



ASSESSING THE COMPETENCE AND PRACTICES OF INFORMATION COMMUNICATION TECHNOLOGY (ICT) COORDINATORS IN ELEMENTARY SCHOOLS: A MIXED-METHODS ANALYSIS DEVELOPING A CAPACITY ENHANCEMENT PLAN

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Abstract: *This research employed a mixed method, sequential explanatory design, to determine the following: the profile of ICT Coordinators; the Degree of ICT Coordinators' duties and responsibilities attained; the Degree of school heads' satisfaction with the ICT Coordinators' performance; the problems the ICT Coordinators faced in carrying out their duties; and the significant relationship between the ICT Coordinators' level of ICT Coordinators' duties and responsibilities attained across their profile variables. The survey was conducted in 100 primary schools across the Western Part of Pangasinan Philippines, specifically in the 1st Congressional District. One hundred (100) ICT Coordinators from Pangasinan's first congressional District's elementary schools participated in the study during the academic year 2023–2024. The survey questionnaires were the primary tool used by the researchers in this study to get the needed data from the ICT Coordinators. The researcher also conducted interviews to learn more about the difficulties ICT Coordinators encounter in carrying out their tasks. The collected data were coded, totaled, tabulated, and statistically treated using average weighted mean, Pearson r, Product Moment of Correlation, frequency counts, T-Test and Anova for analysis and interpretation. ICT Coordinators realize how much time and effort they have put into their roles; thus, they confidently complete their assignments better than expected.*

Keywords: *ICT Coordinator, ICT, Duties and Responsibilities, Barriers to ICT, Pangasinan, Philippines*

INTRODUCTION

The field of Information and Communication Technology (ICT) was founded in the literature as a valuable instrument to enhance pupils' learning, improving institutional management and instruction (Kazu & Yavulzalp, (2008); Kirschner, P., & Woperies, I. G. (2003). However, the study discovered that the instruction of ICT Coordinators must be improved and is currently insufficient. Logically, it differs depending on the individual and the circumstances; as stated by Cleere (2009), there are vast variations in the school ICT coordinator's competency level between several schools in various towns, cities, or even nations. Technology is a rapidly expanding field. Hence, an ICT Coordinator's skill is essential for effectively using ICT in the classroom. Even though much research has been done on ICT in classrooms, fewer studies focusing on ICT Coordinators have been conducted. This study examined how capable ICT Coordinators were in completing their regular responsibilities, their fit for the role, and their overall perception of their proficiency level. In the realm of cutting-edge technology today, the work of an ICT Coordinator is highly pertinent. The Education Department and Science (DES) in Ireland carried out a survey regarding the ICT integration in elementary and secondary education. The poll was not found on the proficiency level. However, it looked at how ICT was incorporated into teaching, which the researcher refers to as the degree of proficiency in this enormous field. The British Educational Communications and Technology study, which is more recent, Agency, 2002), shows that the most common roles in the current practice The ICT coordinator is responsible for providing technical assistance and assisting youngsters in the process of learning. In this setting, the tasks completed by the ICT coordinator oversee the development of ICT skills, teaching the ICT curriculum, overseeing hardware, providing technical assistance, and conducting instruction.



Furthermore, the British Agency for Educational Communications and Technology (2002) highlights the need for ICT leadership in promoting appropriate ICT use. Kirschner emphasized the key ICT competencies that educators must possess; Woperies (2003) to incorporate proficiency in using ICT for personal purposes; mastery of several ICT-based educational paradigms; proficiency in utilizing ICT as mental tools being proficiency in using ICT as a teaching tool, proficiency in understanding a variety of evaluation paradigms, including the utilization of ICT; as well as proficiency with comprehending the policy aspects of ICT use for instructing and acquiring knowledge. The effective use of ICT in education is primarily dependent on the instructors' proficiency with the use of contemporary technologies in classroom learning. Therefore, both newly qualified teachers and veteran educators must be capable of effectively utilizing ICT for instruction (Kyriakidou, Chrisostomou, & Bank, 2000). Switzerland-based International Communications Union (ITU) among the ASEAN nations on the ICT Development Index (IDI), Singapore placed number 18, with Brunei (53rd), Malaysia (63rd), and Thailand (78th) following Vietnam (108th), Indonesia (111th), the Philippines (101st), and Cambodia (128th), According to the Measuring Information Society Report, Laos (139th) and Myanmar (135th) 2017's Volume 1, page 31). According to Pinprayong (2016), who referenced ASEAN (2011), ASEAN nations intended to increase their ICT workforce and infrastructure for economic change, creativity, participation and empowerment of individuals, infrastructure development, building human capital, and bridging the digital split to produce four main results: 1) ICT as an ASEAN growth driver nations, 2) acknowledgment of ASEAN as a major international ICT hub, and 3) improved quality of life for ASEAN citizens, and 4) a contribution to ASEAN unity. According to recent research, most instructors in the Philippines have basic ICT expertise, which is still lacking (Las Johansen et al., 2017).

