leading Strategically. In employing my leadership to my teachers and staff with the use of ICT, I can give immediate pieces of advice, guidance, and some sorts of coaching and mentoring for us to work in accordance to what we have planned. And strategically, I expect less resistance because of the smooth flow of communication, of course through the use of ICT again. As expected, most of the results that we achieved are based on what we have planned.”(RSH8)

In relation to the idea of developing others and self, or to the personal growth and development, some of the verbal statements of the ICT coordinator respondents manifested the veracity of this endeavor specifically to the 2nd question in the in-depth



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

interview: *Do you believe that DCP improves your coordinatorship skill or competence?*

Why? such as:

“Yes, it will help you gain some skills, computer skills, MS Word skills dahil sa mga trainings na kinoconduct lagi ng division. . you will gain new knowledge tungkol sa kung anu-anong application, so mafaforce ka na aralin yun kasi kailangan mong aralin.” (RICT1). (Yes, it will help you gain some skills, computer skills, MS Word skills because of the trainings that the division always conducts. As an ICT coordinator, you are enforced to join, and then you will gain new knowledge about any application, so you are really forced to learn it because you need to learn it.)

“... because of this DCP that were provided by the DepEd, I am more trained in utilizing this not only for myself but also how to use this properly, how to utilize this, and how to use this package.” (RICT2)

“Yes, it provides me with tools that I can use to learn new skills related to my job as a teacher and ICT coordinator. I have improved my skills as an information disseminator. The DCP allowed me to have tools I can use to visualize school data that are used for school level decision-making process.” (RICT3)

The above statements aver that the essence of DCP happens when school personnel embrace, adopt, and integrate it into their daily operations gearing into professional habits, which can be molded into best school practices as they adjacently develop their personal ICT skills.

Meanwhile, as to the findings about the level of technology leadership of school heads, it can be noted that there is a moderate presence of advocacy for the inclusion of research-based technology practices in the school improvement plan ($M = 3.23$, $SD = 0.73$), alignment of district or school technology plans with other plans ($M = 3.33$, $SD = 0.70$), engagement of activities to identify best technology practices ($M = 3.32$, $SD = 0.70$), and the integral part of promoting the stakeholders' participation in the school's

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

technology planning process ($M = 3.28$, $SD = 0.70$), making the overall technology leadership and vision of school heads as moderately manifested ($M = 3.32$, $SD = 0.58$).

However, school heads and teachers agree that the use of technology has contributed a lot to improving the teaching and learning processes using ICT and teachers' performance in computing and reporting grades of students. Students learn to explore new things, maximize competence through problem solving and creativity and join academic-related competitions. In short, DCP enhances the 21st century skills of teachers and learners.

"Our DCP improves our school significantly in many aspects..., the teaching and learning process... the teachers are using Computer-Aided Instruction... it is easier for them to present the lesson using the ICT. On the part of the learners, they could easily access the lessons on the internet using ICT, so it plays a vital role especially in the teaching-learning process. Also, on the part of the teachers, it significantly affects the performance of teachers because using ICT in the classroom helps them in the statistics of their report like for example, getting the mean and median scores of the test results of students."(RSH1)

"Through the DCP, the school improves significantly by of course maximizing learners' competence through problem solving and creativity. Their 21st century skills are being enhanced. They can go beyond basics. They can explore, and they can somehow create something new."(RSH2)

"The DCP improved our school significantly because our learners are now competing in higher forms of contest for example in journalism. We usually participate in desktop publishing, which we use DCP, in photojournalism, in digital making of paper cards, and all indicated in the TLE."(RT3)

Such findings are similar to the results of the study of Garza (2023), a recent study, who found that technology leadership is just at a minimal level, which is slightly in consonance with the findings of the present study. As to the results on the leadership and vision dimension, it was specifically found that most of the principals do not compare


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

and align technology plans, identify and advocate research-based practices in using technology, participate in planning activities, and share technology plans with stakeholders.

Moreover, Quidasol (2020) revealed in his study that school heads possess a moderate participation and performance under the leadership and vision dimension. This is due to the failure of comparing and aligning technology plans with other plans, and minimal promotion of stakeholders' participation in technology planning.

Likewise, Gulpan and Baja (2020) testified in their study that principals of private secondary schools are least prepared for visionary leadership. This is due to some identified factors: (a) abrupt change in educational landscape, and (b) increasing demands brought about by new policies.

Table 3.19

Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership in Terms of Leadership and Vision Dimension

Question	M	SD	Desc.
Leadership and vision			
1. To what extent did the school head engage your school's stakeholders in developing and adopting a shared vision for using technology to improve student success through the technological practices of teachers?	3.25	0.69	M
2. To what extent did the school head communicate information about the district or school's technology planning and implementation efforts to school stakeholders?	3.25	0.72	M
3. To what extent did the school head advocate for the inclusion of research-based technology practices in the school improvement plan?	3.23	0.73	M
4. To what extent did the school head align district or school technology plans with other plans, including district strategic plans, school improvement plans, technical assistance plans, or other instructional plans?	3.33	0.70	M
5. To what extent did the school head engage in activities to identify best practices in the use of technology?	3.32	0.70	M
6. To what extent did the school head lead in building the shared vision of your school to your stakeholders by collaboratively creating a strategic plan that articulated how technology would be used to enhance teaching and learning?	3.33	0.70	M
7. To what extent did the school head encourage the development and growth of effective approaches for integrating technology into teaching?	3.48	0.58	M



Question	M	SD	Desc.
8. To what extent did the school head promote the participation of school stakeholders in the school's technology planning process?	3.28	0.70	M
Overall leadership and vision	3.32	0.58	M

Note. M = Moderately.

3.2 Teaching and learning

The school heads' manifestations and levels of technology leadership in teaching and learning are listed in Table 3.20. As evidently displayed, school heads' overall technology leadership along teaching and learning dimension is moderately manifested ($M = 3.45$, $SD = 0.52$) through integrating technology in monitoring and assessing teaching-learning ($M = 3.48$, $SD = 0.61$), making available assistance to teachers for using student assessment data to facilitate instruction ($M = 3.45$, $SD = 0.63$), and enforcing technology in teaching-learning to achieve quality education ($M = 3.56$, $SD = 0.58$).

The forecited findings on achieving quality education through required technology show that DCP has improved the quality of teaching which are supported by the following responses of the teacher respondents during their in-depth interview to the 5th question: *Do you think that DCP has improved your quality of teaching? Why?*

"... when it comes to quality of teaching... it is not only in the lesson that they have learned, but they can also associate their learnings into the new trends of teaching... as the teacher, when I used interactive games they can be able to respond to me because they are in the techy age. That's way, I can improve my quality of teaching... must continue to learn how to use the DCP... to adapt with the needs of my learners." (RT2)

"Yes, there are plenty of knowledge that I gained... na-integrate ko yung mga new ideas na nakuha ko sa internet, so naibabahagi ko din kung ano yung trend. So, kung nag-iimprove ako, nag-iimprove din ang aking mga students. I'm learning while teaching." (RT7). (Yes, there are plenty of knowledge that I gained



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

here in using the computer. First, I integrated the new ideas I got from the internet, so I can also share what's the trend. So, if I am improving, my students are also improving. I'm learning while teaching.

“Yes, because it has improved especially on the side of the TVL CSS. Also, mga students namin pag Grade 11 sila may subject sila sa Empowerment Technology na kung saan they can use these gadgets.”(RT9) (I could say yes, because it has improved especially on the side of the TVL CSS. Also, our students in Grade 11 have a subject in Empowerment Technology where they can use these gadgets.)

Likewise, on the part of monitoring and assessing teaching and learning, the importance of DCP is revealed in the responses of the teacher respondents stated below:

“Traditionally kasi compared to that use of ICT, iba talaga kasi ang engagement ng mga learners... Iba din ang naidadala ng computerization sa atin...makikita mo sa mga bata na may skills sila. Pwede ka na kasi maglagay ng automated remarks, at agad-agad makikita mo na kung sino ang dapat mag-retake ng exam”(RT4). (Traditionally, compared to that use of ICT, the engagement of the learners is really different. Computerization also brings us something else because you can really see in the students that they have skills. You can now enter automated remarks, and you will immediately see who should retake the exam .

“Yes, it improves and facilitates. Ginagawa niyang Madali... sa assessment, mabilis... makikita ang analytics ng results. Sa performance of teachers, nakikita ko kung sino ang nangangailangan ng coaching o mentoring kasi nasa computers na lahat. . . Sa mga learners, madali kong madetermine who needs interventions and extra-support.”(RT6). (Yes, it improves and facilitates. DCP makes it easy on the part of the teachers, similar to the assessment, the analytics of the results can be seen quickly. In the performance of teachers, I can see who needs coaching or mentoring because everything is in the computer. I can just encode it. With learners, I can easily determine who needs interventions and extra-support.)

“Nag-improve ako bilang teacher, at mga instructional materials ko nag-improve din. Ang way ng pagtuturo ko dati ay 50% traditional, ngayon 70% - 30% na... Ang trend sa mga bata ngayon... click click nalang o pumindot nalang kaya yung exam... dapat nasa laptop na.”(RT10). (I improved as a teacher, and my instructional materials were also enhanced. The way I used to teach before was 50% traditional, now it's 70% - 30%, so when it's brownout while conducting an exam, it's really a bad trip for me because I can't use my laptop for the assessment. The trend among children today is that they want to just click or press. The exam must be available, it must be on the laptop.)

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

The impact of DCP in the teaching-learning process is inevitable. It serves as a transformation tool for the teachers to improve from classic to innovative mentors, and from traditional to global means of learning.

As regards the level of technology leadership of school heads, it is clearly shown that the support to teachers or staff is moderately provided when attempting to share information about technology practices, issues, and concerns ($M = 3.44$, $SD = 0.61$), and moderately facilitated the delivery of professional development on the use of technology to faculty and staff ($M = 3.48$, $SD = 0.58$). This is due to the moderate dissemination of best technological practices in learning and teaching with faculty and staff ($M = 3.39$, $SD = 0.65$).

This is aligned with the study conducted by Gulpan and Baja (2020) who found that principals' technology leadership is in moderate level in terms of digital age learning or teaching and learning domain. This is because of slow and unstable internet connection used in the teaching and learning activities.

Likewise, Garza (2023) proved that along teaching and learning technology leadership dimension, majority of the principals with professional development have accomplished their activities significantly, and they have provided teacher's assistance through the provision of professional development.

Further, Quidasol (2020) discovered that school administrators have significantly exhibited an extent of performance along with the teaching and learning domain for they excelled the most in modelling best practices with the use of technology to their teachers.

**Table 3.20**

Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership in Terms of Teaching and Learning Dimension

Question	M	SD	Desc.
Teaching and learning			
9. To what extent did your school head provide or make available assistance to teachers to use technology for interpreting and analyzing data?	3.35	0.65	M
10. To what extent did your school head disseminate best technological practices in learning and teaching with faculty and staff?	3.39	0.65	M
11. To what extent did your school head provide support to teachers or staff when attempting to share information about technology practices, issues, and concerns?	3.44	0.61	M
12. To what extent did your school head organize or conduct a needs assessment of staff related to professional development on the use of technology?	3.39	0.66	M
13. To what extent did your school head facilitate or ensure the delivery of professional development on the use of technology to faculty and staff?	3.48	0.58	M
14. To what extent did your school head provide or make available assistance to teachers for using student assessment data to facilitate instruction?	3.45	0.63	M
15. To what extent did your school head enforce technology in teaching-learning to achieve quality education?	3.56	0.58	F
16. To what extent did your school head integrate technology in monitoring and assessing teaching-learning in your school?	3.48	0.61	M
Overall teaching and learning	3.45	0.52	M

Note. M = Moderately. F = Fully.

3.3 Productivity and professional practice

The school heads' manifestations and levels of technology leadership in productivity and professional practice are cited in Table 3.21. As obviously presented, school heads' overall technology leadership along productivity and professional practice is characterized by a moderate ($M = 3.40$, $SD = 0.52$) manifestation, which is primarily attributed by the full manifestation of school heads in using technology to help complete day-to-day tasks ($M = 3.50$, $SD = 0.59$). Additionally, the moderate use of technology-based management systems to access staff/faculty personnel records ($M = 3.48$, $SD = 0.62$) and student records ($M = 3.43$, $SD = 0.69$), and participation in professional development activities meant to improve or expand the use of technology ($M = 3.45$, SD



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

= 0.63) have contributed to the general manifestations of school heads. Although, the integration of technology for productivity in broader community contexts like income-generating projects shows a relatively lower score ($M = 3.02$, $SD = 0.85$), it is still moderately pointing to potential areas for growth in external stakeholder engagement and resource generation.

To support the findings on the participation in the professional development activities, the following responses of the teacher respondents to the 4th question: *Do you have trainings on DCP? How frequently do you attend such trainings?*, are shown below:

“Yes, but ICT-related trainings being conducted during our school-based INSET and even district INSET.”(RT3)

“I do have ICT-related trainings in ISU. I attended hardware servicing and basic Microsoft offices for six months. I usually attend ICT trainings once a year.”(RT9)

“Just simple DCP orientations. Upon receiving the package, the one who delivered it simply explained the package. We also have school-based ICT-related trainings but every quarter or four times a year.”(RT16)

As to the use of technology to help complete day-to-day tasks, the school heads assert that DCP improves their *school significantly*.

“DCP improves my school. . . it will give an easier way to process all the different activities of the school. Process in the sense that if somebody will request for SF 9 or SF 10, we can easily access our computer and furnish them a copy of it.”(RSH3)

“Through DCP, I can finish my day-to-day tasks on time.. . accomplish and submit the needed the reports promptly. . . because of the DCP...if I ask the teachers to pass something online then immediately . . . they are going to pass it regularly without delay.”(RSH8)

In terms of the level of technology leadership of school heads, it can be said that there is a full encouragement on the use of technology as a means of communicating with


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

education stakeholders, including peers, experts, students, parents/guardians, and the community ($M = 3.53$, $SD = 0.58$), moderate support of technology for the professional practice of teachers in the school and in the community ($M = 3.44$, $SD = 0.64$), and moderate integration of technology for the productivity of parents and other stakeholders ($M = 3.29$, $SD = 0.66$).

Related to this is the study undertaken by Cantos and Callo (2022) who ascertained that principals have highly demonstrated the six domains of the school heads' technology leadership for they have participated professional development events that aim to improve their technological capabilities.

Table 3.21

Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership in Terms of Productivity and Professional Practice Dimension

Question	M	SD	Desc.
Productivity and professional practice			
17. To what extent did your school head participate in professional development activities meant to improve or expand the use of technology?	3.45	0.63	M
18. To what extent did your school head use technology to help complete day-to-day tasks?	3.50	0.59	F
19. To what extent did your school head use technology-based management systems to access staff/faculty personnel records?	3.48	0.62	M
20. To what extent did your school head use technology-based management systems to access student records?	3.43	0.69	M
21. To what extent did your school head encourage and use technology as a means of communicating with education stakeholders, including peers, experts, students, parents/guardians, and the community?	3.53	0.58	F
22. To what extent did your school head use technology in the Income Generating Project (IGP) for the productivity of your school?	3.02	0.85	M
23. To what extent did your school head support technology for the professional practice of teachers in the school and in the community?	3.44	0.64	M
24. To what extent did your school head integrate technology for the productivity of parents and other stakeholders?	3.29	0.66	M
Overall productivity and professional practice	3.40	0.52	M

Note. M = Moderately. F = Fully.



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

3.4 Support, management and operation

The school heads' manifestations and levels of technology leadership under support, management, and operation dimension are captured in Table 3.22. As notably indicated, school heads' technology leadership reflects an overall moderate ($M = 3.34$, $SD = 0.56$) support system for technology management and operation. This is due to the active utilization of technology in managing schools ($M = 3.47$, $SD = 0.62$), use of technology as a means of support to teachers and staff ($M = 3.45$, $SD = 0.64$), utilization of technology in the operation of the school ($M = 3.44$, $SD = 0.62$), support of faculty and staff in connecting and using district- and school-level technology systems for management and operations ($M = 3.44$, $SD = 0.64$), allocation of campus discretionary funds to help meet the needs of the school's technology needs ($M = 3.23$, $SD = 0.71$), and pursuance of supplemental funding to help meet the technology needs of the school ($M = 3.21$, $SD = 0.69$).

As to the allocation of campus discretionary funds to help meet the technology needs, as a support of the school heads, it is manifested through the following responses that teachers have different perspectives to the 7th question during the FGD: *Does your school ask for DCP financial support from your stakeholders? How often?:*

"I think sir it is not as in that we are soliciting but some of our stakeholders are donating. They donated a Smart TV. I think that depends if they want to donate. Only if the need arises." (RT1)

"No, as far as I am concerned our DCP has its own financial fund, and that is from the MOOE. When we say DCP, that includes internet connectivity. As a teacher, I have never experienced or heard that we have asked financial support from our stakeholders." (RT6)

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Meanwhile, as to the school technology operation, school heads believe that they improved most on Managing School Operations and Resources. It can be discerned based on the school heads' responses to the 2nd question during their in-depth interview: *In what school key indicator (Leading Strategically, Managing School Operations and Resources, Focusing on Teaching and Learning, Developing Self and Others, and Building Connections) does it improve the most?* cited below:

"Among the key indicators, I believe it is on the Managing School Operations and Resources that improves the most because as a school head I am sole accountable to my immediate superior to anything that transpired in my school-based management to my resources. And because of DCP, I am in my comfort zone in operating all aspects of my school."(RSH4)

"I think it's in KRA #2, which is Managing School Operations and Resources, because it makes our school operation faster. Not only that, almost all aspects in our school operations are now entirely dependent to DCP or ICT."(RSH8)

Similarly, school heads strengthen the manifestations of technology operations through the following responses stated below:

"Yes, of course. Technology transformed me as an educational leader by showing three steps ahead of them, so I need to be empowered as well so that I can provide technical assistance to my teachers, to my learners, and that's it."(RSH2)

"Yes, because... I am a leader,... and have to learn by myself, and by the assistance of those knowledgeable. I think I am already transformed because I can also manage operating my laptop, and there are reports I can also make it by opening the link. So, I believe there's a better school operation because of this DCP."(RSH4)

The verbal statements above established the truthfulness of the school heads' support to the DCP financial aspect in which schools do not ask financial support directly from the stakeholders, but instead a regular allocation to campus discretionary and



supplemental funds is done by the school heads. These responses reveal a deeper emphasis on the usefulness of DCP in the overall technology operations of the school.

On the other hand, as to the level of technology leadership of school heads, it can be noted that there is a moderate advocacy of technology support services ($M = 3.30$, $SD = 0.68$), and replacements/upgrades of DCP hardware and software ($M = 3.16$, $SD = 0.74$).

This is in line with the findings of Gulpan and Baja (2020) who proved in their study that principals' technology leadership exhibits a moderate level along support, management and operation or systemic improvement dimension.

Table 3.22

Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership in Terms of Support, Management, and Operation Dimension

Question	M	SD	Desc.
Support, management, and operation			
25. To what extent did your school head support faculty and staff in connecting to and using district- and school-level technology systems for management and operations?	3.44	0.64	M
26. To what extent did your school head allocate campus discretionary funds to help meet the needs of the school's technology needs?	3.23	0.71	M
27. To what extent did your school head ensure that hardware and software replacements/upgrades were incorporated into school technology plans?	3.16	0.74	M
28. To what extent did your school head advocate at the district level for adequate, timely, and high-quality technology support services?	3.30	0.68	M
29. To what extent did your school head pursue supplemental funding to help meet the technology needs of the school?	3.21	0.69	M
30. To what extent did your school head use technology as a means of support to teachers and staff?	3.45	0.64	M
31. To what extent did your school head utilize technology in managing your school?	3.47	0.62	M
32. To what extent did your school head use technology in the operation of your school?	3.44	0.62	M
Overall support, management, and operation	3.34	0.56	M

Note. M = Moderately. F = Fully.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

3.5 Assessment and evaluation

The school heads' manifestations and levels of technology leadership along assessment and evaluation dimension are illustrated in Table 3.23. As notably shown, school heads' technology leadership exhibits an overall moderate ($M = 3.38$, $SD = 0.51$) manifestation towards using technology to enhance assessment and evaluation practices. This includes modeling technology-based systems to collect student assessment data ($M = 3.36$, $SD = 0.72$), promoting the evaluation of instructional practices and technology-based practices ($M = 3.40$, $SD = 0.69$), evaluating the effectiveness of professional development offerings in schools to meet the needs of teachers and their use of technology ($M = 3.38$, $SD = 0.68$), using technology as a primary means of assessment and evaluation of schools ($M = 3.38$, $SD = 0.66$), and assessing and evaluating the existing technology-based administrative and operations systems for modifications or upgrades ($M = 3.31$, $SD = 0.71$).

When it comes to the level of technology leadership of school heads, it can be concluded that there is a moderate use of technology as a criterion for assessing and evaluating the performance of faculty ($M = 3.46$, $SD = 0.64$), school personnel's performance ($M = 3.43$, $SD = 0.65$), and parents ($M = 3.32$, $SD = 0.70$).

Such findings on the aspect of the effective use of technology as a criterion for assessing the performance of faculty and students are reinforced by the verbal statements of the respondents to the following questions:

Does DCP transform you as a technology leader? How do you show it?

“At some point yes. . . . I . . . was able to create an ICT-based program which was actually utilized for the assessment of teacher applicants in our district,



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

and it was even used in the division. . . I introduced to them the use of this program, at yung ginawa kong item analysis at electronic class record. I contextualized it within the setting of the school.”(RSH7) (At some point yes. Well, I myself was able to create an ICT-based program which was actually utilized for the assessment of teacher applicants in our district, and it was even used in the division. So here at our school and the schools I came from, I introduced to them the use of this program, and the item analysis and electronic class record that I did. I contextualized it within the setting of the school.)

An ICT Coordinator admits that DCP improves their school significantly in conducting the NLC Assessment.

“Best example is that we are conducting the NLC Assessment. All the learners have their own Microsoft accounts. Our students were obliged to sign in their account. In that case, they were able to use our DCP. For those students who don’t have, they were allowed to use our DCP computers for them to sign in Microsoft accounts. In the previous school years, we were also one of the schools that conducted online test for teacher applicants.”

When asked on what teaching performance indicator (Content Knowledge and Pedagogy, Learning Environment and Diversity of Learners, Curriculum and Planning, Assessment and Reporting, Personal Growth and Professional Development) improves the most, teachers declare the most improved are Assessment and Reporting and Content Knowledge and Pedagogy.

“I think it’s more on the Assessment and Reporting because we can already assess the students through the computer... Content Knowledge and Pedagogy because in the strategies itself, you can observe that the students are already engaged in computer.”(RT3)

“I think it’s Assessment and Reporting that improves the most . . .test namin, iniintegrate sa lessons ko. Sa Content Knowledge and Pedagogy naman, mas mapapadali kasi nakakapagbigay ako ng supplements sa mga group chats namin.”(RT4).(I think it’s Assessment and Reporting that improves the most because we use technology in our assessment, in our test. It is integrated in my lessons. As for Content Knowledge and Pedagogy, it will be easier because I can provide supplements in our group chats.)



Among the teaching performance indicators, it is apparently shown based on the responses above that the Assessment and Reporting had the greatest improvement which supports the idea that even in assessing the performance of faculty with the use of technology is evidently done.

Table 3.23

Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership in Terms of Assessment and Evaluation Dimension

Question	M	SD	Desc.
Assessment and evaluation			
33. To what extent did your school head promote or model technology-based systems to collect student assessment data?	3.36	0.72	M
34. To what extent did your school head promote the evaluation of instructional practices, including technology-based practices, to assess their effectiveness?	3.40	0.69	M
35. To what extent did your school head assess and evaluate the existing technology-based administrative and operations systems for modifications or upgrades?	3.31	0.71	M
36. To what extent did your school head evaluate the effectiveness of professional development offerings in your school to meet the needs of teachers and their use of technology?	3.38	0.68	M
37. To what extent did your school head include the effective use of technology as a criterion for assessing the performance of faculty?	3.46	0.64	M
38. To what extent did your school head use technology as a primary means of assessment and evaluation of your school?	3.38	0.66	M
39. To what extent did your school head support technology in assessing and evaluating school personnel's performance?	3.43	0.65	M
40. To what extent did your school head promote assessment and evaluation to teachers and parents through the use of technology?	3.32	0.70	M
Overall assessment and evaluation	3.39	0.59	M

Note. M = Moderately. F = Fully.

The summary of results on the school heads' manifestations and levels of technology leadership is disclosed in Table 3.24. As displayed, school heads exhibit an overall moderate manifestations and levels of technology leadership ($M = 3.38$, $SD = 0.51$), which is due to the moderate manifestations and levels of the leadership dimensions among the five dimensions: Leadership and Vision ($M = 3.32$, $SD = 0.58$), Teaching and Learning ($M = 3.45$, $SD = 0.52$), Productivity and Professional Practice ($M = 3.40$, $SD =$

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

0.52), Support, Management and Operation ($M = 3.34$, $SD = 0.56$), and Assessment and Evaluation ($M = 3.39$, $SD = 0.59$).

As to the collective results on the Leadership and Vision dimension, it implies that the chance to improve the moderate to full manifestation of school heads' technology leadership in developing and adopting a shared vision, communicating information to stakeholders, creating a strategic plan, and encouraging the development of effective approaches for DCP integration can be done by making leadership and vision as one of the essential components of the proposed technology leadership model. While, to enhance the moderate to full level of school heads' technology leadership in advocating for the inclusion of research-based technology practices, aligning school technology plans with other plans, engaging technology activities, and promoting participation of school personnel and stakeholders can be realized by making leadership and vision as an essential component of the proposed technology leadership model.

In relation to the results on the Teaching and Learning dimension, it implies that the possibility to turn from moderate to full manifestation of school heads' technology leadership in providing available assistance to teachers, enforcing technology in teaching and learning, and integrating technology in monitoring and assessing teaching-learning lies in making teaching and learning as the integral component of the proposed technology leadership model. As to the improvement from moderate to full level of school heads' technology leadership in making available assistance to teachers to use technology for interpreting and analyzing data, disseminating best technological practices in teaching and learning, providing support to teachers, conducting needs assessment of

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

staff, and ensuring the delivery of professional development on the use of technology depends on the integration of teaching and learning as an important component of the proposed technology leadership model.

Anent to the findings on the Productivity and Professional Practice dimension, it can be inferred that the chance to turn from moderate to full manifestation of school heads' technology leadership in participating professional development activities, using technology to complete day-to-day tasks, and utilizing technology-based management system for staff/faculty personnel record, student record and income generating project can be done by ensuring the productivity and professional practice as a component of the proposed technology leadership model. Along with the improvement from moderate to full level of school heads' technology leadership in encouraging and using technology as a means of communication, supporting technology practice of teachers, and integrating technology for the productivity of parents and other stakeholders depends on making productivity and professional practice as one of the crucial components of the proposed technology model.