According to Buabeng-Andoh (2012), a teacher's ability to successfully integrate ICT in the classroom fosters professional growth. The significance of the study's presentation of ICT competency identifies Thailand's ICT preparedness for the ASEAN economic community. Having proficiency in ICT and facilitating the expansion of the ICT industry will help develop human capital. As a result, it will start to assist the other economic sectors in growing. To support the nation's competitiveness, ICT knowledge and abilities are required (Wongwuttivat, 2016).

FRAMEWORK

A key feature of Strudler and Gall's (1988) 1998 research study is that in the first place, the ICT supervisor oversees training the teachers, giving them technical help, planning the school's computer program for learning, and helping and energizing the teachers. Two years later, in 1985, Moursund painted a similar picture of the post of ICT Coordinator. He listed characteristics that must be possessed by the head of an ICT unit, such as a solid commitment to education and strong managerial abilities, an in-depth understanding of the educational system (including effective teaching techniques and the dynamics of educational change), strong communication abilities, particularly relating to cautious listening; technical knowledge of computer technology and educational technology which includes conception of learning about the floor and computer instructional technologies inside the educational area. Moursund focuses on administrative and instructional abilities, and there are also slight hints of practical expertness. Mostly, the two studies complement each other and suggest that the ICT Coordinator oversees many diverse challenges involving high-level expertise. Hancock 2007 also gives definitions of the activities of the ICT coordinator: as near, for a member of the administrative team; a mentor of students, as a head; and a role model for the teachers. Hancock, by some means, the definition of the role of the educational coordinator markedly lacks the provision of



technical help. A study later by Strudler on the 1994 research from 1988 by Strudler and Gall revealed that technology coordinators in schools may aid teachers in circumventing several impediments in combining technology into teaching.

Second, Tondeur, van Keer, van Braak, and Valcke found that the provision of additional experienced personnel to supervise and support the deployment of ICT was second-equal on their list of needs. The ICT coordinator ranked as the second priority in this study, with 29.6 percent of all reports referring to the ICT coordinator. As ICT coordinators perceive themselves primarily as facilitators, principals want to depend on them for guidance during integration. With that said, it is astonishing that several administrators in that study believed that locating a single educator to act as a "chat chief" and continuing the innovation project to succeed without ICT coordination. Here is a noteworthy citation from the case study of a principal administrator in the work of Tondeur, van Keer, van Braak, and Valcke: "Our school had an awesome ICT coordinator the previous year; his departure has signaled a lack of a focus on integrating ICT."

OBJECTIVES OF THE STUDY

The objective of this study is to determine the following: the profile of ICT Coordinators; the Degree of ICT Coordinators' duties and responsibilities attained; the Degree of school heads' satisfaction with the ICT Coordinators' performance; the problems the ICT Coordinators faced in carrying out their duties; and the significant relationship between the ICT Coordinators' level of ICT Coordinators' duties and responsibilities attained across their profile variables.

METHODOLOGY

Research Design

This research employed a mixed-methods, sequential explanatory approach. Mixed-methods research combines the benefits of qualitative and quantitative approaches.

Research Site

The survey was conducted in 100 primary schools across the Western Part of Pangasinan, Philippines specifically in the 1st Congressional District. The district comprises the City of Alaminos and the nearby municipalities of Agno, Anda, Bani, Bolinao, Burgos, Dasol, Infanta, Mabini, and Sual.

Participants

One hundred ICT Coordinators from Pangasinan's first congressional District's elementary schools participated in the study during the academic year 2023–2024. Information was gathered during January and February of 2024 using modified questionnaires.

Instrumentation

The survey questionnaires were the primary instruments used by the researchers in this study to collect the needed data from the ICT Coordinators. The two questionnaires are as follows: a. ICT Coordinators and b. School Heads. On the other hand, the ICT Coordinators' questionnaire was divided into three sections: the demographic profile, Degree of ICT literacy, and duty and responsibility completion. The following items are reviewed: age, sex, college course completed, educational attainment, level of training in ICT-related attended, length of time worked as the ICT coordinator,



and quantity of auxiliary tasks performed. The first section of the questionnaire requires the participants to check the appropriate box in each column. The Degree of ICT Coordinators' ICT literacy was the subject of the second part. The third section evaluated their performance in ICT projects and programs, partnerships and stakeholder management, system and school infrastructure management, policy and standard implementation, monitoring and assessment, technical support to schools, and program and project implementation.

The researcher asked for the division chiefs' approval to start the data gathering formally. The researcher explained to the respondents/participants that they would voluntarily participate and have the right to withdraw from the interview. Since the researcher used an online platform, participants were informed that.