With regard to the outcomes on the Support, Management and Operation dimension, it can be deduced that the opportunity to strengthen from moderate to full manifestation of school heads' technology leadership in getting deeper support of faculty and staff, allocating higher campus discretionary fund to meet the technology needs, pursuing sufficient supplemental technology funds, and using technology resources in managing the school can be achieved by making Support Management and Operation as a component of the proposed technology leadership model. While the chance to maximize



the school heads' level of technology leadership from moderate to full, it is a mandate to make the support, management and operation as a component of the proposed technology leadership model, thereby making a more comprehensive school technology plan, and a higher level of advocacy for adequate, timely and high-quality technology support services.

Lastly, with respect to the findings on Assessment and Evaluation dimension, it can be discerned that the chance to improve this moderate to full manifestation of school heads' technology leadership in promoting the use of technology-based system to collect student's assessment data, assess the effectiveness of instructional practices, modify the existing operation systems, and meet the needs of teachers and their use of technology can be achieved by integrating assessment and evaluation as a significant component of the proposed technology leadership model. As to the opportunity to improve this moderate to full level of school heads' technology leadership in supporting technology for assessment and evaluation of school personnel's performance can be realized by integrating assessment and evaluation as one of the necessary components of the proposed technology leadership model.

Decisively, it is imperative to develop a Technology Leadership Model that can transform school heads, ICT coordinators, and teachers as effective DCP implementers.

Table 3.24

Summary of Descriptive Statistics on School Heads' Manifestations and Levels of Technology Leadership

Dimensions	<i>M</i>	<i>SD</i>	Desc.
Leadership and Vision	3.32	0.58	M
Teaching and Learning	3.45	0.52	M



Dimensions	<i>M</i>	<i>SD</i>	Desc.
Productivity and Professional Practice	3.40	0.52	M
Support, Management and Operation	3.34	0.56	M
Assessment and Evaluation	3.39	0.59	M
Overall Technology Leadership	3.38	0.51	M

Note. M = Moderately

Problem 4. Challenges Encountered by School Heads, ICT Coordinators, and Teachers in the DCP Implementation

Looking into the DCP challenges, Table 3.25 shows that low ratio of computers to learners is perceived as the most pervasive DCP issue encountered by the three groups of respondents: school heads (63.6%), ICT coordinators (78.8%), and teachers (65%). This is supported by the finding that one computer is to three or more learner ratio along the DCP profiling has the highest percentage, indicating inadequate technological resources to effectively implement the DCP across student populations.

School heads and teachers attest that problems encountered in the DCP include low ratio of computers to learners due to lack of proper report on actual number of computers needed and the increase in enrolment after submission of report.

“The most crucial problem...is the ratio of computers to learners... (RSH5, RSH8, RSH1, RT9, RT17),... because there is no actual verification on how many computers needed by a school like our school (RHS5), the change of enrolment after the pre-evaluation and no additional computers are given to meet the increase in enrolment (RSH8).”

These findings are similar with the studies conducted by Castro (2023), Mula and Bucar (2023), Palencia (2022), Lupina (2021), Bannan (2021), Gersalia et al. (2020), and Tuazon (2019) who found that ratio of computers to pupils is the greatest challenge in the DCP implementation.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

The second topmost problem is compounded by the issue which is the unstable internet connectivity according to school head (45.5%), ICT coordinators (51.5%), and teachers (57.6%), which can severely alter the maximum functionality of the DCP package and hinder the effectiveness of digital learning environments. This finding is quite relevant on the side of the school heads because most of the time they are required to submit reports via internet on time, and as to the teachers, they are required to access and download instructional materials from the net due to scarcity of K-12 textbooks.

Unstable internet connectivity increased the burden among school personnel in the implementation of DCP. This is proven by the respondents' responses during their in-depth interviews such as:

“Actually, the main problem that we are experiencing today is the slow (RSH1, RT12) and limited internet connectivity. . . we are only allowed to spend around 48,000 in a year for internet connectivity purposes. Yet, we have 5 internet connections...so 5 x 2,000 a month equals 10,000 a month x 12 months equals 120,000 in a year minus 48,000 equals 72,000... so we don't have enough budget.” (RSH7)

Also, teacher respondents (RT10, RT2, RT3, RT4, RT5, RT6, RT8, RT9, RT15, and RT16) encountered this issue on slow internet connectivity as underscored in their responses during the in-depth interview and FGD (See Appendix AQ).

Such DCP problem is similar to the studies undertaken by Palencia (2022), and Herrera and Janer (2018), which particularly alarms up to the senate level for only 1.8% of public schools nationwide have access to free public Wi-Fi based on the Department of Information and Communications Technology's Free Wi-Fi for all dashboard. This is because of their findings that only 860 public schools or 1.8% of the country's 47,421 public schools have free public Wi-Fi as of September 2, 2022.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Further, Sen. Sherwin Gatchalian flagged this during his interpellation of the proposed 2023 budget of the DICT, pointing out that the discovery comes five years after the enactment of Republic Act 10929 or the Free Internet Access in Public Places Act, and urged the department to ensure that it would hit its target in rolling out internet connection in public places, including educational institutions (Philstar, November 2022).

As supported by the challenges found by Fabito, Trillanes, and Sarmiento (2020), one of the topmost barriers of computing students in an online learning environment is the lack of a good Internet connection for participating in academic activities. They concluded that both students and faculty members were not fully prepared to undergo full online learning. More so, some faculty members might have failed to adapt to the needs of the students in an online learning environment.

Third issue is the lack of allotted funds for DCP package replacement/maintenance attributed by a substantial number of respondents (72.7% of ICT coordinators, 48% of teachers, and 39.4% of school heads), which further exacerbate the difficulty of sustaining technology-based education initiatives. This finding is in consonance to the common designation of ICT coordinators, which is the computer laboratory in-charge whose primary role is to maintain the functionality of the DCP package. Further, the percentage of the teachers that made the issue as the third topmost challenge is because they are required to use or integrate DCP in their daily teaching. The least percentage from the school heads depicts that DCP maintenance is not the priority of the school heads.



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

The crucial challenge experienced by ICT coordinators is similar to that of the school heads. They confirm that lack of funds for repair and rehabilitation is an existing concern because the maintenance of the DCP package is not included in the MOOE.

“We lack the necessary funds for repair and rehabilitation of this DCP. Meron tayong MOOE, pero the maintenance of the DCP package is not actually included as one of the Work Financial Plan or WFP. It’s one of the programs that you may add in your AIP or WFP, but it’s not a mandatory part of your plan to maintain them, kasi you cannot say when they will bug down. Usually, to get the maintenance budget for DCP, I realign our fund for that purpose.” (RSH7). (We lack the necessary funds for repair and rehabilitation of this DCP. We have MOOE, but the maintenance of the DCP package is not actually included as one of the Work Financial Plan or WFP. It’s one of the programs that you may add in your AIP or WFP, but it’s not a mandatory part of your plan to maintain them, because you cannot say when they will bug down. Usually, to get the maintenance budget for DCP, I realign our fund for that purpose.)

“Our crucial problem is the support from the DepEd. When there are malfunctioned devices, sometimes our school because of the limited sources of MOOE, the priority sometimes is not on the DCP. However, the most crucial problem when we received the DCP package is the support from the DepEd Central wherein we called them especially the supplier. Sad to say, no support from them that’s why as the ICT coordinator and in-charge, we do our best... for example, the warranty is already void because of the number of years, two years. What we did was to prepare or to update the destroyed or malfunctioned devices.” (RICT4)

When asked if DCP has achieved its goal, school heads, ICT Coordinators and teachers commented: *“maybe what went wrong is the sustainability of the DCP package because some sources are limited like the maintenance. Sometimes, MOOE is not enough for the maintenance of our DCP package.”* Similarly, RICT1, RICT3, and RT4 repeatedly affirm the problem on limited allotted funds. (See Appendix AR).

This is aligned with the study conducted by Castro (2023), Mula and Bucar (2023), Palencia (2022), Gersalia et al. (2020), Tuazon (2019), and Herrera and Janer (2018) who

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

discovered budgeting and financial management as a challenge in many schools. In relation to this, Rico (2021) stated that effective utilization of financial resources is needed to ensure an organization runs efficiently within the allotted budget for the repair of school equipment and tools, and improvement of learning outcomes, physical plant and facilities, ground maintenance, conduct of school activities, communication services and reproduction of learning resources.

Meanwhile, problems on the low-end/poor DCP computers/laptop/tablet, and lack of ICT/DCP-related trainings are both in the fourth spot of DCP challenges. School heads (39.4%), ICT coordinators (42.4%), and teachers (37.9%) believe that receiving a low-end/poor DCP computers/laptop/tablet really challenges the school's DCP implementation because this burden entails DCP budget maintenance by the school heads.

ICT Coordinators likewise encounter problems that include short usability of computers, low quality or low-end computers, substandard hardware, no replacement of non-serviceable units, and lack or absence of funds for maintenance.

"The problem is that the DCP packages are only working for a year or two. Then the rest, if they are destroyed, even no matter how we reported to the division office, there is still no DCP packages given to us." (RSH2)

"The most crucial is the outdated DCP package we received. . . those low-end computers . . . are of almost no value or less worth to the expected ICT skills to be learned by teachers and students. Administrator simply said, stop using it because it is outdated. We are just consuming a high-cost electricity gadget." (RT1).

"DCP computers are of not best quality. . . need constant maintenance, and hardware are often substandard. I addressed by upskilling myself to make all DCP work on tiptop shape. I also requested for maintenance expenses to keep them running." (RT15)



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

As to the issue on the ICT/DCP related trainings, this challenge is experienced most by the ICT coordinators (51.5%), teachers (42.9%), and school heads (33.3%). The ICT coordinators and teachers have to learn by themselves in using the DCP package to avoid going back to traditional way of teaching when they learn nothing.

“Actually, I don’t have formal DCP trainings, only training for digital journalism. . . . during the pandemic. . . we consumed most of our time every Saturday, every Friday to take seminars online.” (RT1)

“Not at all, but I have ICT-related trainings in our LAC sessions since we are integrating ICT topics, and there is a school-based training. I usually attend every month.” (RT2)

“... there is a DCP training but... only for the school head, ICT coordinator and property custodian. Actually, there is no such formal DCP trainings offered by the DepEd. That training was only for the orientation if they are going to deliver the package.” (RT4)

Likewise, RT5, RT8, RT10, RT12, and RT15 air the same desire to have formal DCP trainings because they have attended only ICT-related trainings. (See Appendix AS).

These findings are in line with the studies conducted by Castro (2023), Mula and Bucar (2023), Palencia (2022), Lupina (2021), Bannan (2021), Tuazon (2019), and Herrera and Janer (2018). Clearly, it can be said that DCP training is not known, and it is replaced by ICT trainings/workshops which are usually attended by few lucky selected teachers within or once a year.

As Bass (2021) mentioned in his study, the lack of professional learning opportunities has made it challenging for school leaders to know what resources should be purchased that would allow them to integrate technology effectively. This has brought them to be unprepared school leaders to serve as role models for the teachers they work.



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

With this, Gersalia et al. (2020) recommended the provision of capability building activities to school heads such as trainings, workshops and seminars with emphasis on the utilization of Enhanced Basic Education Information System (EBEIS) and Enterprise Human Resource Information System (EHRIS).

Finally, poor DCP classroom or ICT laboratory takes the sixth spot of DCP challenges as experienced by school heads (36.4%), ICT coordinators (51.5%), and teachers (36.2%). This finding is the expected concern among DCP recipients because transforming a usual classroom to an improvised DCP laboratory is the immediate response among school heads to address the DCP requirements. Likewise, the finding is in relation to the almost 50% existence of sub-standard size of DCP laboratory.

Such dismal result mentioned above is strongly supported by the experiences verbally shared by the school head and teacher respondents to the 7th question: *What is the most crucial problem you experienced because of the existence of DCP in your school? How did you address it?* as follows:

“The most crucial is the presence of computer laboratory because we lack classrooms... in the elementary level the DCP... is already included inside the classroom of our learners. We managed by putting the DCP packages in a spacious classroom... big television is in one classroom utilized by the secondary learners.” (RSH6). (The most crucial is the presence of computer laboratory because we lack classrooms... in the elementary level, the DCP is already included inside the classroom of our learners. We managed it by putting the DCP packages in a spacious classroom. Then, the big television is in one classroom used by the secondary learners.)

“The burden that I faced as a school head in relation to DCP is none other than the DCP laboratory or ICT laboratory. . . ., we don’t have enough financial resources to build a standard computer laboratory. . . . So, I . . . improvise an unoccupied old classroom to be our temporary DCP laboratory. . . the problem lies on the space of the room. . . computers are bulky . . . the ceiling of the room. . . it is old. So, during rainy season the rain dripped inside the room” (RSH8).

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

“We don't have a permanent computer laboratory because when there are division activities like this, our e-classroom is sacrificed. We move here, and there...” (RT6)

The above results align with the studies administered by Castro (2023), Mula and Bucar (2023), Palencia (2022), and Gersalia et al. (2020); and conforms to the review of Caincross and Mannion (2011) that before any ICT-based program is launched, policy makers and planners must carefully consider the appropriate rooms or building available to house the technology.

To encapsulate the topmost crucial challenges, comprising the six deemed problems such as the low ratio of computers to learners, unstable internet connectivity, no allotted funds for DCP package replacement/maintenance, lack of ICT/DCP-related trainings, low-end/poor DCP computers/laptop/tablet, and poor DCP classroom/no ICT laboratory, it can be conclusively stated that there is an apparent hindrance to the smooth and proper implementation of the DCP, requiring each school head to orchestrate technology approaches, to lessen the impact of these challenges, and to bridge the gap.

It can be deduced from the results that the adoption of the proposed Technology Leadership Model which could be employed by a school head through his/her technology leadership can get rid or if not totally solved, it can somehow minimize or reduce these technology challenges.


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Table 3.25
Descriptive Statistics on the Challenges Encountered by School Heads, ICT Coordinators, and Teachers in the DCP Implementation

Challenges	School heads			ICT coordinators			Teachers			Overall Rank
	f	%	Rank	f	%	Rank	f	%	Rank	
Low ratio of computers to learners	21	63.6	1	26	78.8	1	115	65	1	1
Unstable internet connectivity	15	45.5	2	17	51.5	3	102	57.6	2	2
No allotted funds for DCP package replacement/maintenance	13	39.4	5	24	72.7	2	85	48	3	3
Lack of ICT/DCP-related trainings	11	33.3	9	17	51.5	5	76	42.9	4	4.5
Low-end/poor DCP computers/laptop/tablet	13	39.4	4	14	42.4	8	67	37.9	6	4.5
Poor DCP classroom or ICT laboratory	12	36.4	8	17	51.5	4	64	36.2	7	6
No sustainability in the DCP implementation	14	42.4	3	12	36.4	10	64	36.2	8	7
Low level of ICT/DCP support from school alumni	12	36.4	7	16	48.5	7	50	28.2	11	8
Multiple ancillary functions of teachers	9	27.3	13	14	42.4	9	74	41.8	5	9
Lack of technical assistance from ICT experts	12	36.4	6	11	33.3	13	52	29.4	10	10
Low level of ICT/DCP support from Local Government Unit (LGU) and barangay officials	11	33.3	10	17	51.5	6	43	24.3	14	11
Low awareness of school stakeholders about the essence of DCP	8	24.2	14	12	36.4	11	55	31.1	9	12
No scheduled time for using DCP gadgets	11	33.3	11	8	24.2	15	49	27.7	12	13
Lack of technical skills in using technological gadgets	9	27.3	12	9	27.3	14	38	21.5	15	14
Low level of ICT/DCP support from the School-Parent-Teacher Association (SPTA)	8	24.2	15	12	36.4	12	37	20.9	16	15
No school guard for the DCP package/classroom security	7	21.2	16	8	24.2	16	48	27.1	13	16
No plans for the implementation of DCP	2	6.1	21	6	18.2	18	31	17.5	17	17
No skilled teacher/s for mentoring and coaching technological skills	3	9.1	18	4	12.1	19	14	7.9	20	18
No ICT/DCP LAC sessions were conducted in the school	2	6.1	20	6	18.2	17	11	6.2	22	19
Unusable delivered DCP package	5	15.2	17	2	6.1	22	14	7.9	21	20
Presence of DCP resistance among school personnel and stakeholders	3	9.1	19	2	6.1	23	15	8.5	19	21
Only the ICT Coordinator and the school head are knowledgeable about the DCP program	1	3.0	24	3	9.1	21	16	9	18	22
Lack of interest in the DCP program	1	3.0	22	4	12.1	20	11	6.2	23	23
No specific ICT coordinator/s in the school	1	3.0	23	1	3	24	0	0	25	24
No electricity in the school	0	0.0	25	0	0	25	2	1.1	24	25

Problem 5. Difference in the DCP Implementation according to Profile Variables

Having the descriptive and inferential statistics on the difference in the DCP Implementation across Personal Profile reflected in Table 3.26, it remarkably shows that among the personal profile variables, only two which are the highest educational

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

attainment and Reading as an ICT-related ancillary task manifest significant differences in the implementation of DCP. Specifically, the respondents who are Doctorate degree holders ($M = 3.21$, $SD = 0.30$), Master's degree with doctorate units ($M = 3.22$, $SD = 0.29$), Master's degree holders ($M = 3.51$, $SD = 0.28$), Bachelor's degree holders with master's units ($M = 3.37$, $SD = 0.27$), and Bachelor's degree holders ($M = 3.56$, $SD = 0.31$) have significant differences in the DCP implementation [$F(4, 216) = 2.32$, $p = .048$] with the effect size of .041.

Based on these findings, it is clearly shown that as the respondent possesses the higher level of education, s/he might have a better DCP implementation compared to those respondents who do not have a higher post-education degree. This connotation supports the idea that DCP implementation is anchored to the fast-changing ICT world in which respondents could gain the necessary skills in the tertiary institutions offering graduate programs.

School heads who manage their schools efficiently might believe that this is due to their post education. It would also mean that their teachers could teach effectively if they gained higher levels of education. As Ubben, Hughes, and Norris (2001) agreed, effective leadership style and teaching strategies are taken formally in graduate schools. It is then a very important tool towards school discipline, effectiveness and improvement, as well as establishing and maintaining a positive culture of teaching. Hence, it is safely said that teachers, ICT coordinators, or school heads with higher degrees can implement the DCP better.



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

However, according to Gabion and Gabion (2019) who conducted a study on the implementation of DepEd Computerization Program (DCP) and its influence on teachers' Information and Communication Technology (ICT) literacy and instructional competence, there is a significant difference in the extent of implementation of DepEd Computerization Program among teachers when classified according to length of service ($t = 2.518, p = 0.012$). Despite this, there are no significant differences in the extent of implementation of DepEd Computerization Program when teachers were classified according to sex ($F = 0.488, p = 0.626$), age ($t = 0.888, p = 0.375$), civil status ($F = 2.731, p = 0.067$), and educational attainment ($F = 1.779, p = 0.151$).

As to Reading as one of the major thrusts of education, it is a notable result that there exists a remarkable variation in the DCP implementation [$F(1, 216) = 9.04, p = .003$] with the effect size of .040, between the respondents who do not have Reading as an ICT-related ancillary task ($M = 3.22, SD = 0.27$), and respondents who have this task ($M = 3.53, SD = 0.29$).

In support to these findings, responses of teacher respondents to the 5th question during their FGD: *What are the benefits of DCP in you as a teacher aside from its importance in your daily teaching?* exhibit the difference in the implementation of DCP

"I am the School Reading coordinator, and I just simply received my additional coordinatorship that is for Catch-up Friday. DCP for me is a very important tool for me to achieve a better accomplishment in Reading. Through the use of DCP in our school, I don't need to print reading materials for our slow readers, but instead they just have their own computer and do the reading activity. Mas okay yun kasi meron silang sariling headphone para marinig nila yung tamang pronunciation..." (RT12)
(I am the school reading coordinator, and I just simply received my additional coordinatorship that is for Catch-up Friday. DCP for me is a very important tool for me to achieve a better accomplishment in Reading. Through the use of DCP in our school, I don't need to print reading materials for our slow readers, but instead they just have their own


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

computer and do the reading activity. That's better because they have their own headphones so they can hear the correct pronunciation....)

“With the use of DCP, I can easily do the reading activities. . . generate the automated results categorizing our learners into reading levels such as frustration, instructional, and independent.”(RT14)

Table 3.26

Descriptive and Inferential Statistics on the Difference in the DCP Implementation across Personal Profile Variables

Personal Profile	Descriptives		Comparison		
	M	SD	F	p	η_p^2
Length of service					
Above 30 years	3.26	0.26	1.49 ^a	.206	.027
21 to 30 years	3.42	0.28			
11 to 20 years	3.25	0.27			
1 to 10 years	3.22	0.26			
Below 1 year	3.73	0.44			
Highest educational attainment					
Doctorate degree holder	3.21	0.30	2.32 ^{a,*}	.048	.041 ^s
Master's degree holder with doctorate units	3.22	0.29			
Master's degree holder	3.51	0.28			
Bachelor's degree holder with master's units	3.37	0.27			
Bachelor's degree holder	3.56	0.31			
Information and Communications Technology					
No	3.38	0.26	0.01 ^b	.922	< .001
Yes	3.37	0.30			
Brigada Eskwela					
No	3.43	0.27	0.84 ^b	.362	.004
Yes	3.32	0.29			
Oplan Balik Eskwela					
No	3.22	0.26	3.30 ^b	.071	.015
Yes	3.53	0.31			
Learner Information System					
No	3.36	0.30	0.02 ^b	.886	< .001
Yes	3.39	0.28			
Enhanced Basic Education Information System					
No	3.34	0.27	0.16 ^b	.690	.001
Yes	3.41	0.31			
Disaster Risk Reduction and Management					
No	3.37	0.26	0.01 ^b	.917	< .001
Yes	3.38	0.31			
School-Based Feeding Program					
No	3.48	0.25	1.48 ^b	.225	.001
Yes	3.27	0.32			
Pantawid Pamilyang Pilipino Program					
No	3.32	0.26	0.42 ^b	.517	.002
Yes	3.43	0.31			
Boy/Girl Scouts of the Philippines					
No	3.45	0.27	1.77 ^b	.184	.008


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Personal Profile	Descriptives		Comparison		
	M	SD	F	p	η_p^2
Yes	3.30	0.29			
Catch-Up Fridays					
No	3.41	0.28	0.28 ^b	.600	.001
Yes	3.34	0.28			
Gulayan sa Paaralan					
No	3.33	0.25	0.29 ^b	.594	.001
Yes	3.42	0.32			
Reading					
No	3.22 _A	0.27	9.04 ^{b,*}	.003	.040 ^s
Yes	3.53 _B	0.29			
Journalism					
No	3.36	0.26	0.08 ^b	.779	< .001
Yes	3.39	0.30			
Research					
No	3.37	0.26	< .001 ^b	.993	< .001
Yes	3.38	0.31			
Sports					
No	3.33	0.26	0.49 ^b	.486	.002
Yes	3.42	0.30			
Others					
No	3.35	0.26	0.38 ^b	.537	.002
Yes	3.40	0.30			
No. of schools handled ^y					
4 or more schools	3.06	0.28	0.96 ^c	.431	.115
3 schools	2.53	0.24			
2 schools	2.93	0.16			
1 school	2.86	0.13			

 Note. ^a $df_M = 4$, $df_R = 216$. ^b $df_M = 1$, $df_R = 216$. ^c $df_M = 3$, $df_R = 22$.

 * $p < .05$, $y = \text{for school heads only}$

Delving into the descriptive and inferential statistics on the difference in the DCP Implementation across School Profile illustrated in Table 3.27, it can be said that there are no significant differences found based on the two school profile variables such as: size of school [$F(3, 22) = 0.97$, $p = .426$] with the effect size of .117, and type of school [$F(4, 22) = 0.55$, $p = .705$] with the effect size of .090. Based on the results, the implementation of DCP is not significantly different as implemented by the respondents when they are grouped according to their size and type of school they belong.

The school profile consisting of the size and type of school is found to be not significant variable to the DCP implementation because regardless of the size and type of



the DCP recipient schools, they will have the same kind of DCP orientation following the same program implementation to whatever package they received.

Table 3.27

Descriptive and Inferential Statistics on the Difference in DCP Implementation across School Profile Variables

School Profile	Descriptives		Comparison		
	M	SD	F	p	η_p^2
Size of school					
Mega	2.55	0.28	0.97 ^c	.426	.117
Large	3.03	0.20			
Medium	2.89	0.16			
Small	2.91	0.25			
Type of school					
Stand-Alone Senior High School	2.96	0.27	0.55 ^d	.705	.090
Integrated Junior High and Senior High School	2.96				
Junior High School		0.19			
Integrated Elementary and Junior High School	2.95	0.27			
Elementary	2.73	0.24			
	2.61	0.21			

Note. ^c $df_M = 3$, $df_R = 22$. ^d $df_M = 4$, $df_R = 22$.

* $p < .05$.

Considering the descriptive and inferential statistics on the difference in DCP Implementation across DCP profile variables outlined in Table 3.28, it can be noted that each of these variables has an influence on the DCP implementation, but conclusively not significant at all. This includes the number of computer to student-ratio in an ICT class [$F(2, 13) = 1.66$, $p = .228$] with the effect size of .203, number of ICT personnel [$F(2, 13) = 2.79$, $p = .098$] with the effect size of .300, number of computer laboratory or e-classroom [$F(2, 13) = 0.18$, $p = .837$] with the effect size of .027, number of serviceable computers [$F(2, 13) = 1.17$, $p = .342$] with the effect size of .152, number of non-



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

serviceable computers [$F(2, 13) = 2.12, p = .160$] with the effect size of .246, size of computer laboratory or e-classroom [$F(2, 13) = 3.80, p = .050$] with the effect size of .369, and maintenance budget [$F(1, 13) = 0.14, p = .712$] with the effect size of .011, showing no significant difference at all.

Enlightening the insignificant results on the computer-learner ratio, it can be discerned that the reason behind it is that schools having this challenge have better class programs such as class shifting, peer teaching, and batch learning for every learner that would have an ICT experienceable learning which is similar to the ideal effect of the computer-learner 1:1 ratio.

Notably, the nonsignificant result on the DCP maintenance budget conform to the remarks of the respondents that they are not totally dependent on DCP. They use their personal computers due to several reasons:

“During the NLC Assessment, we used the black laptops, and they are fairly stable in processing those applications, but . . . my personal laptop is better than the DCP package.” (RT5)

“... I go with my personal ICT gadget because I agree with Teacher... the one... given to me is actually outdated, naglolog-out talaga siya. (RT6). (Of course, sir I go with my personal ICT gadget because I agree with Teacher... The one that was given to me is actually outdated, it is actually logging out.)

“For me, it's better to use my personal laptop because I can carry it. . . bring it home... Whereas, the DCP package I cannot bring it home.” (RT13).

**Table 3.28**

Descriptive and Inferential Statistics on the Difference in DCP Implementation across DCP Profile Variables

DCP Profile	Descriptives		Comparison		
	M	SD	F	p	η_p^2
No. of computer to student-ratio in an ICT class					
1 computer is to 1 learner	3.02	0.44	1.66 ^e	.228	.203
1 computer is to 2 learners	3.49	1.24			
1 computer is to 3 or more learners	2.26	0.74			
No. of ICT personnel					
1 ICT teacher is to 1 grade level	4.19	1.11	2.79 ^e	.098	.300
1 ICT teacher is to 2 grade levels	1.38	0.69			
1 ICT teacher is to 3 or more grade levels	3.20	0.93			
No. of computer laboratory or e-classroom					
1 lab is to 1 grade level	3.25	1.20	0.18 ^e	.837	.027
1 lab is to 2 grade levels	3.08	1.17			
1 lab is to 3 or more grade levels	2.44	0.40			
No. of serviceable computers					
1 computer for every 10 computers	2.74	0.52	1.17 ^e	.342	.152
2 computers for every 10 computers	2.82	1.62			
3 or more computers for every 10 computers	3.22	0.50			
No. of non-serviceable computers (for condemnation)					
1 computer for every 10 computers	3.34	0.89	2.12 ^e	.160	.246
2 computers for every 10 computers	1.93	0.67			
3 or more computers for every 10 computers	3.50	0.84			
Size of computer laboratory or e-classroom					
Substandard (smaller than 7 m x 18 m)	2.55	0.68	3.80 ^e	.050	.369
Standard (7 m x 18 m)	3.40	0.72			
Oversize (larger than 7 m x 18 m)	2.81	0.89			
Maintenance budget					
Quarterly	2.74	0.63	0.14 ^f	.712	.011
Annually	3.10	1.03			

Note. ^e $df_M = 2$, $df_R = 13$. ^f $df_M = 1$, $df_R = 13$.

* $p < .05$.

Problem 6. Relationship between DCP implementation and school type

With Table 3.29 that displays the inferential statistics on the relationship between DCP implementation and school type, it is evident that though school type has no statistically significant association to the DCP implementation in terms of initiatives ($\chi_G^2 = 10.91$, $p = .497$), trainings ($\chi_G^2 = 5.81$, $p = .701$), programs ($\chi_G^2 = 6.52$, $p = .795$), and utilizations ($\chi_G^2 = 6.63$, $p = .558$), each of this indicator: initiatives ($V =$


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

.366), trainings ($V = .314$), programs ($V = .303$), and utilizations ($V = .339$), has a moderate strong correlation to the DCP implementation.

The crucial findings above significantly reveal that school type, which comprises Stand-Alone Senior High School, Integrated Junior High and Senior High School, Junior High School, Integrated Elementary and Junior High School, and Elementary School, is not really associated to the initiatives, trainings, programs, and utilizations of the DCP implementation. This is since school heads adhere to the existing policies on the proper implementation of DCP obliging them to follow the monitoring and evaluation of the DCP package, to allot usual appropriations to the DCP maintenance funds, and to integrate the DCP program to the school improvement plan.

The result implies that there is a need to optimize the DCP initiatives to advanced level by providing more trainings, better programs, and sufficient budget allocation. Hence, this result supports the development of a Technology Leadership Model.

Table 3.29
Inferential Statistics on the Relationship between DCP Implementation and School Type

Indicators	V	χ^2_G	p
DCP initiatives	.366 ^M	10.91	.497
DCP trainings	.314 ^M	5.81	.701
DCP programs	.303 ^M	6.52	.795
DCP utilizations	.339 ^M	6.63	.558
Overall implementation	.347 ^M	6.49	.638

Note. ^M Moderately strong correlation.

In relation to the crafting of the different components of the proposed technology leadership, the overall summary of the essential variables deemed to give positive effect is shown in Table 3.30.

**Table 3.30**

Summary Table of the Overall Results: Basis of the Proposed Technology Leadership Model

Variables	Quantitative Results	Descriptive Interpretation	Implication
<i>A. School heads' level of Support</i>			
DCP initiatives	2.83	Proficient	Needs improvement for advanced level
DCP trainings	3.13	High	Needs improvement for very high level
DCP programs	2.97	High	Needs improvement for very high level
DCP utilizations	3.25	High	Needs improvement for very high level
Overall	3.05	High	Needs improvement for very high level
<i>B. Manifestations and Levels of Technology Leadership</i>			
Leadership and Vision	3.32	Moderately	Needs improvement for full level
Teaching and Learning	3.45	Moderately	Needs improvement for full level
Productivity and Professional Practice	3.40	Moderately	Needs improvement for full level
Support, Management and Operation	3.34	Moderately	Needs improvement for full level
Assessment and Evaluation	3.39	Moderately	Needs improvement for full level
Overall	3.38	Moderately	Needs improvement for full level

It can be decisively drawn from the table that there is a necessity for crafting and proposing a technology leadership model containing the crucial dimensions as its primary components to be used by school heads to make their schools secured, modernized,

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

automated, responsive, and transformative in addressing the demands of the 21st century education. This conceptualized idea is anchored to the remarkable results on the proficient level of initiatives, high level of conducted trainings, high level of implemented programs, and high level of utilizations, as significant supports to the DCP implementation, as well as the moderate manifestations and levels of technology leadership in terms of its five domains: leadership and vision, teaching and learning, productivity and professional practice, support, management and operation, and assessment and evaluation.

Hence, a technology leadership model with primary components similar to the five dimensions embedded in this research endeavor is humbly proposed with its concise explanations and descriptions shown below.

Problem 7. Proposed Technology Leadership Model

LEADERSHIP MODEL TITLE: SMART Technology Leadership Model

RATIONALE

In the Philippines and elsewhere, there is an increasing recognition that the advent of ICTs is transforming economies and social processes (Hanna, 2010). ICT is indeed changing the corporate horizon for almost all sectors of the government. It can potentially benefit education, particularly, in many ways. From helping students learn in new and exciting ways, developing communication and teamworking skills or improving accessibility, teachers can use technology to adapt learning to each student's needs.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Digital learning can help students improve those invaluable digital skills which are fundamental in modern life. While today's learners are naturally proficient with technology like smart phones and computers, using them in an education setting throughout K-12 can familiarize them with more practical applications (Ciampa & Gallagher, 2013).

Moreso, it can have a positive impact on student engagement. It can help educators create exciting, engaging, and memorable lessons. Needless to say, higher engagement makes pupils more motivated and makes lessons more enjoyable for both students and teachers (Jang, 2008).

However, the education sector is beset with technical, content, utilization, programmatic, structural and political issues that prevent it from fully tapping the potentials of ICT (Kozma, 2005). This is proven through the dismal results of the study on the ratio of computers to learners, internet connectivity, DCP computers/laptop/tablet quality, and funds for DCP package replacement/maintenance being the topmost common DCP challenges encountered by the three groups of respondents: school heads, ICT coordinators, and teachers. Likewise, the moderate manifestations and levels of school heads' technology leadership along the five domains: leadership and vision, teaching and learning, productivity and professional practice, support, management and operation, and assessment and evaluation compounded the gap on the DCP implementation. Such identified problems, therefore, hindered the effective and efficient application of education technology in every school.

In light of these considerations, the researcher proposes a technology leadership

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

model to be used by school heads in the Schools Division of Isabela in making their schools technology prepared towards any 21st century educational trend.

OBJECTIVES

This proposed technology leadership model aims to:

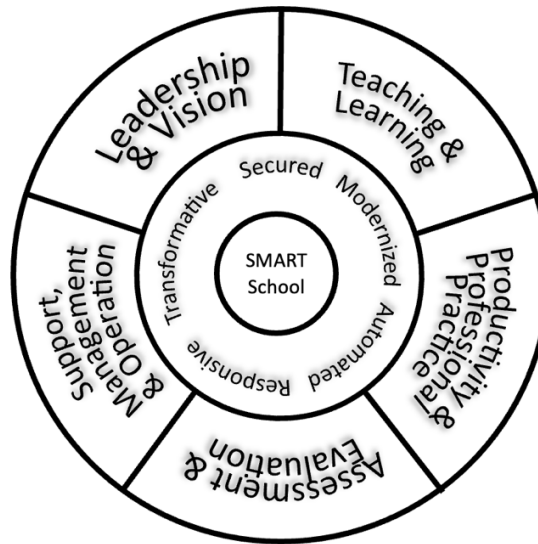
1. provide an opportunity for school leaders to discern the appropriate style of strategically leading the school personnel, strengthen the connections of school network, and assess organization's achievement vis-à-vis to the plan;
2. deepen the level of mentoring and coaching of school heads to the faculty and staff, and ensure the imparting of knowledge and developing of skills of teachers to students to happen;
3. ensure the establishment of income generating project, existence of outcome-based activity for research and innovation, and proper alignment of educational attainment to their instructional tasks as well as to their ancillary tasks;
4. increase the active participation of alumni, parents, officials of LGU (provincial, municipal, and barangay), government agencies, non-government organizations, and private institutions as an organizational support; and
5. ensure that every component and/or possible sector of the organization will have a regular monitoring, assessment and evaluation as a source of organizational feedbacking.



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

FRAMEWORK OF THE PROPOSED TECHNOLOGY LEADERSHIP MODEL



The figure above represents the proposed technology leadership model, its components, and its hypothesized effect, the Secured, Modernized, Automated, Responsive, Transformative (SMART) school. The outermost circle encompasses the five major components of the model. First of these is the Leadership and Vision, which is deemed as the most significant endeavor to be manifested by the leader of the educational organization. Along with it is the second most significant, Teaching and Learning, which is perceived to be the first component that is related significantly to the component, Leadership and Vision. Next is the Support, Management and Operation, which is deemed to be the second component that is related significantly to the component, Leadership and Vision. While the Productivity and Professional Practice is the component that is hypothesized to be related with Teaching and Learning component. Lastly, the Assessment and Evaluation, the crucial component of the model, is perceived to be related in both components, the Productivity and Professional Practice, and the

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Support, Management and Operation (NETS-A, 2005).

As to the kernel effect of the proposed technology leadership model, an educational institution that would properly and thoroughly use the five components of the proposed technology leadership model would turn into the hypothesized SMART school, having the following distinguished characteristics: Secured, Modernized, Automated, Responsive, and Transformative. A SMART school is presumed to have the special attributes through the school head's manifestation and his/her level of technology leadership as a result of an advanced DCP initiatives, a very high number of up-to-date DCP trainings, a very high number of innovative DCP programs, and a very high number of free DCP utilizations.

COMPONENTS OF THE PROPOSED TECHNOLOGY LEADERSHIP MODEL

The following components encompass the expected attributes of the school heads towards the realization of the Secured, Modernized, Automated, Responsive, Transformative (SMART) school as explained below:

Leadership. It is the primary component in the domain of Leadership and Vision. In this model, it refers to the manifestation of the school heads in leading the school personnel and managing the school resources. It is characterized by high level of innovation, up-to-date research-based information, and harmonious relationship in the organization.

Vision. It is the second component in the domain of Leadership and Vision. In this model, it refers to the goal of the school as an organization. It is characterized by

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

proficient level of understanding, high level of information dissemination, and full level of support to the goal of the organization.

Teaching. It is the first component of Teaching and Learning domain. In this model, it refers to the instructional activities of the school. It is characterized by proficient level of mentoring and coaching of school heads to the faculty and staff, and proficient level of imparting of knowledge, and developing of skills of teachers to students.

Learning. It is the second component of Teaching and Learning domain. In this model, it refers to any ICT/DCP-contested activities participated by the learners, and the degree of knowledge/skills in using ICT/DCP gadgets in any teaching-learning activity. It is characterized by the level of achievements of the learners in utilizing the different ICT/DCP programs/software.

Productivity. A component that is embedded in the technology resources and encompassed with the domain of Productivity and Professional Practice. In this model, it refers to the income generating projects and other activities that serve as the source of income anchored to the utilization of DCP resources along their quantity, availability, kind, and functionality.

Professional Practice. It is classified as one of the components under Productivity and Professional Practice domain. In this model, it refers to any activity, or initiative of school personnel in applying technology to enhance their professional practice and to increase their own productivity towards their professional growth, and that of others. It is characterized by proficient research and innovation, and high level of alignment of educational attainment to their instructional tasks.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Support. It is categorized as one of the components of Support, Management and Operation domain. In this model, it refers to the identified human and financial resources as scaffold of school's support. It is characterized by a high level of participation and financial donation of alumni, parents, officials of LGU (provincial, municipal, and barangay), government agencies, non-government organizations, and private institutions.

Operation. It is classified as one of the components of Support, Management and Operation domain. In this model, it refers to the school head's governance to the different resources of the school. It is characterized by enough school personnel, transparent expenditures, and sufficient physical resources.

Assessment. It is identified as one of the components of Assessment and Evaluation domain. In this model, it refers to the assessment of the variables such as teaching, educational attainment, and training of school personnel. It is characterized by conducting a quarterly assessment.

Evaluation. It is recognized as one of the components of Assessment and Evaluation domain. In this model, it refers to the measuring of achievements vis-à-vis to the plan of the two variables: leadership, and professional practice. It is characterized by conducting a quarterly evaluation with a very satisfactory accomplishment.

CHARACTERISTICS OF SMART SCHOOL

The following characteristics of SMART school are deemed to realize by fully adopting the proposed technology leadership model as explained below:

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Secured. It is one of the five distinguished characteristics of the SMART school, which is defined as the safeguarding of the physical and digital resources of the school (Brunner & Lewis, 2008). It is characterized by high level of approval of disaster risk reduction management agency like BFP, PNP, and MSWD for the security of physical resources, and high level of stability of electronic platforms of HRIS, EBEIS, LIS, instructional records, and DepEd Special Forms.

Modernized. It is one of the five distinguished characteristics of the SMART school, which is described as the level of utilization of technology in the following variables: leadership, vision, and teaching. It is characterized by high level of utilization of ICT/DCP gadgets in the school innovation and research, information dissemination, and establishment of harmonious relationship. Likewise, it is attributed by the high level of ICT/DCP utilization in mentoring and coaching of school heads to the faculty and staff, and imparting of knowledge and developing of skills of teachers to students (Papa, 2011).

Automated. It is one of the five distinguished characteristics of the SMART school, which is defined as the technology program that is used for school management and operation. It is characterized by high quality of ICT/DCP software, digital data bank, electronic communication, and stable school platform for information dissemination (Kwan, Chung, Yip, & Tam, 2003).

Responsive. It is one of the five distinguished characteristics of the SMART school, which is defined as the capability of the school to address local and global demands with respect to school governance and teaching and learning. It is characterized by proficient

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

and up-to-date curriculum, low to zero dropout rate, and high level of achievement rate (Khalifa, Gooden & Davis, 2016).

Transformative. It is one of the five distinguished characteristics of the SMART school, which is described as the kernel leadership style used by the school heads in the school operation and governance. It is characterized by proficient adoption of contemporary technology changes, and high level of participation in school planning that involves all departments, and other sectors (Nicol, 2014).



CHAPTER 4

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Presented in this chapter are the summary of the study, results, limitations, significant conclusions, and remarkable recommendations drawn by the researcher.

Summary of the Study

This study was conducted to describe the actual situation and evaluate the DCP implementation in the Schools Division of Isabela towards the development of a technology leadership model that will serve as a tool in monitoring and evaluating the different aspects of DCP implementation in schools.

Specifically, it sought to answer the following research questions:

1. What is the profile of the respondents in terms of:

1.1 Personal Profile

1.1.1 length of service;

1.1.2 highest educational attainment;

1.1.3 other ICT-related ancillary task/s;

(for items 1.1.4, 1.2.1, and 1.2.2, school heads only)

1.1.4 number of schools handled;

1.2 School Profile

1.2.1 size of school;

1.2.2 type of school;

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

1.3 DCP Profile

(for items 1.3.1 – 1.3.7, ICT coordinators only)

- 1.3.1 number of computer-to-student ratio in an ICT class;
- 1.3.2 number of ICT personnel;
- 1.3.3 number of computer laboratories or e-classrooms;
- 1.3.4 number of serviceable computers;
- 1.3.5 number of non-serviceable computers;
- 1.3.6 size of computer laboratory or e-classroom; and
- 1.3.7 maintenance budget?

2. What is the school heads' level of support in the implementation of the DCP in terms of:

- 2.1 DCP initiatives;
- 2.2 DCP trainings;
- 2.3 DCP programs; and
- 2.4 DCP utilizations?

3. What are the manifestations and levels of technology leadership of school heads along the following dimensions:

- 3.1 leadership and vision;
- 3.2 teaching and learning;
- 3.3 productivity and professional practice;
- 3.4 support, management and operation; and
- 3.4 assessment and evaluation?



4. What are the challenges encountered in the implementation of DCP by the:
 - 4.1 school heads;
 - 4.2 ICT coordinators; and
 - 4.3 teachers?
5. Is there a significant difference in the implementation of DCP when respondents are grouped according to their profile variables?
6. Is there a significant relationship between the implementation of DCP and the type of school?
7. What technology leadership model can be proposed based on the findings of the study?

Summary of Results

Based on the data gathered and presented, the researcher came out with the following results:

1. Respondents' Profile

1.1 Personal Profile

1.1.1 Length of service

Most of the teacher and ICT coordinator respondents have rendered a year up to 10 years, while most of the school heads have served more than 30 years of service as regular/permanent personnel of the DepEd Schools Division of Isabela.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

1.1.2 Highest educational attainment

Majority of the teachers and ICT coordinators are Bachelor's degree holders with Master's degree units, while most of the school head respondents are Doctorate degree holders.

1.1.3 Other ICT-related ancillary task/s

Being the adviser of SELG/SSLG, academic coordinator, and/or other DepEd Student's Club/Organization like YES-O, WINS, NDEP/BKD, and ESWM is the primary ancillary task assigned to teacher respondents; being the ICT/LIS coordinator as the primordial ancillary role given to the ICT coordinator respondents; and being the Brigada Eskwela coordinator as the primal ancillary function assigned to the school head respondents.

1.1.4 Number of schools handled

Most of the school heads are assigned to one school to manage, operate, and govern accordingly.

1.2 School Profile

Majority of the DCP recipient schools are in medium size with either 10-29 elementary or 10-25 secondary teachers, and most numbered by elementary schools.

1.3 DCP Profile

Most of the schools have standard size of computer laboratory (7 m × 18 m) with annual maintenance budget and have the following DCP ratios: one computer is to three or more learners, one ICT teacher is to three or more grade levels, one laboratory is to three or more grade levels, three or more serviceable computers for every 10 received



computers, and three or more non-serviceable computers for every 10 received computers.

2. School Head's Level of Support in the DCP Implementation

School heads have given proficient ($M = 2.83$, $SD = 0.77$) DCP initiatives, conducted high ($M = 3.13$, $SD = 0.61$) level of DCP trainings, implemented high ($M = 2.97$, $SD = 0.61$) number of DCP programs, and manifested high ($M = 3.25$, $SD = 0.58$) DCP utilizations. Overall, school heads have a proficient/high ($M = 3.05$, $SD = 0.55$) level of support in the DCP implementation.

3. Manifestations and Levels of School Heads' Technology Leadership

3.1 Leadership and Vision

As to technology leadership manifestations, school heads have moderately communicated information, moderately conducted planning, moderately engaged school's stakeholders, moderately encouraged the use of technology, and moderately built shared vision among school personnel and stakeholders.

As to the technology leadership levels, school heads have exhibited a moderate level of advocating the inclusion of research-based technology practices, moderate level of aligning school technology plans with other plans, moderate level of identifying best practices in the use of technology, and moderate level of promoting stakeholders' participation in the school's technology planning.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Overall, school heads have moderate ($M = 3.32$, $SD = 0.58$) manifestations and levels of technology leadership in terms of Leadership and Vision dimension.

3.2 Teaching and Learning

As to technology leadership manifestations, school heads have fully enforced technology in teaching-learning, moderately helped teachers to facilitate instruction, and moderately integrated technology in monitoring and assessing teaching-learning in the school.

As to technology leadership levels, school heads have exhibited a moderate level of dissemination of best technological practices, moderate level of support to teachers about technology practices, issues and concerns, and moderate level of delivery of professional development on the use of technology.

Overall, school heads have moderate ($M = 3.45$, $SD = 0.52$) manifestations and levels of technology leadership along Teaching and Learning dimension.

3.3 Productivity and Professional Practice

As to technology leadership manifestations, school heads have fully used technology to help complete day-to-day tasks, moderately participated in professional development activities, moderately used technology-based management system to access staff/faculty personnel records, moderately used technology in the Income Generating Project (IGP) for school's productivity, and moderately used technology-based management systems to access student records.

As to technology leadership levels, school heads have shown a full level of encouragement and full use of technology as a means of communicating with education



stakeholders, moderate level of support technology for the professional practice of teachers in the school and community, and moderate level of technology integration for the productivity of parents and other stakeholders.

Overall, school heads have moderate ($M = 3.40$, $SD = 0.52$) manifestations and levels of technology leadership on the dimension of Productivity and Professional Practice.

3.4 Support, Management and Operation

As to technology leadership manifestations, school heads have moderately supported faculty and staff in connecting and using school-level technology systems, moderately allocated campus discretionary funds, moderately pursued supplemental funding, moderately used technology as a means of support to teachers and staff, moderately utilized technology in managing the school, and moderately used technology in the school operation.

As to technology leadership levels, school heads have displayed a moderate level of ensuring that hardware and software replacements/upgrades were incorporated into school technology plans, and moderate level of advocating an adequate, timely and high-quality technology support services.

Overall, school heads have moderate ($M = 3.34$, $SD = 0.56$) manifestations and levels of technology leadership along Support, Management and Operation dimension.

3.5 Assessment and Evaluation

As to technology leadership manifestations, school heads have moderately promoted technology-based systems to collect student assessment data, moderately advocated the evaluation of instructional practices, moderately evaluated the existing technology-based



administrative and operation systems, moderately assessed the effectiveness of professional development offerings, and moderately used technology as a primary means of assessment and evaluation.

As to the technology leadership levels, school heads have demonstrated a moderate level of using technology as a criterion for assessing and evaluating the performance of faculty, parents, and other school personnel.

Overall, school heads have moderate manifestations and levels ($M = 3.39$, $SD = 0.59$) of technology leadership in terms of Assessment and Evaluation dimension.

Generally, school heads have exhibited moderate ($M = 3.38$, $SD = 0.51$) manifestations and levels of technology leadership, which are attributed by the five specific dimensions: Leadership and Vision, Teaching and Learning, Productivity and Professional Practice, Support, Management and Operation, and Assessment and Evaluation.

4. Challenges in the DCP Implementation

4.1 School Heads

Low ratio of computers to learners, unstable internet connectivity, no sustainability in the DCP implementation, low-end/poor DCP computers/laptop/tablet, no allotted funds for DCP package replacement/maintenance, and lack of technical assistance from ICT experts are the identified challenges deemed by the school heads in the DCP implementation.



4.2 ICT Coordinators

Low ratio of computers to learners, no allotted funds for DCP package replacement/maintenance, unstable internet connectivity, poor DCP classroom/ICT laboratory, lack of ICT/DCP-related trainings, and low level of ICT/DCP support from Local Government Unit (LGU) and barangay officials are the unfortunate experiences encountered by the ICT coordinators in the DCP implementation.

4.3 Teachers

Low ratio of computers to learners, unstable internet connectivity, no allotted funds for DCP package replacement/maintenance, lack of ICT/DCP-related trainings, multiple ancillary functions of teachers, and low-end/poor DCP computers/laptop/tablet are the challenges met by the teachers in the DCP implementation.

5. Difference in the DCP Implementation According to Profile Variables

Personal Profile

There is a remarkable difference in the DCP implementation of the respondents which lies only in the highest educational attainment [$F(4, 216) = 2.32, p = 0.048$] and Reading Coordinatorship [$F(1, 216) = 9.04, p = 0.003$] as an ancillary task across the different profile variables.

School Profile

There is no significant difference in the DCP implementation when respondents are grouped according to the size [$F(3, 22) = 0.97, p = 0.426$], or type [$F(4, 22) = 0.55, p = 0.705$] of school where they belong.



DCP Profile

There is no significant difference in the DCP implementation across the following DCP profile variables such as size of computer laboratory [$F(2, 13) = 3.80, p = 0.050$], maintenance budget [$F(1, 13) = 0.14, p = 0.712$], or ratios on computer to learner [$F(2, 13) = 1.66, p = .228$], ICT personnel to grade level [$F(2, 13) = 2.79, p = 0.098$], computer laboratory to grade level [$F(2, 13) = 0.18, p = 0.837$], and serviceable [$F(2, 13) = 1.17, p = 0.342$] and non-serviceable computers [$F(2, 13) = 2.12, p = 0.160$].

6. Relationship between DCP Implementation and School Type

There is no statistical significant association of any of the levels of support such as DCP initiatives ($\chi^2_G = 10.91, p = .497, V = .366$), DCP trainings ($\chi^2_G = 5.81, p = .701, V = .314$), DCP programs ($\chi^2_G = 6.52, p = .795, V = .303$), and DCP utilizations ($\chi^2_G = 6.63, p = .558, V = .339$) to any of the school types: Stand-Alone Senior High School, Integrated Junior High and Senior High School, Junior High School, Integrated Elementary and Junior High School, and Elementary School.

7. Proposed SMART Technology Leadership Model

The proposed SMART Technology Leadership Model has five major components: Leadership and Vision, Teaching and Learning, Productivity and Professional Practice, Support, Management and Operation, and Assessment and Evaluation. Its hypothesized effect is the Secured, Modernized, Automated, Responsive, Transformative (SMART) school. A SMART school is presumed to have the special attributes through the school

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

head's manifestation and his/her level of technology leadership as a result of an advanced DCP initiatives, a very high number of up-to-date DCP trainings, a very high number of innovative DCP programs, and a very high number of free DCP utilizations.

Specifically, this proposed technology leadership model aims to: (a) provide an opportunity for school leaders to discern the appropriate style of strategically leading the school personnel, strengthen the connections of school network, and assess organization's achievement vis-à-vis to the plan; (b) deepen the level of mentoring and coaching of school heads to the faculty and staff, and ensure the imparting of knowledge and developing of skills of teachers to students to happen; (c) ensure the establishment of income generating project, existence of outcome-based activity for research and innovation, and proper alignment of educational attainment to their instructional tasks as well as to their ancillary tasks; (d) increase the active participation of alumni, parents, officials of LGU (provincial, municipal, and barangay), government agencies, non-government organizations, and private institutions as an organizational support; and (e) ensure that every component and/or possible sector of the organization will have a regular monitoring, assessment and evaluation as a source of organizational feedbacking.

Limitations of the Study

The limitations of this study lie in the transcription of the Filipino/Tagalog responses to the questions as well as in the analysis of the facial actuation of the respondents during their in-depth interview and Focus Group Discussion.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

With the Local Government Executive Orders on the cancellation of face-to-face classes shifted to alternative delivery mode due to extreme heat and other calamities that might compromise the health and safety of learners, and DepEd Order No. 37, s. 2022 (Guidelines on the Cancellation or Suspension of Classes), the administration and retrieval of the survey questionnaire, and the conduct of in-depth interviews with some respondents under these municipalities were done in their respective homes/houses, which made the data-gathering longer.