The research was conducted in a government institution. Thus, privacy and confidentiality are treated as essential aspects.

Data Collection

The investigation had gone through multiple phases for the researchers. Initially, the researcher created an altered survey that her advisor and the panelists were assessed. The form and a few sections of the questionnaire were subject to criticism and commentary from the assessors.

Data Analysis

The collected data were coded, totaled, and tabulated for analysis and interpretation. They were then run through statistical procedures. The frequency and percentage, average weighted mean, Pearson r Correlation, T-Test and annova were used in this study for analysis and interpretation.

RESULTS AND DISCUSSION

1. Profile of the Elementary Teachers

Age

The table shows that 15 or 15.0% of the respondents are 20-30 years old, while 58 or 58.0% belong to 31-40 years of age. Moreover, 27 or 27.0% are 41-50 years of age. The data shows that most respondents are 30-40 years old and above. The literature study found no evidence that students' ages posed a problem when using ICT in the classroom. Although this study shows that 70% of the leaders who took part were over 40, this may have made them less enthusiastic about incorporating ICT.

According to research by Sivasakthi and Muthumanickam (2012), there is no significant difference in teacher effectiveness based on age. This holds true regardless of whether a teacher is young, mature, or older; that is, whether they are 30 years old or younger, 30-40 years old, or older than 40 years old. For instance, (Gerritsen et al., 2016) found that student performance is notably influenced by the experience of their teachers, particularly in the early grades, where more experienced educators yield higher student achievement results. Teachers in the middle-aged range of 36 to 48 years old had a greater impact on student achievement than instructors in the younger and older age groups, according to research by Alufohai and Ibhafidon (2015) that used a proportionate sampling technique on a subset of public senior secondary schools in Edo State, Nigeria. Additionally, they discovered that instructors between the ages of 21 and 34 were more successful and generated better student scores compared to professors aged 49 and above.

Sex

Most of the ICT Coordinators were male with a frequency of 73 percent while 27 percent were females. This finding means that females tend to be less interested in computers than males and use



them less often in their spare time (Schaumburg, 2001). In addition, the three computer-related occupations (computer scientists, computer engineers and system analysts, and computer science and engineering) are the top career choices for males (Derbyshire, 2003). Bebetos and Antoniou's (2008) and Kadel's (2005) studies also found that females have negative attitudes towards computers; as a result, they are often less computer literate than males. Sefyrin (2005) asserted that competence in ICT could be seen as a question of interest in ICT, where males are more interested in ICT than females.

Table 1
Profile of the I.C.T. Coordinators

Variable	Frequency	Variable
Age		
20-30 years	15	15
31-40 years	58	58
41-50 years	27	27
Total	100	100
Sex		
	Frequency	Variable
Male	73	73
Female	27	27
Total	100	100
Number of ICT Training		
	Frequency	Variable
0	6	6
1-3	57	57
5-9	16	16
10 & above	21	21
Total	100	100
Ancillary		
	Frequency	Variable
0-2	57	57
3-5	43	43
Years in Service		
0-2	20	20
3-5	33	33
6-9	22	22
10 & onwards	25	25
Total	100	100



Highest Educational Attainment	Frequency	Variable
Doctorate Graduate	15	15
Masters Graduate	85	85
Bachelors Graduate	0	0
Total	100	100

Trainings Attended

Based on the I.C.T. training received by the respondents, six or six percent of the 100 teacher responders did not receive any prior I.C.T. training; fifty-seven or 57%, who is more than half of the respondents, attended one to three times, and only sixteen or 16%, also making sixteen percent, attended more than ten I.C.T. training sessions. Hence, the data indicates that most I.C.T. coordinators for primary schools in the 1st Pangasinan District participated in multiple I.C.T. training seminars. From this, the teachers can use DepEd's in-service training to improve their professional growth and pedagogy and implement their duties as I.C.T. coordinators. This shows that the respondents to these studies place a high value on training and seminars, as they would help enhance their performance and acquire new information and communications technology. Most schools require teachers to use professional development training modalities during the academic year. These meetings differ significantly between districts and occasionally even between schools in the same district. As reported by Echevarria, J., Frey, N., & Fisher, D. (2015), before conducting practical professional development, the first step is to conduct a needs assessment. Kooiman, B. J., Kim, H., Li, W., & Wesolek, M. (2013) argue that traditional one-topic professional development for the whole staff of a school is generally not helpful; According to Fisher et al. 2018, professional training is required in all schools to ensure that a common pedagogical language is developed across the curriculum and grade levels. Borko (2014) added that professional development is necessary because it ensures that all teachers in a school district are reading from the same script and also enhancing the quality of the class and, in turn, the school. Rafique's (2022) study provides insights into the technological aspects of professional development. It notes that for teachers who initially lack technological skills, engaging in technology-mediated training boosts their confidence, fostering a readiness to adopt new teaching tools and methods.