Due to the non-existence of declared integrated schools in LD 4, one school respondent that offered a complete formal level of education from elementary, junior high to senior high school program was treated as an integrated elementary and junior high school respondent to represent the LD 4.

Further, a category that does not have a representative school in a legislative district was replaced by another school in the same legislative district but in another category. Since no schools of LD 3 and LD 6 offer junior high school programs based on the record of the ICT-Unit of SDO Isabela, they were substituted by integrated Junior High and Senior High.

Conclusions

In the light of the significant findings, the following conclusions are drawn:

1. The successful DCP implementations in schools requires good leadership that exhibits very satisfactory level of support along with initiatives, trainings, programs, and utilizations, and demonstrates very satisfactorily the manifestations



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

and levels of technology leadership on the five dimensions: leadership and vision, teaching and learning, productivity and professional practice, support, management and operation, and assessment and evaluation, which could be enhanced for a more successful DCP implementation.

2. There are common challenges that hinder the smooth and proper implementation of the DCP. These are the low ratio of computers to learners, unstable internet connectivity, no allotted funds for DCP package replacement/maintenance, low-end/poor DCP computers/laptop/tablet, lack of ICT/DCP-related trainings, and poor ICT/DCP laboratory, and the ancillary tasks assigned to ICT coordinators and teachers.
3. Highest educational attainment and Reading Coordinatorship as ancillary tasks are the only essential contributory factors across the different profile variables in the significant difference of DCP implementation.
4. To ensure a successful DCP implementation, a technology leadership model is developed to enhance the school heads' level of technology leadership along the domains of leadership and vision, teaching and learning, productivity and professional practice, support, management and operation, and assessment and evaluation anchored on the philosophy of SMART school.

Recommendations

Taking cue from the drawn valuable conclusions, the researcher humbly recommends the following:

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

1. A copy of the proposed Technology Leadership Model be submitted to the Research Unit of SDO Isabela for validation and consequently, be accepted as a guide for better DCP implementation.
2. An adequate budget for the DCP maintenance be allocated to the DCP school recipients for a functional DCP package.
3. The school leaders may exert special effort in providing DCP computers to reach 1:1 ideal ratio of computer to learner.
4. The top management may conduct a comprehensive DCP training aligned with the kind and the quality of the DCP package received by the different schools in the division.
5. Future researchers may conduct an assessment on the implementation of the SMART Technology Leadership Model across public schools.



REFERENCES

- Ahmed, A. (2019). The effects of globalization on global communication. *Bizfluent*. Retrieved from <https://bizfluent.com/info-8232542-effects-globalization-global-communication.html>
- Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology & Health*, 26(9), 1113-1127.
- Akinwumi, O. O., Babalola, Y. T., & Alegbeleye, G. O. (2021). Information and communication technology use on effective administration of public secondary schools, Lagos State, Nigeria. *International Journal of Innovative Research in Education, Technology & Social Strategies*, 8(1), 37-47.
- Alayan, G. A. (2022). School heads' technological leadership and teachers' ICT integration in instruction in the public elementary schools in the division of Quezon. *Psychology and Education: A Multidisciplinary Journal*, 3(2), 1-1.
- Ames, M. (2019). *The charisma machine: The life, death and legacy of One Laptop per Child*. MIT Press.
- Anderson, R. E., & Dexter, S. (2005). School technology leadership: An empirical investigation of prevalence and effect. *Educational Administration Quarterly*, 41(1), 49-82.
- Apsorn, A., Sisan, B., & Tungkunan, P. (2019). Information and communication technology leadership of school leadership in Thailand. *International Journal of Instruction*, 12(2), 639-650. <https://doi.org/10.29333/ijii.12240a>
- Arafeh, S. (2015). Educational technology leadership for education leaders: An integrated technology leadership model. In N. M. Haynes, S. Arafeh, & C. McDaniels (Eds.), *Educational leadership: Perspectives on preparation and practice* (pp. 253-269). Lanham, MD: University Press of America.
- Bannan, J. (2021). Lack of technology. Philadelphia Children's Foundation. Retrieved May 17, 2021, from <https://phillykids.org/about-p-c-f/lack-of-technology/>
- Bariu, T. N. (2020). Status of ICT infrastructure used in teaching and learning in secondary schools in Meru County, Kenya. *European Journal of Interactive Multimedia and Education*, 1(1), e02002.
- Bass, B. (2021). The effect of technology funding on school-level student proficiency. *Economics of Education Review*, 84, 1-22. <https://doi.org/10.1016/j.econedurev.2021.102151>


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

- Brasileño, I., & Bidad, W. D. (2021). The state of ICT integration in the school learning system in junior high schools, General Santos-Philippines. *Sapienza: International Journal of Interdisciplinary Studies*, 2(3), 76-88.
- Braun, V., & Clarke, V. (2017). Thematic analysis. *The Journal of Positive Psychology*, 12(3), 297-298.
- Brown, B., & Jacobsen, M. (2016). Principals' technology leadership: How a conceptual framework shaped a mixed methods study. *Journal of School Leadership*, 26(5), 811-836. Retrieved from <https://rowman.com/page/JSJ>
- Brunner, J. M., & Lewis, D. K. (2008). *Safe & secure schools: 27 strategies for prevention and intervention*. Corwin Press.
- Business. (2020). Characteristics of information and communication technologies and their roles in daily life. Retrieved from <https://www.scenerise.com/characteristics-of-information-and-communication-technologies-and-their-roles-in-daily-life/>
- Caincross, S., & Mannion, M. (2011). Interactive multimedia and learning: Realizing the benefits. *An Online Journal*, 2, 2011.
- Cantos, A. K. S., & Callo, E. C. (2022). The impact of school heads' technology leadership on teachers' technological proficiency and academic optimism. *International Journal of Educational Management and Development Studies*, 3(3), 106-127.
- Castro, B. (C). (2023). Sustainability of the DepEd Computerization Program (DCP) of public elementary schools in Sta. Cruz District. *International Journal of Research Publication and Reviews*, 4(10), 42-26.
- Ciampa, K., & Gallagher, T. L. (2013). Getting in touch: Use of mobile devices in the elementary classroom. *Computers in the Schools*, 30(4), 309-328.
- Commission on Audit. (2019). Consolidated annual audit report on the Department of Education for the year ended December 31, 2020, Part II-observations and recommendations. <https://coa.gov.ph/index.php/national-government-agencies/2019/category/8560-department-of-education>
- Creswell, J. W., Clark, Plano V. L., Gutmann, M., & Hanson, W. (2003). Advanced mixed methods research designs. In A. Tashakkori & C. Teddlie (Eds.), *Handbook on mixed methods in the behavioral and social sciences* (pp. 209-240). Thousand Oaks, CA: Sage.


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry & research design: Choosing among five approaches* (4th ed.). Sage Publications.
- Das, K. (2019). The role and impact of ICT in improving the quality of education: An overview. *International Journal of Innovative Studies in Sociology and Humanities*, 4(6), 97-103.
- Davies, P. M. (2010). On school educational technology leadership. *Management in Education*, 24(2), 55-61.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.
- Davis, F. D. (1993). User acceptance of information technology: System characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies*, 38(3), 475-487.
- Department of Education-Office of the Undersecretary for Administration (DepEd-OUA). (2021). Accelerating DepEd's computerization program: Digital learning requirements, aide memoire - 27 May 2020, updated 21 September 2021 (Document). https://authdocs.deped.gov.ph/wp-content/uploads/2021/09/OUA-AideMemoire_0921105_Accelerating-DepEds-Computerization-Program-Digital-Learning-Requirements_20210921rev.pdf
- DepEd Computerization Program Orientation Handbook for Batches 35, 36, 40 to 44. (2018). Retrieved from <https://www.teacherph.com/deped-computerization-program-dcp-orientation-handbook/>
- DepEd Order No. 78. (2010). <https://www.deped.gov.ph/2010/06/10/do-78-s-2010-guidelines-on-the-implementation-of-the-deped-computerization-program-dcp/>
- Emmanuel, N. M. (2021). Evaluating the use of ICTs in secondary school administration in Cameroon: The case of some secondary schools in the Buea municipality. *GPH-International Journal of Educational Research*, 4(02), 62-75.
- Fabito, B. S., Trillanes, A. O., & Sarmiento, J. R. (2020). Barriers and challenges of computing students in an online learning environment: Insights from one private university in the Philippines. arXiv preprint arXiv:2012.02121.
- Flanagan, L., & Jacobsen, M. (2003). Technology leadership for the twenty-first century principal. *Journal of Educational Administration*, 41(2), 124-142.
- Foley Curley, K. (1984). Are there any real benefits from office automation? *Business Horizons*, 27(4), 37-42.



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

- Funkhouser, E. (2009). The effect of kindergarten classroom size reduction on second grade student achievement: Evidence from California. *Economics of Education Review*, 28(3), 403-414.
- Gabion, D., & Gabion, A. (2019). Implementation of DepEd computerization program (DCP): Its influence to teachers' information and communication technology (ICT) literacy and instructional competence. *International Journal of Computer Science and Information Technology Research*, 7(4), 50-57.
- Garza, V. J. (2023). Technology leadership and teachers' perceptions of the principal technology leadership role (Doctoral dissertation, The University of Houston-Clear Lake).
- Gatchalian, W. (2021). DCP funds: More efficient roll-out of DepEd computerization program needed. Senator Win Gatchalian. Retrieved from <https://wingatchalian.com/news/more-efficient-roll-out-of-deped-computerization-program-needed/>
- Gersalia, D. L., Benavides, N. G., & Labo, A. D. (2020). Enhanced technical and administrative skills of school heads in Bulan District. *International Journal of Science and Research (IJSR)*, 9(5), 1-5.
- Global Education Monitoring Report Team. (2023). Technology in education: A case study on Singapore. <https://doi.org/10.54676/HOOV5879>
- Gulpan, J. O., & Baja, R. M. (2020). Technological leadership of 21st century principals of private secondary schools. *International Journal of Advances Research and Publications*, 4(4), 66-69.
- Häfner, P. (2020). Categorization of the benefits and limitations of immersive technologies for education. In *19th International Conference on Modeling & Applied Simulation* (pp. 154-159).
- Hamzah, M. I. M., Juraime, F., & Mansor, A. N. (2016). Malaysian principals' technology leadership practices and curriculum management. *Creative Education*, 7(7), 922-935.
- Hani, A. (2021). ICT solutions for Philippine public schools by 2022. Retrieved from <https://opengovasia.com/ict-solutions-for-philippine-public-schools-by-2022/#:~:text=The%20DCP%2C%20which%20aims%20to,sector%2C%20DepEd%20will%20receive%20P629>
- Hanna, N. K. (2010). *Transforming government and building the information society: Challenges and opportunities for the developing world



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

- Henderson, D. (2020). *Benefits of ICT in education*. IDOSR Journal of Arts and Management, 1, 5.
- Hero, J. L. (2020). Exploring the principal's technology leadership: Its influence on teachers' technological proficiency. *Online Submission*, 4(6), 4-10.
- Hernando-Malipot, M. (2022). DepEd's Digital Rise Program a key player to address challenges in education quality. *Manila Bulletin*. Retrieved from <https://mb.com.ph/2022/5/13/depeds-digital-rise-program-a-key-player-to-address-challenges-in-education-quality>
- Hoy, B. W. (2016). The Fourth Industrial Revolution: The 7 technologies changing our world: When will the future "arrive"? *World Economic Forum*. <https://www.linkedin.com/pulse/fourth-industrial-revolution-7-technologies-changing-our-bruce-hoy/>
- Infocomm Media Development Authority. (2019). *NEU PC Plus Programme*. Retrieved from https://www.itu.int/net4/wsis/archive/stocktaking/Project/Details?projectId=1514874908&fbclid=IwAR1omkdXSfjJBQZklmWg_kvXRHa7Phz3oS6JgIAC0dPNf8JjLJLsMgFdWXA
- International Society for Technology in Education (ISTE). (2009). *ISTE standards administrators*. Retrieved from <https://iste.org/standards>
- International Society for Technology in Education (ISTE). (2018). *International Society for Technology in Education*. Retrieved from <https://www.iste.org/standards/for-education-leaders>
- Jang, H. (2008). Supporting students' motivation, engagement, and learning during an uninteresting activity. *Journal of Educational Psychology*, 100(4), 798.
- Kaleci, F., & Cihangir, A. (2019). The integration of information and communication technologies for education: Comparative analysis of Turkey and Singapore. *Ahmet Keleşoğlu Eğitim Fakültesi Dergisi*, 1(2), 139-161.
- Keenze, A. (2022). Using mobile to make parent communication more meaningful. Retrieved from <https://blog.schoolmint.com/using-mobile-to-make-parent-communication-more-meaningful>
- Khalifa, M. A., Gooden, M. A., & Davis, J. E. (2016). Culturally responsive school leadership: A synthesis of the literature. *Review of Educational Research*, 86(4), 1272-1311.


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

- Kirk, R. E. (1996). Practical significance: A concept whose time has come. *Educational and Psychological Measurement*, 56, 746-759.
- Kline, P. (1999). *The handbook of psychological testing* (2nd ed.). Routledge.
- Kozma, R. B. (2005). National policies that connect ICT-based education reform to economic and social development. *Human Technology: An Interdisciplinary Journal on Humans in ICT Environments*.
- Kwan, A. C., Chung, K. C., Yip, K. K., & Tam, V. (2003). An automated school timetabling system using hybrid intelligent techniques. In *Foundations of Intelligent Systems: 14th International Symposium, ISMIS 2003*, Maebashi City, Japan, October 28-31, 2003 (pp. 124-134). Springer Berlin Heidelberg.
- Lupina, S. P. (2021). *A multiple case study on the implementation of DepEd computerization program (DCP): School heads' initiatives in focus* (Unpublished master's thesis). St. Mary's College of Tagum, Inc., Tagum City, Davao del Norte.
- Machmud, M. T., Widiyan, A. P., & Ramadhani, N. R. (2021). The development and policies of ICT supporting educational technology in Singapore, Thailand, Indonesia, and Myanmar. *International Journal of Evaluation and Research in Education*, 10(1), 78-85.
- Martinuzzi, B. (2019). Leading by example. Retrieved from the World Wide Web: https://www.mindtools.com/pages/article/newLDR_60.htm
- Mendoza, T., & Catiis, E. (2022). Administrators' technology leadership: Its influence on teachers' technology proficiency. *International Research Journal of Science, Technology, Education, and Management*, 2(3), 67-75.
- Meza-Cordero, J. (2022). Digital literacy and long-term labor outcomes: Impacts from the One Laptop per Child Program in Costa Rica. *The Journal of Community Informatics*, 18(2), 27-47.
- Minaz, O., Baki, U. M., Ozel, Y., & Ay, M. (2022). The relationship between principals' technological leadership competence and school effectiveness. *Education Quarterly Reviews*, 5(4).
- Mora, T., Escardíbul, J. O., & Di Pietro, G. (2018). Computers and students' achievement: An analysis of the One Laptop per Child program in Catalonia. *International Journal of Educational Research*, 92, 145-157.



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

- Mula, R. S., & Bucar, J. D. (2023). Department of Education Computerization Program (DCP): Its effectiveness and problems encountered in school personnel's computer literacy. *International Journal of Multidisciplinary: Applied Business and Education Research*, 4(4), 1221-1250.
- Mullen, C. (2019, May 1). 21st-century priorities for leadership education and prospective school leaders. Retrieved from https://www.researchgate.net/publication/331718834_21stCentury_Priorities_for_Leadership_Education_and_Prospective_School_Leaders
- Narra, N. (2021). The 10 benefits of digitalizing school administration. Retrieved from <https://goschooler.com/benefits-of-digitalizing-school-administration/>
- National Educational Technology Standards for Administrators. (2005). *NETS news*. Retrieved from http://cnet.iste.org/administrators/a_stands.html
- Ng, I., Sun Sun, L., Pang, N., Lim, D., Soh, G., Pakianathan, P., & Ang, B. (2021). From digital exclusion to universal digital access in Singapore. Retrieved from https://fass.nus.edu.sg/ssr/wp-content/uploads/sites/8/2021/01/Digital-Access-20210118.pdf?fbclid=IwAR3DPqTnavIc-CaKcgE-Tiv2B1RzuD5oWV_QMHeVpKwaDU3Cvov1fSjgrB4
- Ngozi, A. L., Ogunode, N. J., & Olatunde-Aiyedun, T. G. (2022). Assessment of Information and Communication Technology (ICT) usage for school administration in early child care centre in Gwagwalada Area Councils, FCT.
- Nicoll, W. G. (2014). Developing transformative schools: A resilience-focused paradigm for education. *International Journal of Emotional Education*, 6(1), 47-65.
- Ocampo, D., & Lucasan, K. L. M. (2019). Key issues in governance, finance, school improvement, and ICT in basic education. University of the Philippines, Center for Integrative and Development Studies.
- OECD/UNESCO. (2016). *Education in Thailand: An OECD/UNESCO perspective*. Paris: OECD and United Nations Educational, Scientific, and Cultural Organization, OECD Publishing. Retrieved from <http://unesdoc.unesco.org/images/0024/002457/245735e.pdf>
- Olowonefa, G. S. (2022). Impact of information communication technology on secondary school administration in Federal Capital Territory, Abuja, Nigeria. *International Journal on Integrated Education*, 5(3), 266-273.
- Paine, S. (2019). Engaging stakeholders. *Sustaining Reading First*, 6. <https://www2.ed.gov/programs/reading/first/support/stakeholderlores.pdf>


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

- Palencia Jr, V. C. (2022). Performance and practices of information communication technology (ICT) coordinators in Irosin District. *International Journal of Contemporary Applied Researches*, 9(3), 1-34.
- Papa, R. (Ed.). (2011). *Technology leadership for school improvement*. Sage.
- Philstar Global. (November, 2022). Schools with no internet in the Philippines. Senator says less than 2% of public schools have free public Wi-Fi. <https://www.philstar.com/headlines/2022/11/21/2225428/senator-says-less-2-public-schools-have-free-public-wi-fi>
- Phutela, N., & Dwivedi, S. (2019). Impact of ICT in education: Students' perspective. In *Proceedings of International Conference on Digital Pedagogies (ICDP)*.
- Pirani, S., & Hussain, N. (2019). Technology is a tool for learning: Voices of teachers and parents of young children. *Journal of Education & Social Sciences*, 7(1), 55-66.
- Quidasol, G. D. A. (2020). School heads technology leadership and its relationship with teachers and learners performance. *International Journal of Advanced Research*, 8(07), 12-22.
- Ratheeswari, K. (2018). Information communication technology in education. *Journal of Applied and Advanced Research*, 3(1), 45-47.
- Richardson, J. W., & Sterrett, W. L. (2018). District technology leadership then and now: A comparative study of district technology leadership from 2001 to 2014. *Educational Administration Quarterly*, 54(4), 589-616. <https://doi.org/10.1177/0013161x18769046>
- Rico, K. B. (2021). Utilization of financial resources and development of school facilities and services for students and teachers of Esperanza National High School. *Randwick International of Education and Linguistics Science Journal*, 2(3), 325-338.
- Rodriguez, M. M. (2022). *Implementation of the Department of Education computerization program (DCP) in the Division of Isabela: Basis for an action plan* (Unpublished doctoral dissertation). St. Paul University Philippines, Tuguegarao City, Cagayan.
- Sharda, R., Barr, S. H., & McDonnell, J. C. (1988). Decision support system effectiveness: A review and an empirical test. *Management Science*, 34(2), 139-159.


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

- Shatri, Z. G. (2020). Advantages and disadvantages of using information technology in learning process of students. *Journal of Turkish Science Education*, 17(3), 420-428.
- Shoraevna, Z., Eleupanovna, Z., Tashkenbaevna, S., Zulkarnayeva, Z., Anatolevna, L., & Nurlanbekovna, U. (2021). Teachers' views on the use of information and communication technologies (ICT) in education environments. *International Journal of Emerging Technologies in Learning (iJET)*, 16(3), 261-273.
- Thannimalai, R., & Raman, A. (2018). The influence of principal's technology leadership and professional development on teachers' technology integration in secondary schools. *Malaysian Journal of Learning and Instruction*, 15(1), 203-228.
- The Education Hub. (2019). Dewey's educational philosophy. <https://theeducationhub.org.nz/category/school-resources/>
- Tuazon, I. Q. (2019). Implementation of DepEd computerization program (DCP) for the indigenous people. *Asian Journal of Educational Research*, 1, 1-14.
- Tubplee, E. (2019). One tablet per child policy in Thailand. *Academic Journal Bangkokthonburi University*, 8(1), 220-231.
- Ubben, G. C., Hughes, L. W., & Norris, C. J. (2001). *The principal: Creative leadership for effective schools*. Allyn & Bacon/Longman Publishing, a Pearson Education Company. <http://www.abacon.com>
- UNESCO IIEP Learning Portal. (2021). *Information and communication technologies (ICT)*. <https://learningportal.iiep.unesco.org/en/glossary/information-and-communication-technologies-ict>
- Ukpoma, E. (2019). Use of ICT applications for secondary schools administration. <https://open.library.okstate.edu/adect/chapter/use-of-ict-applications-for-secondary-schools-administration/>
- Xhuraj, M., Mehmetaj, B., & Berisha, R. (2023). Challenges and advantages of technology integration in the learning process. *Education Journal of Educational Research*, 5(9-10), 117-127.
- Yusof, M. R., Yaakob, M. F. M., & Ibrahim, M. Y. (2019). Digital leadership among school leaders in Malaysia. *International Journal of Innovative Technology and Exploring Engineering*, 8(9), 1481-1485. <https://doi.org/10.35940/ijitee.i8221.078919>

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX A**LETTER TO THE SCHOOLS DIVISION SUPERINTENDENT**

April 3, 2024

RACHEL R. LLANA, PhD, CESO V*Schools Division Superintendent*

DepEd, Schools Division of Isabela

Alibagu, City of Ilagan

Madam:

I am currently undertaking a research titled "DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model" in partial fulfillment of the requirements for the degree, Doctor of Philosophy in Educational Management at the Philippine Normal University-North Luzon, Alicia, Isabela.

In view hereof, may I earnestly request an approval from your office to administer this study and to float the three (3) sets of questionnaire to all DCP school recipients across all levels from elementary schools to senior high schools in the division. Likewise, may I be permitted to conduct an in-depth interview and focus group discussion to some of the school head, ICT coordinator, and teacher respondents after retrieval to triangulate the veracity of the data and to establish the reliability of my research instrument.

Rest assured that this endeavor will conform to the Data Privacy Act of 2012 (RA 10173), which is intended to protect the integrity and security of personal data of any person involved in this study.

Your support and approval to this humble request would open an opportunity for me as an educational researcher to contribute essential data for the improvement and sustainability of quality education in our division.

Thank you and may God reciprocate your kindness in a hundredfold.

Very truly yours,

Handwritten signature of Jerry F. Gallestre in black ink.

JERRY F. GALLESTRE

Graduate Student

Noted:

Handwritten signature of Agnes S. Reyes in black ink.

AGNES S. REYES, PhDDissertation Adviser
Education

Handwritten signature of Clemente M. Aguinaldo Jr. in black ink.

CLEMENTE M. AGUINALDO JR., PhD

Associate Dean, Faculty of Teacher

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX B**APPROVED LETTER BY THE SCHOOLS DIVISION SUPERINTENDENT**

Republic of the Philippines

Department of EducationREGION II – CAGAYAN VALLEY
SCHOOLS DIVISION OF ISABELA**1st Indorsement**

April 3, 2024

Respectfully returned to **JERRY F. GALLESTRE**, Graduate School Student, Philippine Normal University-North Luzon, Alicia, Isabela, the herein request to conduct a study entitled: *"DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model"*, with the information that said request is APPROVED, provided that there is no disruption of classes.

Mr. Gallestre is expected to submit a copy of his manuscript to this office after its completion for reference purposes.


RACHEL R. LLANA, PhD, CESO V
Schools Division Superintendent



Alibagu, City of Ilagan, Isabela 3300
(078) 325-2705
isabela@deped.gov.ph

 deped-isabela.com.ph
 Sdo Isabela

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX C**LETTER TO THE DIVISION INFORMATION TECHNOLOGY OFFICER**

April 3, 2024

ORLANDO L. NICOLAS, JR.

Information Technology Officer I

DepEd, Schools Division of Isabela

Alibagu, City of Ilagan

Sir:

I am currently undertaking a research titled **“DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model”** in partial fulfillment of the requirements for the degree, Doctor of Philosophy in Educational Management at the Philippine Normal University-North Luzon, Alicia, Isabela.

In view hereof, may I humbly request the list of DCP recipient schools in the elementary, junior, integrated elementary and junior, integrated junior and senior, and stand-alone senior high schools in our division starting from the School Year 2017-2018 up to School Year 2022-2023.

Attached herewith is the approved letter duly signed by the Schools Division Superintendent allowing me to conduct such research activity in our beloved division.

Rest assured that the essential data from your office will be used appropriately for the betterment and sustainability of quality education in our division.

Thank you and may God reciprocate your kindness in a hundredfold.

Very truly yours,

A handwritten signature in black ink, appearing to read "Jerry F. Gallestre".

JERRY F. GALLESTRE

Graduate Student

Approved:

A handwritten signature in black ink, appearing to read "Orlando L. Nicolas, Jr.".

ORLANDO L. NICOLAS, JR.

Information Technology Officer I

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX D**LETTER TO THE EXPERTS FOR CONTENT VALIDATION OF THE INSTRUMENT**

April 3, 2024

Sir/Madam:

Warm Greetings!

I am currently undertaking a research titled **“DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model”** in partial fulfillment of the requirements for the degree, Doctor of Philosophy in Educational Management at the Philippine Normal University-North Luzon, Alicia, Isabela. This study wishes to explore the actual situation of DCP by evaluating the implementation of the DCP among public schools in the Schools Division of Isabela towards the development of a technology leadership model to be used by school heads making their schools technologically prepared in addressing the demands of the 21st century education.

In view hereof, may I humbly ask your expert service to be one of the validators of my questionnaire before administering it to the participants of the study. Considering your knowledge and expertise in the field of research, I am confident that you can give professional assistance to validate such questionnaire as to the format and content making it a valid research instrument.

In this study, I will employ mixed method explanatory sequential design which according to Creswell et al. (2003), the quantitative data will be collected first, followed by the qualitative data from the respondents to provide a comprehensive understanding of the school head's level of support in the DCP implementation in terms of DCP initiatives, programs and trainings, technology leadership manifestations and levels, and DCP challenges.

For the quantitative component, a structured survey questionnaire will be administered to all DCP school recipients across all levels from elementary schools to senior high schools in the Schools Division of Isabela. The research instruments consist of 3 sets, first set is designed for school head, second set is intended for ICT coordinator, and the last set is for teacher respondents with the following parts: (1) Personal Profile, which intends to determine the respondents' length of service, highest educational attainment, other ICT

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

related ancillary task/s, and number of schools handled; (2) School Profile, which aims to identify the school heads' school size and type; (3) DCP Profile, which seeks to ascertain the school's quantitative data along computer to student ratio in an ICT class, ICT personnel, computer laboratory/e-classroom, serviceable and non-serviceable computers, size of computer laboratory/e-classroom, and maintenance budget; (4) Level of Support in the DCP implementation, which is designed to assess the school heads' level of support in terms of DCP initiatives, DCP trainings, and DCP programs; (5) Technology Leadership Manifestation and Level, which is tailored to measure the school heads' manifestation and level of technology leadership as to the five dimensions such as: leadership and vision, teaching and learning, productivity and professional practice, support, management and operation, and assessment and evaluation; and (6) DCP Challenges, which is crafted to elicit the problems/issues/concerns/hindrances encountered by the school heads, ICT coordinators, and teachers in the DCP implementation.

Likewise, an in-depth interview and focus group discussion will be conducted to some of the school heads, ICT coordinators, and teachers after retrieval to gather qualitative insights into their individual experiences, triangulate the veracity of the data, and establish the reliability of my research instrument.

Rest assured that your propositions and evaluations will be appropriately applied to further improve the relevance of this study. Though there is no monetary compensation connected with this endeavor, your expertise and feedback is highly appreciated. Moreover, this academic undertaking will not put you into any professional risk or criticism that might tarnish your integrity as a validator.

Thank you for considering my request. I look forward to your favorable response.

Respectfully,

JERRY F. GALLESTRE

Researcher

gallestre.jf@stud.pnu.edu.ph

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX E**LETTER TO THE PUBLIC SCHOOLS DISTRICT SUPERVISOR OF SAN MANUEL
DISTRICT FOR PILOT TESTING**

April 11, 2024

ELIZABETH B. BUENO, PhD*Public Schools District Supervisor*

San Manuel District

San Manuel, Isabela

Madam:

Warm Greetings!

I am a student-researcher of the Graduate School of Philippine Normal University-North Luzon currently conducting my research titled **DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model**. This study aims to evaluate the DepEd Computerization Program (DCP) implementation in the Schools Division of Isabela, DepEd, Philippines towards the development of a technology leadership model to be used by school heads making their schools technologically prepared in addressing the demands of the 21st century education.

Three (3) of your public schools namely: San Manuel Central School, Malalinta National High School, and Callang National High School were randomly chosen as pilot testing schools for the validation of my research instrument. Anent to this, may I humbly request permission and approval from your Office to administer my research instruments to five (5) members of the faculty, the school ICT coordinator, and the school head of each school.

Rest assured that this activity will not disrupt any academic activities of the above-mentioned schools. Likewise, this endeavor will conform to the Data Privacy Act of 2012 (RA 10173), which is intended to protect the integrity and security of personal data of any person involved in this study.

Attached herewith is the approved letter duly signed by our Schools Division Superintendent for your perusal.

Thank you and may God reciprocate your kindness in a hundredfold.

Very truly yours,

JERRY F. GALLESTRE

Graduate Student

Noted:

AGNES S. REYES, PhD

Dissertation Adviser

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX F**LETTER TO THE SCHOOL HEADS OF SAN MANUEL DISTRICT FOR PILOT TESTING**

April 11, 2024

Sir/ Madam:

Warm Greetings!

I am a student-researcher of the Graduate School of Philippine Normal University-North Luzon currently conducting my research titled **DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model**. This study aims to evaluate the DepEd Computerization Program (DCP) implementation in the Schools Division of Isabela, DepEd, Philippines towards the development of a technology leadership model to be used by school heads making their schools technologically prepared in addressing the demands of the 21st century education.

Your school is randomly chosen as one of the pilot testing schools in San Manuel District for the validation of my research instrument. Anent to this, may I humbly request permission and approval from your Office to administer my research instruments to you as the school head, your designated ICT coordinator, and five (5) members of your faculty on April 11, 2024.

Rest assured that this activity will not disrupt any academic activities of the above-mentioned schools. Likewise, this endeavor will conform to the Data Privacy Act of 2012 (RA 10173), which is intended to protect the integrity and security of personal data of any person involved in this study. Moreover, this academic undertaking will not put you into any professional risk or criticism that might tarnish your integrity as a school leader.

Attached herewith is the approved letters duly signed by the Public Schools District Supervisor of San Manuel District and our Schools Division Superintendent for your perusal.

Thank you and may God reciprocate your kindness in a hundredfold.

Very truly yours,

JERRY F. GALLESTRE
Graduate Student

Noted:

AGNES S. REYES, PhD
Dissertation Adviser



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX G

RELIABILITY ANALYSIS REPORT BY THE STATISTICIAN

DCP Implementation

Results

The following are the results of the statistical analyses.

This analysis utilized the McDonald's ω to assess the reliability of the five scales. Based on the results in Table 1, all components of the Level of Support in the DCP Implementation scale, which is Part III of the research questionnaire, all components or subscales—namely DCP initiative, DCP trainings, DCP programs, and DCP utilization—showed high reliability during the pilot testing,

Table 1
Reliability Statistics

Component	ω
Level of support in the DCP implementation	
DCP initiatives	.803
DCP trainings	.780
DCP programs	.848
DCP utilization	.883
Technology leadership manifestations and levels	.951

Moreover, the Technology Leadership Manifestations and Levels scale, which is Part IV of the questionnaire, also exhibited high reliability.

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX H**LETTER OF ADAPTION**

April 14, 2024

VERONICA JEAN GARZA, M. Ed.*Author-Researcher*Technology Leadership and Teachers' Perceptions
of the Principal Technology Leadership RoleGarzaV8066@UHCL.edu

Madam:

Warm Greetings!

I am a student-researcher of the Graduate School of Philippine Normal University-North Luzon currently conducting my research titled **DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model**. This study aims to evaluate the DepEd Computerization Program (DCP) implementation in the Schools Division of Isabela, DepEd, Philippines towards the development of a technology leadership model to be used by school heads making their schools technologically prepared in addressing the demands of the 21st century education.

In view hereof, may I humbly request permission to adapt your research instrument from your study titled **Technology Leadership and Teachers' Perceptions of the Principal Technology Leadership Role**, (pp. 187-194) published at the University of Houston-Clear Lake, 2700 Bay Area Blvd, Houston, TX 77058, United States in May 2023. The electronic copy of your study is accessible to researchers like me through tdl.org of google scholar.

Rest assured that your name as the author of the study and owner of the research instrument be given appropriate recognition and acknowledgment in my research. Moreover, this endeavor will not put you into any professional risk or criticism that might tarnish your integrity as a writer or researcher.

Your approval to this humble request would mean a strong support to the educational research endeavors and open an opportunity for the completion of my research.

Thank you and may God reciprocate your kindness in a hundredfold.

Very truly yours,

Handwritten signature of Jerry F. Gallestre in black ink.

JERRY F. GALLESTRE

Graduate Student

Noted:

Handwritten signature of Agnes S. Reyes in black ink.

AGNES S. REYES, PhD

Dissertation Adviser

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX I**LETTER TO THE PUBLIC SCHOOLS DISTRICT SUPERVISOR**

April __, 2024

Sir/Madam:

Warm Greetings!

I am a student-researcher of the Graduate School of Philippine Normal University-North Luzon currently conducting my research titled **DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model**. This study aims to evaluate the DepEd Computerization Program (DCP) implementation in the Schools Division of Isabela, DepEd, Philippines towards the development of a technology leadership model to be used by school heads making their schools technologically prepared in addressing the demands of the 21st century education.

In view hereof, may I humbly request permission and approval from your office to float the three (3) sets of my self-made questionnaire to the school heads, ICT coordinators, and teachers having ICT related ancillary task/s in your district. Likewise, may I be permitted to conduct an in-depth interview and focus group discussion to some of the research respondents after retrieval to triangulate the veracity of the data and to establish the reliability of my research instrument.

Attached herewith is the approved letter duly signed by our Schools Division Superintendent for your perusal.

Rest assured that this endeavor will conform to the Data Privacy Act of 2012 (RA 10173), which is intended to protect the integrity and security of personal data of any person involved in this study.

Thank you and may God reciprocate your kindness in a hundredfold.

Very truly yours,

A handwritten signature in black ink, appearing to read "Jerry F. Gallestre".

JERRY F. GALLESTRE

Graduate Student

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX J**LETTER TO THE SCHOOL HEADS**

April __, 2024

Sir/Madam:

Warm Greetings!

I am a student-researcher of the Graduate School of Philippine Normal University-North Luzon currently conducting my research titled *DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model*. This study aims to evaluate the DepEd Computerization Program (DCP) implementation in the Schools Division of Isabela, DepEd, Philippines towards the development of a technology leadership model to be used by school heads making their schools technologically prepared in addressing the demands of the 21st century education.

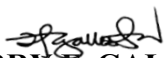
In view hereof, may I humbly request permission and approval from your office to float the three (3) sets of my self-made questionnaire to you as the school head, ICT coordinators, and teachers having ICT related ancillary task/s in your school. Likewise, an in-depth interview and focus group discussion will be conducted after retrieval to gather qualitative insights into respondents' individual experiences, triangulate the veracity of the data, and establish the reliability of my research instrument.

Attached herewith is the approved letter duly signed by our Schools Division Superintendent for your perusal.

Rest assured that this endeavor will conform to the Data Privacy Act of 2012 (RA 10173), which is intended to protect the integrity and security of personal data of any person involved in this study.

Thank you and may God reciprocate your kindness in a hundredfold.

Very truly yours,


JERRY F. GALLESTRE
Graduate Student

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX K**LETTER TO THE SCHOOL HEAD RESPONDENT AND INFORMED CONSENT**

April __, 2024

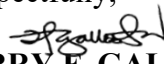
Dear Respondent,

Warm Greetings!

I am a student-researcher of the Graduate School of Philippine Normal University-North Luzon currently conducting my research titled *DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model*. This study aims to evaluate the DepEd Computerization Program (DCP) implementation in the Schools Division of Isabela, DepEd, Philippines towards the development of a technology leadership model to be used by school heads making their schools technologically prepared in addressing the demands of the 21st century education.

In view hereof, may I humbly request your voluntary participation in this academic endeavor by providing the necessary data through my survey questionnaire, and/or in-depth interview. Rest assured that your responses will be treated in accordance with the Data Privacy Act of 2012 (RA 10173), which is intended to protect the integrity and security of personal data of any person involved in this study. Moreover, this endeavor will not put you into any professional risk or criticism that might tarnish your integrity as a school leader.

Respectfully,


JERRY F. GALLESTRE
Researcher

CONSENT LETTER FROM THE SCHOOL HEAD RESPONDENT

Dear Researcher,

I am a respondent of this study who voluntarily participates to: (1) fill-out completely the survey questionnaire, and (2) present myself willingly for an interview before the researcher, for the successful realization of this research.

I expect that the researcher will conform to the professional conduct and Data Privacy Act of 2012 that will surely protect my professional rights and sustain the integrity of my personal data.

I affix my signature/initial below to show my willingness and free-will participation in this study.

Truly yours,

Respondent's initial

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX L**VALIDATED QUESTIONNAIRE FOR SCHOOL HEADS****I. PERSONAL PROFILE**

Directions: Please fill out this form completely and accurately. Put a check mark (✓) in the appropriate box that applies to you.

Name (Optional): _____

Length of Service

- | | | |
|---|--|---------------------------------------|
| ☐ 31 years or higher | ☐ 11 – 20 years | ☐ below 1 year |
| ☐ 21 – 30 years | ☐ 1 – 10 years | (11 months or lower) |

Highest Educational Attainment

- ☐ Doctorate Degree Holder
☐ Master's Degree Holder with Doctorate units
☐ Master's Degree Holder
☐ Bachelor's Degree Holder with Master's units
☐ Bachelor's Degree Holder

Other ICT-related ancillary task/s (*Put a check mark to any task that is assigned to you by your district supervisor as a chair.*)

- ☐ Information and Communication Technology (ICT)
☐ Brigada Eskwela
☐ Oplan Balik Eskwela
☐ Learner Information System (LIS)
☐ Enhanced Basic Education Information System (EBEIS)
☐ Disaster Risk Reduction and Management (DRRM)
☐ School-Based Feeding Program (SBFP)
☐ Pantawid Pamilyang Pilipino Program (4Ps)
☐ Boy Scouts of the Philippines (BSP)/ Girl Scouts of the Philippines (GSP)
☐ Catch-up Friday
☐ Gulayan sa Paaralan
☐ Reading
☐ Journalism
☐ Research
☐ Sports
☐ Others. *Please specify:* _____


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Number of schools handled (*Note: This refers to the maximum number of schools you handled simultaneously within your 5-year residence as a school head based on DepEd rationalization plan.*)

☐ 4 or more schools

☐ 2 schools

☐ 3 schools

☐ 1 school

II. SCHOOL PROFILE (*Note: This pertains to your present school assignment.*)

Size of School (in terms of school personnel)

☐ mega

☐ medium

☐ large

☐ small

Type of School

☐ Stand-Alone Senior High School

☐ Integrated Junior High and Senior High School

☐ Junior High School

☐ Integrated Elementary and Junior High School

☐ Elementary

III. LEVEL OF SUPPORT IN THE DCP IMPLEMENTATION

Directions: Please use a check mark (✓) to rate your level of support as a school head in the DCP implementation by using the scale indicated below:

Rating	Descriptive Interpretation for DCP Initiatives	Descriptive Interpretation for DCP Trainings, DCP Programs, and DCP Utilizations
1	Beginning	Very Low
2	Developing	Low
3	Proficient	High
4	Advanced	Very High

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Component 1: DCP Initiatives

Indicator	Beginning	Developing	Proficient	Advanced
Degree	1	2	3	4
As a school head, ...				
1. in what level of preparation did you make for you to be a recipient of the DCP package?				
2. in what level of assistance did you receive from your alumni to be a recipient of the DCP package?				
3. in what level of assistance did you receive from your School-Parent Teacher Association (SPTA) to be a recipient of DCP package?				
4. in what level of assistance did you receive from your Local Government Unit (LGU) to be a recipient of the DCP package?				
5. in what level of support did you receive from your teachers to be a recipient of the DCP package?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Component 2: DCP Trainings

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
As a school head, ...				
6. in what level does your school implement LAC sessions on DCP?				
7. in what level does your school participate in ICT-related trainings/workshops?				
8. in what level does your school submit DCP/ICT-related training reports?				
9. in what level does your school achieve ICT-contested activities?				
10. in what level does your school train teachers technologically?				

Component 3: DCP Programs

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
As a school head, ...				
11. in what level does your school implement an ICT program?				
12. in what level does your school maintain the DepEd Computerization Program package?				
13. in what level or how much does your school spend for the DCP financial program?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
14. in what level or how frequently does your school join ICT-contested activities such as but not limited to video editing, animation, digital poster making, and the like?				
15. in what level or degree does your school secure a DCP package such as but not limited to hiring of school security guards, DCP laboratory protection, and the like as a DCP security program?				

Component 4: DCP Utilization

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
As a school head, ...				
16. in what level does your school allow teachers to integrate DCP in teaching?				
17. in what level does your school permit the learners to utilize the DCP package in their academic activities?				
18. in what level does your school utilize the DCP package in establishing and communicating partnership?				
19. in what level does your school use DCP in submitting school reports and presenting school activities or achievements?				


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
20. in what level does your school utilize DCP in the conduct of Monitoring and Evaluation (M&E)?				

IV. TECHNOLOGY LEADERSHIP MANIFESTATIONS AND LEVELS

Directions: Statements below are the manifestations and levels of school heads towards technology leadership. Please read each one carefully and rate **yourself** as a school head using the indicated scale:

Rating		Descriptive Interpretation
1	-	Not at all
2	-	Somewhat
3	-	Moderately
4	-	Fully

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
As a school head, ...				
1. to what extent did you engage your school's stakeholders in developing and adopting a shared vision for using technology to improve student success through technological practices of teachers?				
2. to what extent did you communicate information about district or school's technology planning and implementation efforts to school stakeholders?				
3. to what extent did you advocate for inclusion of research-based technology practices in the school improvement plan?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
4. to what extent did you align district or school technology plans with other plans, including district strategic plans, school improvement plans, technical assistance plans, or other instructional plans?				
5. to what extent did you engage in activities to identify best practices in the use of technology?				
6. to what extent did you lead in building the shared vision of your school to your stakeholders by collaboratively creating a strategic plan that articulated how technology would be used to enhance teaching and learning?				
7. to what extent did you encourage the development and growth of effective approaches for integrating technology to teaching?				
8. to what extent did you promote participation of school stakeholders in the school's technology planning process?				
9. to what extent did you provide or make available assistance to teachers to use technology for interpreting and analyzing data?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
10. to what extent did you disseminate best technological practices in learning and teaching with faculty and staff?				
11. to what extent did you provide support to teachers or staff when attempting to share information about technology practices, issues, and concerns?				
12. to what extent did you organize or conduct needs assessment of staff related to professional development on the use of technology?				
13. to what extent did you facilitate or ensure the delivery of professional development on the use of technology to faculty and staff?				
14. to what extent did you provide or make available assistance to teachers for using student-assessment's data to facilitate instruction?				
15. to what extent did you enforce technology in teaching-learning to achieve quality education?				
16. to what extent did you integrate technology in monitoring and assessing teaching-learning in your school?				
17. to what extent did you participate in professional development activities meant to improve or expand the use of technology?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
18. to what extent did you use technology to help complete day-to-day tasks?				
19. to what extent did you use technology-based management systems to access staff/faculty personnel records?				
20. to what extent did you use technology-based management systems to access student records?				
21. to what extent did you encourage and use technology as a means of communicating with education stakeholders, including peers, experts, students, parents/guardians, and the community?				
22. to what extent did you use technology in the Income Generating Project (IGP) for the productivity of your school?				
23. to what extent did you support technology for the professional practice of your teachers in the school and in the community?				
24. to what extent did you integrate technology for the productivity of your parents and other stakeholders?				
25. to what extent did you support faculty and staff in connecting to and using district- and school-level technology systems for management and operations?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
26. to what extent did you allocate campus discretionary funds to help meet the needs of the school's technology needs?				
27. to what extent did you ensure that hardware and software replacements/upgrades were incorporated into school technology plans?				
28. to what extent did you advocate at the district level for adequate, timely, and high-quality technology support services?				
29. to what extent did you pursue supplemental funding to help meet the technology needs of the school?				
30. to what extent did you use technology as a means of support to your teachers and staff?				
31. to what extent did you utilize technology in managing your school?				
32. to what extent did you use technology in the operation of your school?				
33. to what extent did you promote or model technology-based systems to collect student assessment data?				
34. to what extent did you promote the evaluation of instructional practices, including technology-based practices, to assess their effectiveness?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
35. to what extent did you assess and evaluate the existing technology-based administrative and operations systems for modifications or upgrade?				
36. to what extent did you evaluate the effectiveness of professional development offerings in your school to meet the needs of teachers and their use of technology?				
37. to what extent did you include the effective use of technology as a criterion for assessing the performance of faculty?				
38. to what extent did you use technology as a primary means of assessment and evaluation of your school?				
39. to what extent did you support technology in assessing and evaluating your school personnel's performance?				
40. to what extent did you promote assessment and evaluation to your teachers and parents through the use of technology?				



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

V. DCP CHALLENGES

Directions: Please put a check mark (✓) on the blank if you encountered it as a challenge or hindrance in the DCP implementation.

- _____ (1) Lack of ICT/DCP related trainings.
- _____ (2) Lack of technical skills in using technological gadgets.
- _____ (3) Lack of interest in the DCP program.
- _____ (4) Lack of technical assistance from ICT experts.
- _____ (5) No electricity in the school.
- _____ (6) No scheduled time for using DCP gadgets.
- _____ (7) No plans for the implementation of DCP.
- _____ (8) No sustainability in the DCP implementation.
- _____ (9) No school guard for the DCP package/classroom security.
- _____ (10) No skilled teacher/s for mentoring and coaching of technological skills.
- _____ (11) No specific ICT coordinator/s in the school.
- _____ (12) No allotted funds for DCP package replacement/maintenance.
- _____ (13) No ICT/DCP LAC sessions conducted in the school.
- _____ (14) Unstable internet connectivity.
- _____ (15) Unusable delivered DCP package.
- _____ (16) Multiple ancillary functions of teachers.
- _____ (17) Low level of ICT/DCP support from school alumni.
- _____ (18) Low level of ICT/DCP support from Local Government Unit (LGU) and barangay officials.
- _____ (19) Low level of ICT/DCP support from School-Parent Teacher Association (SPTA).
- _____ (20) Low ratio of computers to learners.
- _____ (21) Low awareness of school stakeholders about the essence of DCP.
- _____ (22) Presence of DCP resistance among school personnel and stakeholders.
- _____ (23) Poor DCP classroom or ICT laboratory.
- _____ (24) Low-end/poor DCP computers/laptop/tablet.
- _____ (25) Only the ICT Coordinator and the school head are knowledgeable about the DCP program.
- _____ (26) Others. *Please specify:* _____

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX M**IN-DEPTH INTERVIEW QUESTIONS FOR SCHOOL HEADS**

11. What comes to your mind by the term DCP? What made you think so?
12. Do you believe that DCP improves school performance? In what school key indicator (Leading Strategically, Managing School Operations and Resources, Focusing on Teaching and Learning, Developing Self and Others, and Building Connections) does it improve the most?
13. How does DCP improve your school significantly?
14. Does DCP transform you as a technology leader? How do you show it?
15. Do you think that DCP has improved the quality of teaching of your teachers? What is the most distinguished feature of that change?
16. If you were a member of the top management planning team, how would you plan the DCP implementation?
17. What is the most crucial problem you experienced as school head because of the existence of DCP in your school? How did you address it?
18. Do your stakeholders support DCP? If yes, in what way do they give support? If not, what made them non-supporters of DCP? Do they have issues on DCP?
19. If your school was not selected as DCP recipient, do you still initiate to have ICT gadgets? What will be your primordial step?
20. Do you think DCP has achieved its goal? If yes, which one is the most successful? If not, which part of the implementation went wrong?

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX N**LETTER TO THE ICT COORDINATOR RESPONDENT AND INFORMED
CONSENT**

April __, 2024

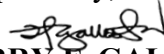
Dear Respondent,

Warm Greetings!

I am a student-researcher of the Graduate School of Philippine Normal University-North Luzon currently conducting my research titled *DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model*. This study aims to evaluate the DepEd Computerization Program (DCP) implementation in the Schools Division of Isabela, DepEd, Philippines towards the development of a technology leadership model to be used by school heads making their schools technologically prepared in addressing the demands of the 21st century education.

In view hereof, may I humbly request your voluntary participation in this academic endeavor by providing the necessary data through my survey questionnaire, and/or in-depth interview. Rest assured that your responses will be treated in accordance with the Data Privacy Act of 2012 (RA 10173), which is intended to protect the integrity and security of personal data of any person involved in this study. Moreover, this endeavor will not put you into any professional risk or criticism that might tarnish your integrity as an ICT coordinator.

Respectfully,


JERRY F. GALLESTRE
Researcher

CONSENT LETTER FROM THE ICT COORDINATOR RESPONDENT

Dear Researcher,

I am a respondent of this study who voluntarily participates to: (1) fill-out completely the survey questionnaire, and (2) present myself willingly for an interview before the researcher, for the successful realization of this research.

I expect that the researcher will conform to the professional conduct and Data Privacy Act of 2012 that will surely protect my professional rights and sustain the integrity of my personal data.

I affix my signature/initial below to show my willingness and free-will participation in this study.

Truly yours,

Respondent's initial

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX O**VALIDATED QUESTIONNAIRE FOR ICT COORDINATORS****I. PERSONAL PROFILE**

Directions: Please fill out this form completely and accurately. Check (✓) the appropriate box that applies to you.

Name (Optional): _____		
Length of Service		
☐ 31 years or higher	☐ 11 – 20 years	☐ below 1 year
☐ 21 – 30 years	☐ 1 – 10 years	(11 months or lower)
Highest Educational Attainment		
☐ Doctorate Degree Holder ☐ Master's Degree Holder with Doctorate units ☐ Master's Degree Holder ☐ Bachelor's Degree Holder with Master's units ☐ Bachelor's Degree Holder		
Other ICT-related ancillary task/s (Put a check mark to any task that is assigned to you by your school head as a chair.)		
☐ Information and Communication Technology (ICT) ☐ Brigada Eskwela ☐ Oplan Balik Eskwela ☐ Learner Information System (LIS) ☐ Enhanced Basic Education Information System (EBEIS) ☐ Disaster Risk Reduction and Management (DRRM) ☐ School-Based Feeding Program (SBFP) ☐ Pantawid Pamilyang Pilipino Program (4Ps) ☐ Boy Scouts of the Philippines (BSP)/ Girl Scouts of the Philippines (GSP) ☐ Catch-up Friday ☐ Gulayan sa Paaralan ☐ Reading ☐ Journalism ☐ Research ☐ Sports ☐ Others. Please specify: _____		

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

II. DCP PROFILE (Please provide the necessary data by putting a check mark (✓) in the box that describes your school as a DCP recipient.)

Number of computer to student-ratio in an ICT class
☐ 1 computer is to 1 learner ☐ 1 computer is to 2 learners ☐ 1 computer is to 3 or more learners
Number of ICT personnel
☐ 1 ICT teacher is to 1 grade level ☐ 1 ICT teacher is to 2 grade levels ☐ 1 ICT teacher is to 3 or more grade levels
Number of Computer Laboratory or e-classroom
☐ 1 lab is to 1 grade level ☐ 1 lab is to 2 grade levels ☐ 1 lab is to 3 or more grade levels
Number of Serviceable Computers
☐ 1 computer for every 10 computers ☐ 2 computers for every 10 computers ☐ 3 or more computers for every 10 computers
Number of Non-serviceable Computers (for condemnation)
☐ 1 computer for every 10 computers ☐ 2 computers for every 10 computers ☐ 3 or more computers for every 10 computers
Size of Computer Laboratory or e-classroom
☐ Sub-standard (smaller by 7m x 18 m) ☐ Standard (7m x 18m) ☐ Oversize (larger than 7m x 18m)
Maintenance Budget
☐ quarterly ☐ semestral ☐ annually


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

III. LEVEL OF SUPPORT IN THE DCP IMPLEMENTATION

Directions: Please rate your school head's level of support in the DCP implementation by using the scale indicated below:

Rating	Descriptive Interpretation for DCP Initiatives	Descriptive Interpretation for DCP Trainings, DCP Programs, and DCP Utilizations
1	Beginning	Very Low
2	Developing	Low
3	Proficient	High
4	Advanced	Very High

Component 1: DCP Initiatives

Indicator	Beginning	Developing	Proficient	Advanced
Degree	1	2	3	4
As an ICT Coordinator, ...				
1. in what level of preparation did your school head make to be a recipient of the DCP package?				
2. in what level of assistance did your school head get from your alumni to be a recipient of the DCP package?				
3. in what level of assistance did your school head get from your School-Parent Teacher Association (SPTA) to be a recipient of the DCP package?				
4. in what level of assistance did your school head get from your Local Government Unit (LGU) to be a recipient of the DCP package?				
5. in what level of support did your school head get from the teachers to be a recipient of the DCP package?				


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Component 2: DCP Trainings

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
As an ICT Coordinator, ...				
6. in what level does your school implement LAC sessions on DCP?				
7. in what level does your school participate in ICT-related trainings/workshops?				
8. in what level does your school submit DCP/ICT-related training reports?				
9. in what level does your school achieve ICT-contested activities?				
10. in what level does your school train teachers technologically?				

Component 3: DCP Programs

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
As an ICT Coordinator, ...				
11. in what level does your school implement an ICT program?				
12. in what level does your school maintain the DepEd Computerization Program package?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
13. in what level or how much does your school spend for the DCP financial program?				
14. in what level or how frequently does your school join ICT-contested activities such as but not limited to video editing, animation, digital poster making, and the like?				
15. in what level or degree does your school secure a DCP package such as but not limited to hiring of school security guards, DCP laboratory protection, and the like as a DCP security program?				

Component 4: DCP Utilization

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
As an ICT Coordinator, ...				
16. in what level does your school allow teachers to integrate DCP in teaching?				
17. in what level does your school permit the learners to utilize the DCP package in their academic activities?				
18. in what level does your school utilize the DCP package in establishing and communicating partnership?				


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
19. in what level does your school use DCP in submitting school reports and presenting school activities or achievements?				
20. in what level does your school utilize DCP in the conduct of Monitoring and Evaluation (M&E)?				

IV. TECHNOLOGY LEADERSHIP MANIFESTATIONS AND LEVELS

Directions: Statements below are the manifestations and levels of technology leadership. As a school ICT coordinator, kindly rate **your school head** on his/her manifestation of technology leadership using the indicated scale:

Rating		Descriptive Interpretation
1	-	Not at all
2	-	Somewhat
3	-	Moderately
4	-	Fully

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
As an ICT Coordinator, ...				
1. to what extent did your school head engage your school's stakeholders in developing and adopting a shared vision for using technology to improve student success through technological practices of teachers?				
2. to what extent did your school head communicate information about district or school's technology planning and implementation efforts to school stakeholders?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
3. to what extent did your school head advocate for inclusion of research-based technology practices in the school improvement plan?				
4. to what extent did your school head align district or school technology plans with other plans, including district strategic plans, school improvement plans, technical assistance plans, or other instructional plans?				
5. to what extent did your school head engage in activities to identify best practices in the use of technology?				
6. to what extent did your school head lead in building the shared vision of your school to your stakeholders by collaboratively creating a strategic plan that articulated how technology would be used to enhance teaching and learning?				
7. to what extent did your school head encourage the development and growth of effective approaches for integrating technology to teaching?				
8. to what extent did your school head promote participation of school stakeholders in the school's technology planning process?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
9. to what extent did your school head provide or make available assistance to teachers to use technology for interpreting and analyzing data?				
10. to what extent did your school head disseminate best technological practices in learning and teaching with faculty and staff?				
11. to what extent did your school head provide support to teachers or staff when attempting to share information about technology practices, issues, and concerns?				
12. to what extent did your school head organize or conduct needs assessment of staff related to professional development on the use of technology?				
13. to what extent did your school head facilitate or ensure the delivery of professional development on the use of technology to faculty and staff?				
14. to what extent did your school head provide or make available assistance to teachers for using student-assessment's data to facilitate instruction?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
15. to what extent did your school head enforce technology in teaching-learning to achieve quality education?				
16. to what extent did your school head integrate technology in monitoring and assessing teaching-learning in your school?				
17. to what extent did your school head participate in professional development activities meant to improve or expand the use of technology?				
18. to what extent did your school head use technology to help complete day-to-day tasks?				
19. to what extent did your school head use technology-based management systems to access staff/faculty personnel records?				
20. to what extent did your school head use technology-based management systems to access student records?				
21. to what extent did your school head encourage and use technology as a means of communicating with education stakeholders, including peers, experts, students, parents/guardians, and the community?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
22. to what extent did your school head use technology in the Income Generating Project (IGP) for the productivity of your school?				
23. to what extent did your school head support technology for the professional practice of teachers in the school and in the community?				
24. to what extent did your school head integrate technology for the productivity of parents and other stakeholders?				
25. to what extent did your school head support faculty and staff in connecting to and using district- and school-level technology systems for management and operations?				
26. to what extent did your school head allocate campus discretionary funds to help meet the needs of the school's technology needs?				
27. to what extent did your school head ensure that hardware and software replacements/upgrades were incorporated into school technology plans?				
28. to what extent did your school head advocate at the district level for adequate, timely, and high-quality technology support services?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
29. to what extent did your school head pursue supplemental funding to help meet the technology needs of the school?				
30. to what extent did your school head use technology as a means of support to teachers and staff?				
31. to what extent did your school head utilize technology in managing your school?				
32. to what extent did your school head use technology in the operation of your school?				
33. to what extent did your school head promote or model technology-based systems to collect student assessment data?				
34. to what extent did your school head promote the evaluation of instructional practices, including technology-based practices, to assess their effectiveness?				
35. to what extent did your school head assess and evaluate the existing technology-based administrative and operations systems for modifications or upgrade?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
36. to what extent did your school head evaluate the effectiveness of professional development offerings in your school to meet the needs of teachers and their use of technology?				
37. to what extent did your school head include the effective use of technology as a criterion for assessing the performance of faculty?				
38. to what extent did your school head use technology as a primary means of assessment and evaluation of your school?				
39. to what extent did your school head support technology in assessing and evaluating school personnel's performance?				
40. to what extent did your school head promote assessment and evaluation to teachers and parents through the use of technology?				



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

V. DCP CHALLENGES

Directions: Please put a check mark (✓) on the blank if you encountered it as a challenge or hindrance in the DCP implementation.

- _____ (1) Lack of ICT/DCP related trainings.
- _____ (2) Lack of technical skills in using technological gadgets.
- _____ (3) Lack of interest in the DCP program.
- _____ (4) Lack of technical assistance from ICT experts.
- _____ (5) No electricity in the school.
- _____ (6) No scheduled time for using DCP gadgets.
- _____ (7) No plans for the implementation of DCP.
- _____ (8) No sustainability in the DCP implementation.
- _____ (9) No school guard for the DCP package/classroom security.
- _____ (10) No skilled teacher/s for mentoring and coaching of technological skills.
- _____ (11) No specific ICT coordinator/s in the school.
- _____ (12) No allotted funds for DCP package replacement/maintenance.
- _____ (13) No ICT/DCP LAC sessions conducted in the school.
- _____ (14) Unstable internet connectivity.
- _____ (15) Unusable delivered DCP package.
- _____ (16) Multiple ancillary functions of teachers.
- _____ (17) Low level of ICT/DCP support from school alumni.
- _____ (18) Low level of ICT/DCP support from Local Government Unit (LGU) and barangay officials.
- _____ (19) Low level of ICT/DCP support from School-Parent Teacher Association (SPTA).
- _____ (20) Low ratio of computers to learners.
- _____ (21) Low awareness of school stakeholders about the essence of DCP.
- _____ (22) Presence of DCP resistance among school personnel and stakeholders.
- _____ (23) Poor DCP classroom or ICT laboratory.
- _____ (24) Low-end/poor DCP computers/laptop/tablet.
- _____ (25) Only the ICT Coordinator and the school head are knowledgeable about the DCP program.
- _____ (26) Others. *Please specify:* _____

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX P**IN-DEPTH INTERVIEW QUESTIONS FOR ICT COORDINATORS**

1. What comes to your mind by the term DCP? What made you think so?
2. Do you believe that DCP improves your coordinatorship skill or competence? In what competence indicator (Department Manager, School Information Disseminator, Administration Support) improves the most?
3. How does DCP change your school significantly? Does the change affect you as an ICT coordinator?
4. Does DCP transform you as an ICT coordinator? How do you show it?
5. Do you think that DCP has changed your coordinatorship skill or competence? What is the most distinguished feature of that change?
6. If you were a member of the school management planning team, how would you plan the utilization of the DCP package?
7. What is the most crucial problem you experienced as an ICT coordinator because of the existence of DCP in your school? How did you address it?
8. Do your stakeholders such as School Parents' Association support DCP? If yes, in what way do they give support? If not, what made them non-supporters of DCP? Do they have issues on DCP?
9. If your school was not selected as DCP recipient, do you still initiate to have ICT gadgets in your school? What will be your primordial step?
10. Do you think DCP has achieved its goal? If yes, which one is the most successful? If not, which part of the implementation went wrong?

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX Q**LETTER TO THE TEACHER RESPONDENT AND INFORMED CONSENT**

April __, 2024

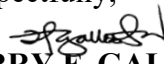
Dear Respondent,

Warm Greetings!

I am a student-researcher of the Graduate School of Philippine Normal University-North Luzon currently conducting my research titled *DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model*. This study aims to evaluate the DepEd Computerization Program (DCP) implementation in the Schools Division of Isabela, DepEd, Philippines towards the development of a technology leadership model to be used by school heads making their schools technologically prepared in addressing the demands of the 21st century education.

In view hereof, may I humbly request your voluntary participation in this academic endeavor by providing the necessary data through my survey questionnaire, in-depth interview, and/or focus group discussion. Rest assured that your responses will be treated in accordance with the Data Privacy Act of 2012 (RA 10173), which is intended to protect the integrity and security of personal data of any person involved in this study. Moreover, this endeavor will not put you into any professional risk or criticism that might tarnish your integrity as a teacher.

Respectfully,


JERRY F. GALLESTRE

Researcher

CONSENT LETTER FROM THE TEACHER RESPONDENT

Dear Researcher,

I am a respondent of this study who voluntarily participates to: (1) fill-out completely the survey questionnaire, and (2) present myself willingly for an interview, and/or focus group discussion before the researcher, for the successful realization of this research.

I expect that the researcher will conform to the professional conduct and Data Privacy Act of 2012 that will surely protect my professional rights and sustain the integrity of my personal data.

I affix my signature/initial below to show my willingness and free-will participation in this study.

Truly yours,

Respondent's initial

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX R**VALIDATED QUESTIONNAIRE FOR TEACHERS****I. PERSONAL PROFILE**

Directions: Please fill out this form completely and accurately. Check (✓) the appropriate box that applies to you.

Name (Optional): _____

Length of Service

- | | | |
|---|--|---------------------------------------|
| ☐ 31 years or higher | ☐ 11 – 20 years | ☐ below 1 year |
| ☐ 21 – 30 years | ☐ 1 – 10 years | (11 months or below) |

Highest Educational Attainment

- ☐ Doctorate Degree Holder
- ☐ Master's Degree Holder with Doctorate units
- ☐ Master's Degree Holder
- ☐ Bachelor's Degree Holder with Master's units
- ☐ Bachelor's Degree Holder

Other ICT-related ancillary task/s (*Put a check mark to any task that is assigned to you by your school head as a chair.*)

- ☐ Information and Communication Technology (ICT)
- ☐ Brigada Eskwela
- ☐ Oplan Balik Eskwela
- ☐ Learner Information System (LIS)
- ☐ Enhanced Basic Education Information System (EBEIS)
- ☐ Disaster Risk Reduction and Management (DRRM)
- ☐ School-Based Feeding Program (SBFP)
- ☐ Pantawid Pamilyang Pilipino Program (4Ps)
- ☐ Boy Scouts of the Philippines (BSP)/ Girl Scouts of the Philippines (GSP)
- ☐ Catch-up Friday
- ☐ Gulayan sa Paaralan
- ☐ Reading
- ☐ Journalism
- ☐ Research
- ☐ Sports
- ☐ Others. *Please specify:* _____


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

II. LEVEL OF SUPPORT IN THE DCP IMPLEMENTATION

Directions: Please rate your school head's level of support in the DCP implementation by using the scale indicated below:

Rating	Descriptive Interpretation for DCP Initiatives	Descriptive Interpretation for DCP Trainings, DCP Programs, and DCP Utilizations
1	Beginning	Very Low
2	Developing	Low
3	Proficient	High
4	Advanced	Very High

Component 1: DCP Initiatives

Indicator	Beginning	Developing	Proficient	Advanced
Degree	1	2	3	4
As a teacher, ...				
1. in what level of preparation did your school head make to be a recipient of the DCP package?				
2. in what level of assistance did your school head get from your alumni to be a recipient of the DCP package?				
3. in what level of assistance did your school head get from your School-Parent Teacher Association (SPTA) to be a recipient of the DCP package?				
4. in what level of assistance did your school head get from your Local Government Unit (LGU) to be a recipient of the DCP package?				
5. in what level of support did your school head get from the teachers to be a recipient of the DCP package?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Component 2: DCP Trainings

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
As a teacher, ...				
6. in what level does your school implement LAC sessions on DCP?				
7. in what level does your school participate in ICT-related trainings/workshops?				
8. in what level does your school submit DCP/ICT-related training reports?				
9. in what level does your school achieve ICT-contested activities?				
10. in what level does your school train teachers technologically?				

Component 3: DCP Programs

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
As a teacher, ...				
11. in what level does your school implement an ICT program?				
12. in what level does your school maintain the DepEd Computerization Program package?				
13. in what level or how much does your school spend for the DCP financial program?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
14. in what level or how frequently does your school join ICT-contested activities such as but not limited to video editing, animation, digital poster making, and the like?				
15. in what level or degree does your school secure a DCP package such as but not limited to hiring of school security guards, DCP laboratory protection, and the like as a DCP security program?				

Component 4: DCP Utilization

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
As a teacher, ...				
16. in what level does your school allow teachers to integrate DCP in teaching?				
17. in what level does your school permit the learners to utilize the DCP package in their academic activities?				
18. in what level does your school utilize the DCP package in establishing and communicating partnership?				
19. in what level does your school use DCP in submitting school reports and presenting school activities or achievements?				


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

Indicator	Very Low	Low	High	Very High
Degree	1	2	3	4
20. in what level does your school utilize DCP in the conduct of Monitoring and Evaluation (M&E)?				

III. TECHNOLOGY LEADERSHIP MANIFESTATIONS AND LEVELS

Directions: Statements below are manifestations and levels of technology leadership. As a faculty, kindly rate **your school head** on his/her manifestation of technology leadership using the indicated scale:

Rating		Descriptive Interpretation
1	-	Not at all
2	-	Somewhat
3	-	Moderately
4	-	Fully

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
As a teacher, ...				
1. to what extent did your school head engage your school's stakeholders in developing and adopting a shared vision for using technology to improve student success through technological practices of teachers?				
2. to what extent did your school head communicate information about district or school's technology planning and implementation efforts to school stakeholders?				
3. to what extent did your school head advocate for inclusion of research-based technology practices in the school improvement plan?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
4. to what extent did your school head align district or school technology plans with other plans, including district strategic plans, school improvement plans, technical assistance plans, or other instructional plans?				
5. to what extent did your school head engage in activities to identify best practices in the use of technology?				
6. to what extent did your school head lead in building the shared vision of your school to your stakeholders by collaboratively creating a strategic plan that articulated how technology would be used to enhance teaching and learning?				
7. to what extent did your school head encourage the development and growth of effective approaches for integrating technology to teaching?				
8. to what extent did your school head promote participation of school stakeholders in the school's technology planning process?				
9. to what extent did your school head provide or make available assistance to teachers to use technology for interpreting and analyzing data?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
10. to what extent did your school head disseminate best technological practices in learning and teaching with faculty and staff?				
11. to what extent did your school head provide support to teachers or staff when attempting to share information about technology practices, issues, and concerns?				
12. to what extent did your school head organize or conduct needs assessment of staff related to professional development on the use of technology?				
13. to what extent did your school head facilitate or ensure the delivery of professional development on the use of technology to faculty and staff?				
14. to what extent did your school head provide or make available assistance to teachers for using student-assessment's data to facilitate instruction?				
15. to what extent did your school head enforce technology in teaching-learning to achieve quality education?				
16. to what extent did your school head integrate technology in monitoring and assessing teaching-learning in your school?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
17. to what extent did your school head participate in professional development activities meant to improve or expand the use of technology?				
18. to what extent did your school head use technology to help complete day-to-day tasks?				
19. to what extent did your school head use technology-based management systems to access staff/faculty personnel records?				
20. to what extent did your school head use technology-based management systems to access student records?				
21. to what extent did your school head encourage and use technology as a means of communicating with education stakeholders, including peers, experts, students, parents/guardians, and the community?				
22. to what extent did your school head use technology in the Income Generating Project (IGP) for the productivity of your school?				
23. to what extent did your school head support technology for the professional practice of teachers in the school and in the community?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
24. to what extent did your school head integrate technology for the productivity of parents and other stakeholders?				
25. to what extent did your school head support faculty and staff in connecting to and using district- and school-level technology systems for management and operations?				
26. to what extent did your school head allocate campus discretionary funds to help meet the needs of the school's technology needs?				
27. to what extent did your school head ensure that hardware and software replacements/upgrades were incorporated into school technology plans?				
28. to what extent did your school head advocate at the district level for adequate, timely, and high-quality technology support services?				
29. to what extent did your school head pursue supplemental funding to help meet the technology needs of the school?				
30. to what extent did your school head use technology as a means of support to teachers and staff?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
31. to what extent did your school head utilize technology in managing your school?				
32. to what extent did your school head use technology in the operation of your school?				
33. to what extent did your school head promote or model technology-based systems to collect student assessment data?				
34. to what extent did your school head promote the evaluation of instructional practices, including technology-based practices, to assess their effectiveness?				
35. to what extent did your school head assess and evaluate the existing technology-based administrative and operations systems for modifications or upgrade?				
36. to what extent did your school head evaluate the effectiveness of professional development offerings in your school to meet the needs of teachers and their use of technology?				
37. to what extent did your school head include the effective use of technology as a criterion for assessing the performance of faculty?				

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Technology Leadership Indicator	Not at all	Somewhat	Moderately	Fully
Degree	1	2	3	4
38. to what extent did your school head use technology as a primary means of assessment and evaluation of your school?				
39. to what extent did your school head support technology in assessing and evaluating school personnel's performance?				
40. to what extent did your school head promote assessment and evaluation to teachers and parents through the use of technology?				



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

IV. DCP CHALLENGES

Directions: Please put a check mark (✓) on the blank if you encountered it as a challenge or hindrance in the DCP implementation.

- _____ (1) Lack of ICT/DCP related trainings.
- _____ (2) Lack of technical skills in using technological gadgets.
- _____ (3) Lack of interest in the DCP program.
- _____ (4) Lack of technical assistance from ICT experts.
- _____ (5) No electricity in the school.
- _____ (6) No scheduled time for using DCP gadgets.
- _____ (7) No plans for the implementation of DCP.
- _____ (8) No sustainability in the DCP implementation.
- _____ (9) No school guard for the DCP package/classroom security.
- _____ (10) No skilled teacher/s for mentoring and coaching of technological skills.
- _____ (11) No specific ICT coordinator/s in the school.
- _____ (12) No allotted funds for DCP package replacement/maintenance.
- _____ (13) No ICT/DCP LAC sessions conducted in the school.
- _____ (14) Unstable internet connectivity.
- _____ (15) Unusable delivered DCP package.
- _____ (16) Multiple ancillary functions of teachers.
- _____ (17) Low level of ICT/DCP support from school alumni.
- _____ (18) Low level of ICT/DCP support from Local Government Unit (LGU) and barangay officials.
- _____ (19) Low level of ICT/DCP support from School-Parent Teacher Association (SPTA).
- _____ (20) Low ratio of computers to learners.
- _____ (21) Low awareness of school stakeholders about the essence of DCP.
- _____ (22) Presence of DCP resistance among school personnel and stakeholders.
- _____ (23) Poor DCP classroom or ICT laboratory.
- _____ (24) Low-end/poor DCP computers/laptop/tablet.
- _____ (25) Only the ICT Coordinator and the school head are knowledgeable about the DCP program.
- _____ (26) Others. *Please specify:* _____

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX S**IN-DEPTH INTERVIEW QUESTIONS FOR TEACHERS**

1. What comes to your mind by the term DCP? What made you think so?
2. Do you believe that DCP improves you as a teacher? In what teaching performance indicator (Content Knowledge and Pedagogy, Learning Environment and Diversity of Learners, Curriculum and Planning, Assessment and Reporting, Personal Growth and Professional Development) improves the most?
3. How does DCP improve your school significantly? Does the change affect you as a teacher?
4. Does DCP transform you as a technology teacher? How do you show it?
5. Do you think that DCP has improved your quality of teaching? What is the most distinguished feature of that change?
6. If you were a member of the school management planning team, how would you plan the utilization of the DCP package?
7. What is the most crucial problem you experienced as a teacher because of the existence of DCP in your school? How did you manage it?
8. Do your stakeholders such as Homeroom Parents support DCP? If yes, in what way do they give support? If not, what made them non-supporters of DCP? Do they have issues on DCP?
9. If your school was not selected as DCP recipient, do you still initiate to have ICT gadgets in your class? What will be your primordial step?
10. Do you think DCP has achieved its goal? If yes, which one is the most successful? If not, which part of the implementation went wrong?

**APPENDIX T****FOCUS GROUP DISCUSSION (FGD) QUESTIONS FOR TEACHERS**

17. What do you know about DCP?
18. Have you seen or felt the preparations made by your school head to acquire DCP package?
19. Is DCP a part of your instruction? How do you integrate it?
20. Do you have trainings on DCP? How frequently do you attend such trainings?
21. What are the benefits of DCP in you as a teacher aside from its importance in your daily teaching?
22. Does your school have stable internet connectivity? Do you access it for free?
23. Does your school ask for DCP financial support from your stakeholders? How often?
24. Does your school head implement DCP LAC sessions? How often do you attend?
25. Does your school advocate DCP? In what sense is it shown/evident?
26. Does your school provide School Improvement Plan (SIP) Research-Based Data? How is DCP related to it?
27. Does DCP boost your morale as a teacher? What evidence do you have?
28. Do you use DCP in your assessment? In what way?
29. Which is better: DCP or your personal ICT gadget? Why?
30. Do you use DCP as your school data bank for your Human Resource Information System (HRIS)? How accessible is it?
31. What aspects of DCP (package, program, implementation) do you believe need improvement to meet the school needs? How will you do it?
32. Is DCP maintenance and utilization one of the priorities of your school? How can you say so?

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX U**LOCAL EXECUTIVE ORDER NO. 13****(AN ORDER SUSPENDING FACE-TO-FACE CLASSES IN ECHAGUE, ISABELA)**REPUBLIC OF THE PHILIPPINES
PROVINCE OF ISABELA
MUNICIPALITY OF ECHAGUE

BAGONG PILIPINAS

*Office of the Municipal Mayor***EXECUTIVE ORDER NO. 13**

Series of 2024

**AN ORDER SUSPENDING FACE-TO-FACE CLASSES IN ALL LEVELS IN PUBLIC AND
PRIVATE SCHOOLS, COLLEGES, AND UNIVERSITIES IN THE MUNICIPALITY OF
ECHAGUE, ISABELA ON
APRIL 8, 2024 DUE TO HIGH HEAT INDEX**

WHEREAS, the Municipality of Echague has been experiencing extreme heat as the summer sets;

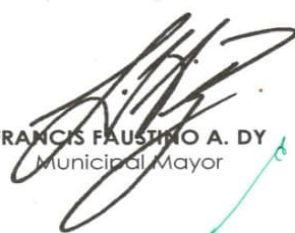
WHEREAS, the General Welfare Clause of the Local Government Code of 1991 authorizes every Local Government Unit to enact such measures that will enhance the public health, safety, convenience, maintain peace and order and promote the general prosperity of its inhabitants;

WHEREAS, with the hazardous impact of the said, the Local Government Unit of Echague is determined to ensure the safety and well-being of all learners and personnel of educational institutions;

NOW, THEREFORE, I, FRANCIS FAUSTINO A. DY, the Local Chief Executive of the Municipality of Echague, by virtue of the powers vested in me by law, do hereby order the suspension of classes in all levels in public and private schools in the Municipality of Echague on April 8, 2024 to ensure public safety of our constituents

This Executive Order shall take effect immediately.

Issued this 8th day of April, 2024 in the Municipality of Echague, Isabela.


FRANCIS FAUSTINO A. DY
Municipal Mayor



PHILIPPINE NORMAL UNIVERSITY
The National Center for Teacher Education

APPENDIX V

LOCAL EXECUTIVE ORDER NO. 16 (AN ORDER SUSPENDING FACE-TO-FACE CLASSES IN ECHAGUE, ISABELA)



REPUBLIC OF THE PHILIPPINES
PROVINCE OF ISABELA
MUNICIPALITY OF ECHAGUE

Office of the Municipal Mayor

EXECUTIVE ORDER NO. 16 Series of 2024

AN ORDER SUSPENDING FACE-TO-FACE CLASSES FROM PRE-SCHOOL TO SENIOR HIGH SCHOOL IN PUBLIC AND PRIVATE SCHOOLS IN THE MUNICIPALITY OF ECHAGUE, ISABELA ON APRIL 22-26, 2024 DUE TO HIGH HEAT INDEX

WHEREAS, the Municipality of Echague has been experiencing extreme heat as the summer sets;

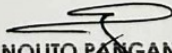
WHEREAS, the General Welfare Clause of the Local Government Code of 1991 authorizes every Local Government Unit to enact such measures that will enhance the public health, safety, convenience, maintain peace and order and promote the general prosperity of its inhabitants;

WHEREAS, with the hazardous impact of the said, the Local Government Unit of Echague is determined to ensure the safety and well-being of all learners and personnel of educational institutions;

NOW, THEREFORE, I, FRANCIS FAUSTINO A. DY, the Local Chief Executive of the Municipality of Echague, by virtue of the powers vested in me by law, do hereby order the suspension of classes from Pre-school to Senior High School in public and private schools in the Municipality of Echague on April 22 -26, 2024 to ensure public safety of our constituents

This Executive Order shall take effect immediately.

Issued this 22nd day of April, 2024 in the Municipality of Echague, Isabela.


NOLITO PANGANIBAN
SB Member/ Officer-in-Charge



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX W

LOCAL EXECUTIVE ORDER NO. 17

(AN ORDER SUSPENDING FACE-TO-FACE CLASSES IN ECHAGUE, ISABELA)



REPUBLIC OF THE PHILIPPINES
PROVINCE OF ISABELA
MUNICIPALITY OF ECHAGUE

BAGONG PILIPINAS

Office of the Municipal Mayor

EXECUTIVE ORDER NO. 17

Series of 2024

**AN ORDER SUSPENDING FACE-TO-FACE CLASSES IN PRE-SCHOOL TO SENIOR
HIGHSCHOOL IN PUBLIC AND PRIVATE SCHOOLS IN THE MUNICIPALITY OF
ECHAGUE, ISABELA ON APRIL 29-30, 2024 DUE TO HIGH HEAT INDEX**

WHEREAS, the Municipality of Echague has been experiencing continuous increase in temperature leading to extreme heat as the summer sets;

WHEREAS, the General Welfare Clause of the Local Government Code of 1991 authorizes every Local Government Unit to enact such measures that will enhance the public health, safety, convenience, maintain peace and order and promote the general prosperity of its inhabitants;

WHEREAS, with the hazardous impact of the said, the Local Government Unit of Echague is determined to ensure the safety and well-being of all learners and personnel of educational institutions;

NOW, THEREFORE, I, FRANCIS FAUSTINO A. DY, the Local Chief Executive of the Municipality of Echague, by virtue of the powers vested in me by law, do hereby order the suspension of classes from pre-school to senior high school in public and private schools in the Municipality of Echague on April 29-30, 2024 to ensure public safety of our constituents

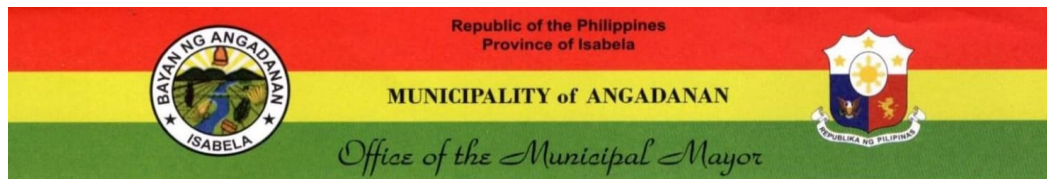
This Executive Order shall take effect immediately.

Issued this 29th day of April, 2024 in the Municipality of Echague, Isabela.

VICE MAYOR ALLAN P. TUPONG, MD
Acting Mayor


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX X
**LOCAL EXECUTIVE ORDER NO. 16
(AN ORDER SUSPENDING FACE-TO-FACE CLASSES
IN ANGADANAN, ISABELA)**

EXECUTIVE ORDER NO. 16

Series of 2024

**AN ORDER DECLARING THE SUSPENSION OF FACE-TO-FACE CLASSES, AND UTILIZATION OF
ALTERNATIVE MODES OF LEARNING IN ALL LEVELS BOTH PUBLIC AND PRIVATE SCHOOLS IN
ANGADANAN, ISABELA, ON APRIL 22-23, 2024, DUE TO EXTREME HEAT WAVE**

WHEREAS, it is a State policy to safeguard the constitutional rights of its citizens, particularly the right to life, safety, and property, and to prioritize the general welfare of the populace, especially in times of disasters and calamities:

WHEREAS, Presidential Executive Order No. 66, series of 2012, authorizes the Local Chief Executive to proclaim localized cancellation or suspension of classes in both public and private educational institutions in response to weather disturbances and calamitous events.

WHEREAS, the recent El Niño Advisory issued by the Department of Science and Technology, Philippine Atmospheric Geophysical and Astronomical Services Administration (DOST-PAGASA) dated March 7, 2024, highlights the persistence of El Niño conditions across the tropical Pacific until May 2024. This weather phenomenon is forecasted to induce extreme heat conditions, leading to a projected heat index that may escalate to levels warranting Extreme Caution:

WHEREAS, the current face-to-face setup of our educational institutions in holding classes necessitates direct physical interaction among students, educators, and school personnel. Thereby increasing the vulnerability to heat-related illnesses and exacerbating the risks posed by extreme heat conditions:

WHEREAS, in light of the foregoing circumstances, it is imperative to prioritize the safety and well-being of our students, teachers, and school personnel:

NOW THEREFORE, I JOELLE MATHEA S. PANGANIBAN, Municipal Mayor of Angadanan, Isabela, by the powers vested in me by law, do hereby declare the suspension of Face-to-Face classes and utilization of Alternative Modes of Learning in all levels for both public and private schools in the Municipality of Angadanan, Isabela, on April 22-23, 2024 due to extreme heat wave.

SO ORDERED

 Issued this 21st day of **April 2024** in the Municipality of Angadanan Isabela.

Joelle Panganiban
JOELLE MATHEA S. PANGANIBAN
 Municipal Mayor

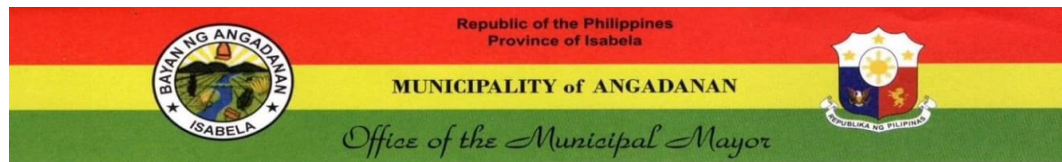


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX Y

LOCAL EXECUTIVE ORDER NO. 17 (AN ORDER SUSPENDING FACE-TO-FACE CLASSES IN ANGADANAN, ISABELA)



EXECUTIVE ORDER NO. 17
Series of 2024

AN ORDER DECLARING THE ADOPTION OF A "7:00 AM TO 11:00 AM" CLASS SCHEDULE AND THE UTILIZATION OF ALTERNATIVE MODES OF LEARNING DURING THE SUSPENSION OF FACE-TO-FACE/ONSITE CLASSES IN THE AFTERNOON FROM THE 24TH TO 26TH OF APRIL 2024 FOR ALL LEVELS BOTH, PUBLIC AND PRIVATE SCHOOLS, WITHIN THE MUNICIPALITY OF ANGADANAN, ISABELA DUE TO EXTREME HEAT CONDITIONS

WHEREAS, it is a State policy to safeguard the constitutional rights of its citizens, particularly the right to life, safety, and property, and to prioritize the general welfare of the populace, especially in times of disasters and calamities;

WHEREAS, Presidential Executive Order No. 66, series of 2012, authorizes the Local Chief Executive to proclaim localized cancellation or suspension of classes in both public and private educational institutions in response to weather disturbances and calamitous events.

WHEREAS, the recent El Niño Advisory issued by the Department of Science and Technology, Philippine Atmospheric Geophysical and Astronomical Services Administration (DOST-PAGASA) dated March 7, 2024, highlights the persistence of El Niño conditions across the tropical Pacific until May 2024. This weather phenomenon is forecasted to induce extreme heat conditions, leading to a projected heat index that may escalate to levels warranting Extreme Caution:

WHEREAS, the Department of Education Schools District Office of Isabela called a special meeting with the Local Chief Executives of the Province of Isabela on 22 April 2024 to discuss the current cancellations and suspensions of face-to-face classes in various Municipalities;

WHEREAS, the Department of Education Schools District Office of Isabela has informed the Local Chief Executives that there is an urgent need for students to undergo face-to-face classes until the end of this school year;

WHEREAS, after careful evaluation and assessment of the current situation of schools, teaching staff, non-teaching staff, and students and in consideration of the request of the Department of Education Schools District Office of Isabela to hold face-to-face classes, the Local School Board of the Municipality of Angadanan has suggested that it is deemed best to adopt a **7:00am to 11:00am class schedule and the utilization of alternative modes of learning in the afternoon**, for all levels in Angadanan, Isabela for the welfare of students;

NOW THEREFORE, I **JOELLE MATHEA S. PANGANIBAN**, Municipal Mayor of Angadanan, Isabela, by the powers vested in me by law, do hereby declare the adoption of a "7:00 am to 11:00 am" class schedule and the utilization of alternative modes of learning during the suspension of face-to-face/ onsite classes in the afternoon from the 24th up to the 26th of April 2024 for all levels both, public and private schools, within the Municipality of Angadanan, Isabela due to the extreme heat conditions.

SO ORDERED

Issued this 23rd day of April 2024 in the Municipality of Angadanan Isabela.

Joelle Panganiban
JOELLE MATHEA S. PANGANIBAN
Municipal Mayor

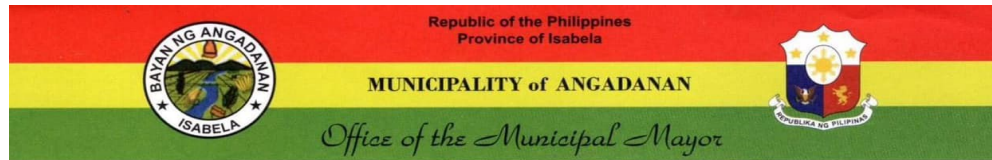


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX Z

LOCAL EXECUTIVE ORDER NO. 18 (AN ORDER SUSPENDING FACE-TO-FACE CLASSES IN ANGADANAN, ISABELA)



EXECUTIVE ORDER NO. 18
Series of 2024

AN ORDER DECLARING THE ADOPTION OF A "7:00 AM TO 11:00 AM" CLASS SCHEDULE AND THE UTILIZATION OF ALTERNATIVE MODES OF LEARNING DURING THE SUSPENSION OF FACE-TO-FACE/ONSITE CLASSES IN THE AFTERNOON FROM THE 2ND TO 3RD AND 6TH TO 10TH OF MAY 2024 FOR ALL LEVELS BOTH, PUBLIC AND PRIVATE SCHOOLS, WITHIN THE MUNICIPALITY OF ANGADANAN, ISABELA DUE TO EXTREME HEAT CONDITIONS

WHEREAS, it is a State policy to safeguard the constitutional rights of its citizens, particularly the right to life, safety, and property, and to prioritize the general welfare of the populace, especially in times of disasters and calamities;

WHEREAS, Presidential Executive Order No. 66, series of 2012, authorizes the Local Chief Executive to proclaim localized cancellation or suspension of classes in both public and private educational institutions in response to weather disturbances and calamitous events.

WHEREAS, the recent El Niño Advisory issued by the Department of Science and Technology-Philippine Atmospheric Geophysical and Astronomical Services Administration (DOST-PAGASA) dated March 7, 2024, highlights the persistence of El Niño conditions across the tropical Pacific until May 2024. This weather phenomenon is forecasted to induce extreme heat conditions, leading to a projected heat index that may escalate to levels warranting Extreme Caution:

WHEREAS, the Department of Education Schools District Office of Isabela called a special meeting with the Local Chief Executives of the Province of Isabela on 22 April 2024 to discuss the current cancellations and suspensions of face-to-face classes in various Municipalities;

WHEREAS, the Department of Education Schools District Office of Isabela has informed the Local Chief Executives that there is an urgent need for students to undergo face-to-face classes until the end of this school year;

WHEREAS, after careful evaluation and assessment of the current situation of schools, teaching staff, non-teaching staff, and students and in consideration of the request of the Department of Education Schools District Office of Isabela to hold face-to-face classes, the Local School Board of the Municipality of Angadanan has suggested that it is deemed best to adopt a **7:00am to 11:00am class schedule and the utilization of alternative modes of learning in the afternoon**, for all levels in Angadanan, Isabela for the welfare of students;

NOW THEREFORE, I JOELLE MATHEA S. PANGANIBAN, Municipal Mayor of Angadanan, Isabela, by the powers vested in me by law, do hereby declare the adoption of a "7:00 am to 11:00 am" class schedule and the utilization of alternative modes of learning during the suspension of face-to-face/ onsite classes in the afternoon from the 2nd to 3rd and 6th to 10th of May 2024 for all levels both, public and private schools, within the Municipality of Angadanan, Isabela due to the extreme heat conditions.

SO ORDERED

Issued this 1st day of May 2024 in the Municipality of Angadanan Isabela.

Joelle Panganiban
JOELLE MATHEA S. PANGANIBAN
Municipal Mayor



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX AA

DEPED ORDER No. 037, s. 2022

(GUIDELINES ON THE CANCELLATION OR SUSPENSION OF CLASSES)



Republic of the Philippines
Department of Education

01 SEP 2022

DepEd ORDER
No. **037**, s. 2022

GUIDELINES ON THE CANCELLATION OR SUSPENSION OF CLASSES AND WORK IN SCHOOLS IN THE EVENT OF NATURAL DISASTERS, POWER OUTAGES/POWER INTERRUPTIONS, AND OTHER CALAMITIES

To: Undersecretaries
Assistant Secretaries
Minister, Basic, Higher, and Technical Education, BARMM
Bureau and Service Directors
Regional Directors
Schools Division Superintendents
Public and Private Elementary and Secondary School Heads
All Others Concerned

1. This policy promotes the safety and protection of learners and personnel from unnecessary physical dangers that they may be exposed to during natural disasters and calamities. This is to ensure that their constitutional rights to life, health, safety, and property are always protected.
2. To minimize the health and safety risks brought about by disasters and other natural calamities, the Department recognizes that the suspension of classes and work during emergencies remain to be necessary in upholding the physical and mental well-being of learners and school personnel.
3. The Department of Education (DepEd) issues these **Guidelines on the Cancellation or Suspension of Classes and Work in Schools in the Event of Natural Disasters, Power Outages/Power Interruptions, and Other Calamities**, to further guide schools, its personnel, and learners, both within the public and private institutions.
4. This Order shall take effect immediately after its publication on the DepEd website as well as its filing with the Office of the National Administrative Register (ONAR) at the University of the Philippines (UP) Law Center, UP Diliman, Quezon City.
5. For more information, please contact the **Disaster Risk Reduction and Management Service**, 2nd Floor, Mabini Building, Department of Education Central Office, DepEd Complex, Meralco Avenue, Pasig City through email at drmo@deped.gov.ph or telefax number (02) 8637-4933.
6. Immediate dissemination of and strict compliance with this Order is directed.



DEPED-OSEC-489314

Sara Zimmerman Duterte
SARA Z. DUTERTE
Vice President and Secretary



PHILIPPINE NORMAL UNIVERSITY
The National Center for Teacher Education

APPENDIX AB
CERTIFICATION FROM THE STATISTICIAN



OMEGA ANALYTIX

CERTIFICATION

THIS IS TO CERTIFY that the statistical procedures and analyses conducted in the research whose title appears below and performed by the undersigned statistician are accurate and appropriate to the data collected.

Further, data treatment employed confidentiality and anonymity with respect to the participants' responses. In effect, all data fields directly identifying the participants were discarded.

Research Title: *DEPED COMPUTERIZATION PROGRAM (DCP) IMPLEMENTATION: AN EVALUATION TOWARDS TECHNOLOGY LEADERSHIP MODEL*

Author/s: *Jerry F. Gallestre*

This certification, issued upon request, serves to provide assurance of the accuracy and appropriateness of the statistical procedures and analyses in the mentioned research.

Certified by:

A handwritten signature in black ink, appearing to read "Bryan Carlo P. Responso".

BRYAN CARLO P. RESPONSO
Statistician

Date Issued: June 16, 2024



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX AC

**CERTIFICATE OF PROFESSIONAL PROOFREADING AND LANGUAGE
EDITING**



PHILIPPINE NORMAL UNIVERSITY NORTH LUZON

The National Center for Teacher Education

The Indigenous Peoples Education Hub

Alicia, Isabela

**CERTIFICATION OF PROFESSIONAL PROOFREADING
AND LANGUAGE EDITING**

TO WHOM IT MAY CONCERN:

This is to certify that the dissertation research entitled: "**DEPED COMPUTERIZATION PROGRAM (DCP) IMPLEMENTATION: AN EVALUATION TOWARDS TECHNOLOGY LEADERSHIP MODEL**", to be submitted by **JERRY F. GALLESTRE** of Philippine Normal University North Luzon has been edited for proper English language, grammar, punctuation, spelling and overall style by the undersigned.

Neither the research content nor the researcher's intention was altered in any way during the editing process.

Very truly yours,

A blue rectangular box containing a handwritten signature in cursive script, which appears to read "mguib".

MARISSA R. GUIAB, EdD

Language Critic

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX AD**CERTIFICATE OF AUTHENTICITY****PHILIPPINE NORMAL UNIVERSITY NORTH LUZON***The National Center for Teacher Education**The Indigenous Peoples Education Hub*

Alicia, Isabela

AUTHENTICITY RESULT

Date of Release: July 9, 2024
Result Code: PNUNL-FTD-24-004
Title of Output: DepEd Computerization Program (DCP) Implementation: An
Evaluation Towards Technology Leadership Model
Author (s): Jerry F. Gallestre

Authenticity Report:

Similarity Report: 15%

- *Interpretation:* A similarity of 15% means that 15% of the entire paper is similar to sources in Turnitin's (authenticity software) online repository. The colored bibliographical references denote the sources of similarity to previously published work which are from internet sources (13%), publications (8%), and student papers (7%) for the remaining similarity percentage.
- *Highlighted text in the manuscript:*
 - Red marks and highlights are sets of texts directly or exactly copied from online sources.
 - Other color marks and highlights are sets of texts exactly copied from other sources (student papers and publications).

CLEMENTE M. AGUINALDO JR., PhD

Associate Dean, FTD

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX AE**REQUEST LETTER FOR VALIDATION OF RESEARCH REPORT
(IN-DEPTH INTERVIEW FOR SCHOOL HEADS)****PHILIPPINE NORMAL UNIVERSITY NORTH LUZON***The National Center for Teacher Education**The Indigenous Peoples Education Hub*

Alicia, Isabela

Dear Key Interview Informant,

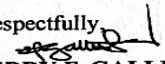
Greetings!

I, **JERRY F. GALLESTRE**, humbly request your usual support and extend your participation in my on-going research endeavor titled *DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model* to validate and confirm the veracity and authenticity of the information you have disclosed during the in-depth interview.

I am looking forward to your most favorable response and consideration on this request.

Thank you and may God reciprocate your kindness in a hundredfold!

Respectfully,


JERRY F. GALLESTRE
Researcher

CONSENT LETTER FROM THE KEY INFORMANT

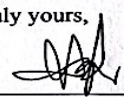
Dear Mr. Gallestre,

I acknowledge the authenticity of my statement and confirm the proper translation of my words with its truthfulness and clarity of meaning.

Likewise, I agree that the translation of my statements does not provide any identity that might tarnish my personal and professional integrity.

I affix my signature/initial below to show the veracity of my statements above.

Truly yours,



Signature/Initial (Only)

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX AF**REQUEST LETTER FOR VALIDATION OF RESEARCH REPORT
(IN-DEPTH INTERVIEW FOR ICT COORDINATORS)****PHILIPPINE NORMAL UNIVERSITY NORTH LUZON***The National Center for Teacher Education**The Indigenous Peoples Education Hub*

Alicia, Isabela

Dear Key Interview Informant,

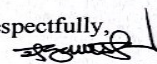
Greetings!

I, **JERRY F. GALLESTRE**, humbly request your usual support and extend your participation in my on-going research endeavor titled *DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model* to validate and confirm the veracity and authenticity of the information you have disclosed during the in-depth interview.

I am looking forward to your most favorable response and consideration on this request.

Thank you and may God reciprocate your kindness in a hundredfold!

Respectfully,


JERRY F. GALLESTRE
Researcher

CONSENT LETTER FROM THE KEY INFORMANT

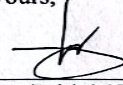
Dear Mr. Gallestre,

I acknowledge the authenticity of my statement and confirm the proper translation of my words with its truthfulness and clarity of meaning.

Likewise, I agree that the translation of my statements does not provide any identity that might tarnish my personal and professional integrity.

I affix my signature/initial below to show the veracity of my statements above.

Truly yours,



Signature/Initial (Only)

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

APPENDIX AG**REQUEST LETTER FOR VALIDATION OF RESEARCH REPORT
(IN-DEPTH INTERVIEW FOR TEACHERS)****PHILIPPINE NORMAL UNIVERSITY NORTH LUZON***The National Center for Teacher Education**The Indigenous Peoples Education Hub*

Alicia, Isabela

Dear Key Interview Informant,

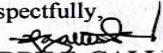
Greetings!

I, **JERRY F. GALLESTRE**, humbly request your usual support and extend your participation in my on-going research endeavor titled *DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model* to validate and confirm the veracity and authenticity of the information you have disclosed during the in-depth interview.

I am looking forward to your most favorable response and consideration on this request.

Thank you and may God reciprocate your kindness in a hundredfold!

Respectfully,


JERRY F. GALLESTRE
Researcher

CONSENT LETTER FROM THE KEY INFORMANT

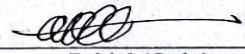
Dear Mr. Gallestre,

I acknowledge the authenticity of my statement and confirm the proper translation of my words with its truthfulness and clarity of meaning.

Likewise, I agree that the translation of my statements does not provide any identity that might tarnish my personal and professional integrity.

I affix my signature/initial below to show the veracity of my statements above.

Truly yours,



Signature/Initial (Only)


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX AH
**REQUEST LETTER FOR VALIDATION OF RESEARCH REPORT
(FOCUS GROUP DISCUSSION FOR TEACHERS)**

PHILIPPINE NORMAL UNIVERSITY NORTH LUZON
The National Center for Teacher Education
The Indigenous Peoples Education Hub

Alicia, Isabela

Dear Key Informants,

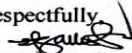
Greetings!

I, **JERRY F. GALLESTRE**, humbly request your usual support and extend your participation in my on-going research endeavor titled *DepEd Computerization Program (DCP) Implementation: An Evaluation Towards Technology Leadership Model* to validate and confirm the veracity and authenticity of the information you have disclosed during the Focus Group Discussion.

I am looking forward to your most favorable response and consideration on this request.

Thank you and may God reciprocate your kindness in a hundredfold!

Respectfully,


JERRY F. GALLESTRE
 Researcher

CONSENT LETTER FROM THE KEY INFORMANTS

Dear Mr. Gallestre,

We acknowledge the authenticity of our statements and confirm the proper translation of our words with its truthfulness and clarity of meaning.

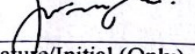
Likewise, we agree that the translation of our statements does not provide any identity that might tarnish our personal and professional integrity.

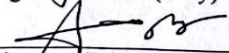
We affix our signatures/initials below to show the veracity of our statements above.

Truly yours,


 Signature/Initial (Only)


 Signature/Initial (Only)


 Signature/Initial (Only)


 Signature/Initial (Only)

**APPENDIX AI****VERBAL STATEMENTS OF RESPONDENTS PERTAINING TO PERSONAL PROFILE'S LENGTH OF SERVICE**

Sub-theme	Code	Statements
31 years or higher	LS1	RT9: <i>Hello. I am Teacher...handling Grade 11 students. I've been in the service for 31 years, so I am old enough to say about the history of education from DECS to DepEd.</i> RT11: <i>Hi. Ako po si Teacher... kasalukuyang nagtuturo ng Ikaapat na Baitang at hinihintay ko na rin ang approval ng aking retirement dahil I rendered 34 years of service as permanent teacher. (Hi. I am Teacher...presently handling Grade 4, and waiting for the approval of my retirement because I already served 34 years as permanent teacher.)</i>
21-30 years	LS2	RT3: <i>I started teaching since 1998. Since then, I used to hold coaching in sports. At the same time, at present I'm teaching Oral Communication, and Reading and Writing.</i> RT12: <i>I am Teacher...presently handling Grade 8 learners for 26 years. I am assigned as the ICT teacher of Grade 8, Reading coordinator, and Catch-up Friday coordinator.</i>
11-20 years	LS3	RT17: <i>I am assigned to handle Grade 1 learners this year, but before I was handling either Grade 3 or Grade 4 learners. I've been in the service for 18 years.</i>
1-10 years	LS4	RT1: <i>I've been in the service for almost 5 years teaching Language subjects like Komunikasyon at Pananaliksik, and Reading and Writing. Also, I am the School Paper Adviser of Lunggati.</i>

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

		<i>RT2: I am teaching Philosophy subjects and Social Sciences, and I am already 7 years in the service.</i> <i>RT5: Ako po si Teacher... kasalukuyang nagtuturo sa Ikaanim na Baitang. Ako po ay nasa dalawang taon ng pagtuturo. (I am Teacher ... presently teaching Grade 6 level. I am in the second year of service.)</i>
Below 1 year (11 months or lower)	LS5	<i>RT4: I've been teaching for almost three years but six months in the service as permanent. I am a Grade 8 teacher, and my major is TLE.</i>



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX AJ

VERBAL STATEMENTS OF RESPONDENTS PERTAINING TO PERSONAL PROFILE'S ICT-RELATED ANCILLARY TASKS

Sub-theme	Code	Statements
One ancillary task	AT1	RT7: <i>I am the Grade 5 and Grade 6 teacher. At the same time, I am the Journalism Coordinator.</i> RT15: <i>I am the focal person of the Senior High School Department of this school. I've been in the service for seven years as Teacher III. I handled the subjects: Humanities and Social Sciences, and DRRR subjects.</i>
Two ancillary tasks	AT2	RT6: <i>Good morning! I am Teacher ... a Grade 5 teacher coordinator, and I am assigned as the Supreme Elementary Learner Government (SELG) Adviser.</i> RT8: <i>I am the Grade 3, and I've been in the service for 16 years. Before I was assigned as the school ICT coordinator, but now I am assigned as the School-Based Feeding Program (SBFP) Coordinator and Water, Sanitation and Hygiene in Schools (WINS) Coordinator.</i> RT10: <i>I am the Social Science coordinator in the Junior High School Department, and at the same time three years as SSLG adviser. I've been in the service for 18 years.</i> RT13: <i>I am the Grade 9 level coordinator of this school. I've been in this school for 15 years, and I am currently assigned as the DRRM coordinator as my additional load.</i>
Three or more ancillary tasks	AT3	RT14: <i>I am the English subject coordinator, and I have been in the service for 22 years. Currently, aside from being the</i>

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

		<i>English coordinator, I am the newly assigned Reading Coordinator and Catch-up Friday Coordinator.</i>
--	--	--


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX AK
**VERBAL STATEMENTS OF RESPONDENTS PERTAINING TO DCP
PROFILE'S COMPUTER TO STUDENT RATIO**

Sub-theme	Code	Statements
Ideal ratio of computer to learner	CS1	
Low ratio of computer to learners	CS2	RT13: <i>If possible, mameet yung ideal na 1:1 na computer learner ratio. At ganun din sana sa aming mga teachers upang mas mapadali ang aming pagtuturo.</i> (If possible, it should attain the ideal 1:1 computer learner ratio, and also to us teachers, in order for us to make teaching easier.) RT16: <i>I believe the problem lies in the ratio of computers to students. Mahirap kasing magturo ka na yung iba ay walang computer. Nanonood lang sa gumagamit sa computer kaya mas mainam sana kung makapagprovide ang school ng additional computers pa para maging 1:1.</i> (I believe the problem lies in the ratio of computers to students. It is difficult to teach that other students do not have computers. They are just watching their co-students who are using the computer. So, it is better for the school to provide additional computers to meet the 1:1 ratio.) RT7: <i>Dapat 1:1 ang ratio kasi it's limited, only 12 desktops were delivered.</i> (The ratio should be 1:1, because apparently computers are limited, only 12 desktops were delivered.) RT11: <i>Sa tingin ko ang DCP package ay kailangang iimprove. The number of the delivered package to us doesn't meet the ratio of teachers and so with the learners.</i> (I think DCP package should be improved. The number of the delivered package to us doesn't meet the ratio of teachers and so with the learners.)


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX AL
**VERBAL STATEMENTS OF RESPONDENTS PERTAINING TO DCP
PROFILE'S NON-SERVICEABLE COMPUTERS**

Sub-theme	Code	Statements
Low number of non-serviceable computers	NS1	
High number of non-serviceable computers	NS2	RT9: <i>Package, dahil based on my experience, ang mga tablets ay hindi na functional after three years.</i> <i>(Package, because based on my experience, the tablets are not functional after three years.)</i> RT11: <i>For me, package because the package needs improvement. Kasi almost ng DCP package ay sira-sira na.</i> <i>(For me, I am choosing package because it is what I believe that needs improvement. Computers in the DCP package are almost not usable.)</i>

**APPENDIX AM****VERBAL STATEMENTS OF RESPONDENTS PERTAINING TO SCHOOL HEADS' LEVEL OF SUPPORT IN TERMS OF DCP INITIATIVES**

Sub-theme	Code	Statements
School head's preparation to be a recipient of the DCP package	DI1	RT8: <i>When I was the ICT coordinator last 2018, yes I felt the preparations because we were given the memo, and we were given the time to prepare the computer laboratory.</i> RT10: <i>Before the distribution of the DCP package for both junior and senior high school, I actually felt the preparations made by our school head. He made sure that the buildings are ready, and he even provided an air condition just for the DCP package.</i> RT11: <i>Yes, there is still the preparation but for me biglaan yung pagbaba ng memo so it's a short time of preparation. Nabigla po kami. (Yes, there is still the preparation, but there was an abrupt dissemination of a memo, so in that short time of preparation, we were shocked.)</i> RT12: <i>My answer is yes, because if there is no preparation, then we are not able to grant the DCP by DepEd.</i> RT15: <i>Yes, there are preparations made by our school head. He helped us to make our e-classroom ready.</i> RT16: <i>Before the arrival of the package, we observed our school head preparing all the papers needed before the acceptance of the DCP package.</i> RSH5: <i>Yes, if unluckily we were not one of the DCP recipients, I will take initiative for this to have gadgets like I will communicate to all internal and external stakeholders so that</i>


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

they could produce ICT gadgets to be utilized by learners. I will ask assistance and support from them even the maintenance of this.

RSH6: The willingness of our stakeholders na suportahan ang aming pangangailangan is very evident, pero it is only when we express ourselves that our school is facing scarcity of funds. From there, the moment that we tell them that our fund ay kulang, what they gonna give to us is only the needed amount because our school is very transparent to them especially on the school budget.

(The willingness of our stakeholders to support our needs is very evident, but it is only when we express ourselves that our school is facing scarcity of funds. From there, the moment that we tell them that our fund is insufficient, what they gonna give to us is only the needed amount because our school is very transparent to them especially on the school budget.)

RSH10: If we were not a recipient, I would say yes. Kailangan pa rin ipursue na magkaroon ng ICT equipment. Siguro ang primary mode naming if that's the case is to outsource from our stakeholders like our alumni. Wala kaming choice kundi talagang humingi ng tulong sa kanila...actually, I'm very thankful that my teachers are having their own initiative to also learn the processes of ICT. For example, in the assessment process, they have this software that can be downloaded, and they can just print the answer sheet. For the cellphones, they can just take a photo of it, then the software will check the document. It can actually have the summary and item analysis.

(If we were not a recipient, I would say yes. I will still pursue to have ICT equipment. Maybe our primary mode if that's the case is to outsource from our stakeholders. We have no choice but to really ask them for help...actually, I'm very thankful that my teachers are having their own initiative to also learn the processes of ICT. For example, in the assessment process, they have this software that can be downloaded, and they can just print the answer sheet. For the cellphones, they can just take a photo of it,

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

		<i>then the software will check the document. It can actually have the summary and item analysis.)</i>
Assistance from the alumni	DI2	
Assistance from the SPTA	DI3	
Assistance from the LGU	DI4	
Assistance from the parents	DI5	


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX AN

VERBAL STATEMENTS OF RESPONDENTS PERTAINING TO SCHOOL HEADS' LEVEL OF SUPPORT IN TERMS OF DCP PROGRAMS

Sub-theme	Code	Statements
Implementation in an ICT program	DP11	RT5: <i>Yes, sir. I'm using DCP as a part of my instruction because we're using our computer laboratory in our ICT subject.</i> RT9: <i>Since I'm teaching Empowerment Technology, I integrate DCP in my lesson. For example, word processing...we use different DCP equipment here. We follow different steps for example in encoding just like that.</i> RT11: <i>Yes, sir. DCP helped me to achieve some learning competencies in all subjects.</i> RT12: <i>For me, yes since I am an ICT teacher of Grade 8. Our school helped me to maximize lalo na yung computer room namin kung paano matuto ang mga bata using the technology or the computer.</i> <i>(For me, yes since I am an ICT teacher of Grade 8. Our school helped me to maximize especially our computer room on how the children can learn using the technology or the computer.)</i> RT13: <i>Yes, we integrate DCP as a part of our instruction since during computer time we use the DCP package in our computer laboratory.</i> RT15: <i>Yes, sir. We're using laptops, computers for our daily teaching.</i> RT16: <i>Yes, sir. Actually, araw-araw na nagagamit namin. Lagi kaming nagpriprint ng materials kasi kailangan talagang nakikita nila maliban sa nababasa nila. Kailangan nila na may pictures.</i> <i>(Yes, sir. Actually, we use it every day. We always</i>

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

		<i>print materials because they really need to see other than what they can read. They need to have pictures.)</i> <i>RT4: As a TLE teacher, yes sometimes. I am using the computers for computer-based exam. We're using google form and not only that, but we're also using DCP especially if we are answering some google forms of the DepEd something like that.</i> <i>RT13: Yes, I'm making a program to assess students using Lumi app, a program that you can create your own assessment and then you can install in the computer, and students ang bahalang sumagot. No worries kasi nararandom mga questions doon.</i> <i>(Yes, I'm making a program to assess students using Lumi app, a program that you can create your own assessment and then you can install in the computer, and it's up to students to answer. No worries because the questions are randomized there.)</i>
Maintenance of the DCP package	DP12	
DCP financial program	DP13	
ICT-contested activities	DP14	
DCP security	DP15	


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX AO
VERBAL STATEMENTS OF RESPONDENTS PERTAINING TO SCHOOL HEADS' LEVEL OF SUPPORT IN TERMS OF DCP UTILIZATIONS

Sub-theme	Code	Statements
Integration of DCP in teaching	DP16	
Utilization of DCP package in academic activities	DP17	
Utilization of DCP package in establishing and communicating partnership	DP18	
Submission of school reports	DP19	<i>RICT2: Yes, it helped us a lot in making and submitting ICT-related reports faster.</i> <i>RICT8: Yes, it does. My role as the ICT coordinator really transformed me into technology leader among teachers because most of the electronic submission of reports as well as the generation of electronic reports and much more on addressing issues on ICT or DCP gadgets, I'm always the one doing those things because as my school head once pronounced to us during our school MANCOM that all issues and concerns of ICT, it is my primordial role as the ICT coordinator of this school to act on it...kaya kahit hindi ko kaya, kailangan kong kayanin...kung hindi ko alam, kailangan kong aralin dahil extreme eh...sa baba inaasahan ako ng mga kasama kong guro...ganun din naman sa school head ko.</i> <i>(Yes, it does. My role as the ICT coordinator really transformed me into technology leader among teachers because most of the electronic submission of reports as well as the generation of electronic</i>

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

		<i>reports and much more on addressing issues on ICT or DCP gadgets, I'm always the one doing those things because as my school head once pronounced to us during our school MANCOM that all issues and concerns of ICT, it is my primordial role as the ICT coordinator of this school to act on it...if it seems that I can't do it, I'll find a way for me to be able to do it... if there's something that I do not know, I need to find a way to learn it because I am working in between, i.e., for the expectations of my fellow teachers and for my school head.)</i>
Utilization of DCP in the conduct of Monitoring and Evaluation (M&E)	DP20	


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX AP
**VERBAL STATEMENTS OF RESPONDENTS PERTAINING TO THE DCP
CHALLENGE ON THE RATIO OF COMPUTER TO LEARNER**

Sub-theme	Code	Statements
Low ratio of computers to learners	DC1	RSH1: <i>I think we have not yet achieved the goal of this endeavor or program, because still there are many learners who do not have the full access to the packages considering that the number of laptops being delivered to us is not enough for the number of learners that we have, so the ratio is too high like 20 or 40 learners in one computer.</i> RICT6: <i>The crucial problem? It's the number of package that has been delivered because looking at the number of teachers and the number of students, it's not really enough. Though it's helpful, but then it's still not enough.</i> RT17: <i>The most crucial problem I guess is the inadequate number of computers. Actually, I encouraged parents to at least have computers in their respective homes but because of their parents' situation, they cannot afford to buy computer for their children except for those who can afford. However, in the classroom, I let them experience how to manipulate the computers.</i>
Unstable internet connectivity	DC2	
No allotted funds for DCP package replacement/maintenance	DC3	

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

Lack of ICT/DCP-related trainings	DC4	
Low-end/poor DCP computers/laptops/tablets	DC5	
Poor DCP classroom or ICT laboratory	DC6	


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX AQ
**VERBAL STATEMENTS OF RESPONDENTS PERTAINING TO THE DCP
CHALLENGE ON THE INTERNET CONNECTIVITY**

Sub-theme	Code	Statements
Low ratio of computers to learners	DC1	
Unstable internet connectivity	DC2	RT10: <i>One of the problems is the unstable internet connectivity. We addressed the problem by increasing the Mbps.</i> RT2: <i>Not stable because it's fluctuating...it is not consistent sometimes even if I was in the middle of my teaching, it suddenly stopped, and it's loading. I access it for free.</i> RT3: <i>Yes, we have internet connection, but it is not stable, and it is for free.</i> RT4: <i>The school has internet connectivity. Most of the time nagdodown ang aming internet because our internet connection expands from senior high school to junior high school. If the internet is only used by teachers, I guess it will be stable. We access it for free.</i> <i>(The school has internet connectivity. Most of the time our internet is down because our internet connection expands from senior high school to junior high school. If the internet is only used by teachers, I guess it will be stable. We access it for free.)</i> RT5: <i>Yes, we have internet, but not stable because it's the company's fault...it's the provider's fault. We access it for free.</i> RT6: <i>Yes, we have internet connectivity here...actually this time it's unstable. We access it for free.</i>

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

		RT8: <i>Yes, sometimes it's stable because of our location.</i> RT9: <i>Sometimes, it's stable. We access it for free.</i> RT15: <i>Yes, but sometimes not stable. Last Friday, the connection has been lost due to the accident caused by the dump truck. We access it for free.</i> RT16: <i>Yes, pero nawawala sometimes sa lower grades, pero na-aactionan naman agad.</i> <i>(Yes, but it is not stable sometimes in the lower grades, but it is immediately acted upon.)</i>
No allotted funds for DCP package replacement/maintenance	DC3	
Lack of ICT/DCP-related trainings	DC4	
Low-end/poor DCP computers/laptops/tablets	DC5	
Poor DCP classroom or ICT laboratory	DC6	



APPENDIX AR

VERBAL STATEMENTS OF RESPONDENTS PERTAINING TO THE DCP
CHALLENGE ON THE ALLOTTED DCP FUNDS

Sub-theme	Code	Statements
Low ratio of computers to learners	DC1	
Unstable internet connectivity	DC2	
No allotted funds for DCP package replacement/maintenance	DC3	RICT1: <i>Due to low maintenance budget, humingi kami ng raise kung saan pwedeng magdagdag ng specific amount para pangmaintenance ng unit, nag-agree naman sila. Ang problema ay sa collection, kasi hindi mo naman maforce ang mga parents na magbayad, kasi voluntary basis lamang.</i> <i>(Due to low maintenance budget, we asked for a raise where they can add a specific amount for the maintenance of the unit which they agreed. The problem is with the collection, because you cannot force the parents to pay, because it is only on a voluntary basis.)</i> RICT3: <i>There is little financial support provided to DCP. Most of our MOOE is allotted on school beautification and facilities in the school.</i> RT4: <i>My answer is no because when the DepEd gave us the package, that's it... no more financial subsidy given to us to maintain the DCP package.</i>
Lack of ICT/DCP-related trainings	DC4	
Low-end/poor DCP computers/laptops/tablets	DC5	
Poor DCP classroom or ICT laboratory	DC6	


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

APPENDIX AS
**VERBAL STATEMENTS OF RESPONDENTS PERTAINING TO THE DCP
CHALLENGE ON THE ICT/DCP-RELATED TRAININGS**

Sub-theme	Code	Statements
Low ratio of computers to learners	DC1	
Unstable internet connectivity	DC2	
No allotted funds for DCP package replacement/maintenance	DC3	
Lack of ICT/DCP-related trainings	DC4	RT5: <i>None, but prior to entering the DepEd, I have ICT-related trainings. I usually attend such trainings once a year.</i> RT8: <i>No, but I have ICT-related trainings during our school-based INSET only.</i> RT10: <i>Unfortunately, sir I don't have DCP trainings, but I have ICT-related seminars like the use of MS Excel, Canva, MS Publisher. I usually attend once a year.</i> RT12: <i>Honestly speaking, when they delivered the first DCP in our school, we were not trained to use that one. We were not trained, but tinulungan kami how to set up the computers. In reality, kailangan before they are going to install in our school, we should undergo a training. Ang nangyari noon, there's no training at all. Buti na lang nagkataon nandito sina Sir ... at Sir ... na gumabay sa amin noon.</i> <i>(Honestly speaking, when they delivered the first DCP in our school, we were not trained to use that one. We were not trained, but they</i>

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

		<i>helped us how to set up the computers. Supposedly, we should undergo a training before they are going to install in our school. What happened then, there's no training at all. It's good that Sir ... and Sir ... were there who guided us before.)</i> <i>RT15: No DCP trainings, because only chosen teachers are sent to the trainings. I only have ICT-related trainings.</i>
Low-end/poor DCP computers/laptops/tablets	DC5	
Poor DCP classroom or ICT laboratory	DC6	

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

CURRICULUM VITAE**JERRY F. GALLESTRE****Esperanza West, Aurora, Isabela****Philippines****Email: jerryfgallestre@gmail.com****EDUCATIONAL ATTAINMENT*****Post-education**

Master of Arts in Educational Management
Philippine Normal University North Luzon Campus
Aurora, Alicia, Isabela

Master of Arts in English Language Teaching
Philippine Normal University North Luzon Campus
Aurora, Alicia, Isabela
(Completed 9 units)

***Tertiary**

Bachelor of Elementary Education
with Specialization in Elementary English
Philippine Normal University North Luzon Campus
Aurora, Alicia, Isabela

***Secondary**

Doña Aurora National High School
Sta. Rita, Aurora, Isabela

***Elementary**

Esperanza Elementary School
Esperanza East, Aurora, Isabela

WORK EXPERIENCES

***2018-2023** Lockwood Elementary School
Clovis, NM 8810, United States of America (USA)
Level Three-A Instructional Leader


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

- *2012-2018 Esperanza Elementary School
Aurora, Isabela, Philippines
Public School Teacher III
- *2012 Victoria Elementary School
Aurora, Isabela, Philippines
Public School Teacher I
- *2011 Bannagao Elementary School
Aurora, Isabela, Philippines
Public School Teacher I
- *2011-2010 Macatal Elementary School
Aurora, Isabela, Philippines
Public School Teacher I
- *2008-2010 La Salette of Aurora
Aurora, Isabela, Philippines
Private School Teacher

AWARDS/ACCOMPLISHMENTS/ACHIEVEMENTS

- ***Layer 3 Interventionist**, Lockwood Elementary School, Clovis, NM, USA
- ***4th Grade Team Leader**, Lockwood Elementary School, Clovis, NM, USA
- ***After School Program Teacher**, Lockwood Elementary School, Clovis, NM, USA
- ***Author**, School Managers' Leadership Styles and Teacher Performance (September 2015). *Asia Pacific Journal of Research*, 1(31), 84.
- ***Commencement Speaker**, 77th Commencement Exercises and Recognition Program, Esperanza Elementary School, Aurora, Isabela, Philippines
- ***Resource Speaker**, 2017 Capacity Building for Teachers on Campus Journalism, Aurora, Isabela, Philippines
- ***Facilitator**, 2017 District Schools Press Conference and Area 02 Schools Press Conference, Aurora, Isabela, Philippines
- ***Facilitator**, 2017 Summer Camp for Campus Journalism, Aurora, Isabela, Philippines
- ***Rapporteur**, 2017 District-Echo Seminar Workshop on the Development Appropriate Practices in the Early Language Literacy and Numeracy, Aurora, Isabela, Philippines

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

***Most Outstanding Teacher**, 2017 School Search for Outstanding Educators, Esperanza Elementary School, Aurora, Isabela, Philippines

***Facilitator**, 2016 District Schools Press Conference and Area 02 Schools Press Conference, Aurora, Isabela, Philippines

***Speaker**, 2015 District Schools Press Conference, Aurora, Isabela, Philippines

***Paper Presenter**, 2015 Graduate Research Forum (Philippine Normal University North Luzon)

***Outstanding School Brigada Eskwela Coordinator**, Esperanza Elementary School, Aurora, Isabela, Philippines

***Outstanding Supreme Pupil Government (SPG) Adviser**, Esperanza Elementary School, Aurora, Isabela, Philippines

***School Paper Adviser**, The Hope, the official school publication of Esperanza Elementary School, Aurora, Isabela, Philippines

***Champion Teacher Coach** (Sala ti Mais), 2018 District Arts Month Celebration, Aurora, Isabela, Philippines

***Champion Teacher Coach** (Copy Reading and Headline Writing-English), 2017 Division Training CUM Seminar-Writeshop for Elementary and Secondary Campus Paper Advisers, Aurora, Isabela, Philippines

***Best Anchor and Best Script Writer** (Radio Broadcasting-English), 2017 Division Training CUM Seminar-Writeshop for Elementary and Secondary Campus Paper Advisers, Aurora, Isabela, Philippines

***Champion Teacher Coach** (District Copy Reading and Headline Writing- English), 2017 District Summer Camp for Campus Journalism, Aurora, Isabela, Philippines

***Third Place Teacher Coach** (Copy Reading and Headline Writing- Filipino), 2017 District Summer Camp for Campus Journalism, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Sports Writing- English), 2017 District Summer Camp for Campus Journalism, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Sports Writing- Filipino), 2017 District Summer Camp for Campus Journalism, Aurora, Isabela, Philippines

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

***Champion Teacher Coach** (Sports Writing-English), 2017 District Schools Press Conference, Aurora, Isabela, Philippines

***Third Place Teacher Coach** (Sports Writing-Filipino), 2017 District Schools Press Conference, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Copy Reading and Headline Writing-English), 2017 District Schools Press Conference, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Copy Reading and Headline Writing-Filipino), 2017 District Schools Press Conference, Aurora, Isabela, Philippines

***Fourth Place Teacher Coach** (Copy Reading and Headline Writing- English), 2017 Area Schools Press Conference, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Collaborative Desktop Publishing-English), 2017 Capacity Building for Teachers on Campus Journalism, Aurora, Isabela, Philippines

***8th Runner Up School Paper Adviser**, 2017 Division Schools Press Conference, Alicia, Isabela, Philippines

***8th Runner Up Teacher Coach** (Copy Reading and Headline Writing- English), 2017 Division Schools Press Conference, Alicia, Isabela, Philippines

***Champion Teacher Coach** (Sala ti Mais), 2017 District Arts Month Celebration, Aurora, Isabela, Philippines

***Third Place Teacher Coach** (Declamation), 2017 District Education Week Celebration, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Essay Writing), 2017 District Science Quest, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Impromptu Speaking), 2017 District Science Quest, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Sci-Mod-Tech), 2017 District Science Quest, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Science Skills Olympics), 2017 District Science Camp, Aurora, Isabela, Philippines

***Third Place Teacher Coach** (Essay Writing), 2017 District Science Camp, Aurora, Isabela, Philippines

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

***Champion Teacher Coach** (Sala ti Mais), 2016 District Arts Month Celebration, Aurora, Isabela, Philippines

***Champion Teacher Coach** (Declamation), 2016 District Education Week Celebration, Aurora, Isabela, Philippines

***Second Runner Up Teacher Coach** (Science Skills Olympics), 2016 District Sci-Kid Competition, Aurora, Isabela, Philippines

***Champion Teacher Coach** (Sports Writing- English), 2016 District Schools Press Conference, Aurora, Isabela, Philippines

***Third Place Teacher Coach** (Sports Writing- Filipino), 2016 District Schools Press Conference, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Copy Reading and Headline Writing- English), 2016 District Schools Press Conference, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Copy Reading and Headline Writing- Filipino), 2016 District Schools Press Conference, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (News Writing- Filipino), 2016 District Schools Press Conference, Aurora, Isabela, Philippines

***Seventh Place Teacher Coach** (Sports Writing- English), 2016 Area 02 Schools Press Conference, Aurora, Isabela, Philippines

***Third Place Teacher Coach** (News Writing- Filipino), 2016 Area 02 Schools Press Conference, Aurora, Isabela, Philippines

***Third Place Teacher Coach** (Copy Reading and Headline Writing- English), 2016 Area 02 Schools Press Conference, Aurora, Isabela, Philippines

***Fourth Place Teacher Coach** (Copy Reading and Headline Writing- Filipino), 2016 Area 02 Schools Press Conference, Aurora, Isabela, Philippines

***Fourth Place Teacher Coach** (Sports Writing- English), 2016 Division Schools Press Conference, Roxas, Isabela, Philippines

***Second Place Teacher Coach** (News Writing- Filipino), 2016 Division Schools Press Conference, Roxas, Isabela, Philippines

***Ninth Place Teacher Coach** (Copy Reading and Headline Writing- English), 2016 Division Schools Press Conference, Roxas, Isabela, Philippines

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

***Tenth Place Teacher Coach** (Copy Reading and Headline Writing- Filipino), 2016 Division Schools Press Conference, Roxas, Isabela, Philippines

***Champion Teacher Coach** (On the Spot Essay Writing), 2015 District Science Club Month Celebration, Aurora, Isabela, Philippines

***Champion Teacher Coach** (Science Skills Olympics), 2015 District Science Club Month Celebration, Aurora, Isabela, Philippines

***Champion Teacher Coach** (Story Telling), 2015 District Contest in Literary and Cultural Presentation, Aurora, Isabela, Philippines

***Third Runner-up Teacher Coach** (Story Telling), 2015 Area Library Hub Literary and Cultural Presentations (Chamber Theater, Jazz Chants and Story Telling), Mallig, Isabela, Philippines

***Third Place Teacher Coach** (Copyreading and Headline Writing- English), 2015 District Schools Press Conference, Aurora, Isabela, Philippines

***Third Place Teacher Coach** (Copyreading and Headline Writing- Filipino), 2015 District Schools Press Conference, Aurora, Isabela, Philippines

***Fourth Place Teacher Coach** (News Writing- Filipino), 2015 District Schools Press Conference, Aurora, Isabela, Philippines

***Champion Teacher Coach** (Copyreading and Headline Writing- English), 2015 Division Schools Press Conference, Aurora, Isabela, Philippines

***9th Place Teacher Coach** (Copyreading and Headline Writing- Filipino), 2015 Division Schools Press Conference, Aurora, Isabela, Philippines

***Champion Teacher Coach** (Essay Writing-English), 2014 Teachers' Month Celebration, Aurora, Isabela, Philippines

***Champion Teacher Coach** (Oral Reading- English), 2014 District Story Retelling and Oral Reading for Grades IV and V, Aurora, Isabela, Philippines

***Second Place Teacher Coach** (Oral Reading- English), Area 2 Read-A-Thon Contest, Benito Soliven, Isabela, Philippines

***First Runner-up Teacher Coach** (Oral Reading- Filipino), 2014 District Story Retelling and Oral Reading for Grades IV and V, Aurora, Isabela, Philippines

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

TRAININGS/SEMINARS ATTENDED

- * December 6-10, 2021 Institute for Multi-Sensory Education's Intermediate Virtual IMSE Orton-Gillingham Training
NM, USA
- * October 18, 2021 SOS Signs of Suicide Faculty & Staff Knowledge Check
NM, USA
- * March 3, 4, & 6, 2021 Computer Science Fundamental Workshops
NM, USA
- * August 4, 2021 Bloodborne Pathogen Exposure Prevention
NM, USA
- * August 4, 2021 Child Abuse: Identification & Intervention
NM, USA
- * August 5, 2021 Coronavirus 105- Cleaning & Disinfecting Course
NM, USA
- * August 5, 2021 Health Emergencies: Asthma Awareness
NM, USA
- * August 5, 2021 Student Drug & Alcohol Abuse
NM, USA
- * August 5, 2021 Title IX Compliance Overview
NM, USA
- * August 5, 2021 Playground Supervision
NM, USA
- * August 5, 2021 Sexual Harassment: Staff to Staff Full Course
NM, USA
- * August 5, 2021 Sexual Misconduct: Staff-to-Student
NM, USA

**PHILIPPINE NORMAL UNIVERSITY**

The National Center for Teacher Education

- * July 16, 2019 Schaffer Writing
NM, USA
- * June 19, 2019 Insight to Behavior
NM, USA
- * June 19, 2019 Children with Autism
NM, USA
- * June 12 & 13, 2019 Guided Reading
NM, USA
- * June 10-11, 2019 Whole Brain Teaching National Conference
NM, USA
- * June 5, 2019 Language Power
NM, USA
- * May 29, 2019 CHAMPS Training
NM, USA
- * October 2017 Seminar on Capacity Building for Teachers on Campus
Journalism (Philippines)
- *September 2017 Division Training CUM Seminar-Writeshop for
Elementary and Secondary Campus Paper Advisers
Aurora, Isabela, Philippines
- * May 2017 Summer Camp for Campus Journalism
Philippines
- *May 2017 District Echo-Seminar Workshop on Developmentally
Appropriate Practices in the Early Language Literacy
and Numeracy Program
Philippines
- *December 2016 Intensive Seminar-Workshop for RSPC Qualifiers
Philippines


PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

- *May 2016 District Training Workshop on Inquiry-Based Approach in Teaching Science (Philippines)
- * April 2016 Grade 5 Regional Mass Training of Teachers (MTOT) for the K to 12 Basic Education Program (BEP) Philippines
- * December 2015 Intensive Seminar-Workshop for RSPC Qualifiers Philippines
- * September 2015 Education Stakeholders Conference Cum National Leadership Training (Batch 2) Baguio City, Philippines
- * July 2015 District-Based Journalism Training Workshop Philippines

ELIGIBILITIES/LICENSES/CERTIFICATIONS

Level Three-A Instructional Leader
K-8 Elementary License
State of New Mexico, USA

2008 Licensure Examination for Teachers (LET)
Philippines

PUBLISHED/UNPUBLISHED WORK/S

*School Managers' Leadership Styles and Teacher Performance (September 2015). *Asia Pacific Journal of Research*, 1(31), p. 84.

*21st Century School Managers' Leadership Styles: Its implication on Institutions' Performance

PROFESSIONAL MEMBERSHIPS

- *Member, Filipino Teachers in the USA
- *Member, Aurora School Teachers' Association (ASTA)
- *Member, Isabela School Teachers' Association (ISTA)