Ancillary

The chart also shows that 43 or 43.0% of I.C.T. Coordinators have 3-5 ancillary tasks, and 57% have 0-2 ancillary works. That is to say that in addition to the role of the I.C.T. Coordinators, they still perform other tasks assigned by the principals of schools. They are also able to manage their time competently so they can perform the necessary functions. Kennewel, Parkinson's, and Tanner (2002) claim that I.C.T. Coordinators have diverse functions could justify this conclusion. In particular, only a few places were determined to be implemented in practice. The demand for the I.C.T. coordinator is very high because of some difficulties. Only some of their functions are performed. However, it is still difficult to say what work the I.C.T. coordinators do in practice today.

Years in Service

In terms of years in service, there are 20, or 20.0%, of the respondents, have worked as an I.C.T. coordinator for 0-2 years; 33, or 33.0%, for 3-5 years; 22, or 22.0%, and 25, or 25.0% respectively 6 to 9 years, ten years and above. As these positions are less than one's specialization and



are only temporarily given, it can be concluded that most respondents need more experience in carrying out the duties of an I.C.T. coordinator. When conducting research, Kartini, Badariah, and Ahamad (2010) found more knowledgeable teachers with more than six years of relevant experience and less talented teachers with less than six years with years of experience as an I.C.T. coordinator. As for classroom management, Unal, Zafer, and Aslihan Unal. (2024), for example, found that teachers with more than six years of experience had significantly different attitudes towards teachers with fewer years of experience. They seemed more controlled in classrooms and more pleasant with students and making decisions. According to Putman (2012), teachers' self-efficacy in initiating with students and managing the classroom grows with the years taught.

Highest Educational Attainment

The table reveals that in terms of educational attainment, most respondents have graduated with their master's degree, which has the highest frequency of 85 with a percentage of 85.0%. In contrast, 15 of the ICT coordinators have doctorate degrees. No ICT Coordinator has any postgraduate studies. In this case, the ICT Coordinators enrolled in graduate programs to further their careers after being hired by the Department of Education.

A teacher must have at least a bachelor's degree in order to be considered highly qualified according to U.S. Department of Education (2004). In some states and school districts the requirements are even more rigorous and teachers are even required to have a master's degree to become fully certified according to Huang & Moon (2009). Yet another factor in a teacher's education level is that some school systems require teachers to gain an advanced degree after a given number of years of employment based on the study of Goldhaber & Brewer (2000). Although many educators are pushed towards higher education levels, research on teacher education does not provide conclusive results on whether the attainment of higher levels impacts student achievement as concluded by Goldhaber & Brewer (2016).

2. Level of Attainment of Duties and Responsibilities of the ICT Coordinators

The study reveals that the I.C.T. Coordinators have the highest percentage in the ICT programs and projects; better than expected in system and school infrastructure management; better than expected in partnership and stakeholder management, in policies and standards implementation as well as in monitoring and evaluation. The outcome can also be supported by the assertion made by Avido v. Ungar et al. in their "Hierarchy of Elements of Knowledge Leading Roles of I.C.T. Coordinators," in which they are required to find other stakeholders who can assist them in their roles. Information and Communication Technology (I.C.T.) coordinators depend on many roles requiring extensive experience in the two researchers' studies. Teachers will always benefit from ongoing programs to update their knowledge of computer system perspectives in education. A. Devolder et al (2012). talked of the I.C.T. coordinator being pushed into allocating duties that can be counted in figures and, because of time, nothing is accomplished – not even a single percent achieved. In a careful assessment of the impact of Information Communication Technologies on education, Kozma (2005) identified three missing categories. Student outcomes: doing so, better grades, and their capacity to learn new skills to make a livelihood in a shifting business community.

Table 2

Level of Attainment of the Duties and Responsibilities of the I.C.T. Coordinators

Duties and Responsibilities of the I.C.T. Coordinators in Terms of:	Mean	Qualifying Description
1. System and School Infrastructure Management	3.8471	Better than expected
2. I.C.T. Programs and Projects	4.4800	Much more than Expected
3. Partnership and Stakeholder Management	3.9171	Better than expected
4. Policies and Standards Implementation	3.9420	Better than expected
5. Monitoring and Evaluation	3.8883	Better than expected
Average Weighted Mean	4.0149	Much more than Expected

3. Significant Relationship Between the Level of Attainment of the Duties and Responsibilities of ICT Coordinators Across their Profile Variables

Significant differences exist in the degree of fulfillment of duties and obligations among the Information Communication Technology teachers when classified by the duration of service $F=10.400$, level of I.C.T. attended training $F=3.486$. The null hypothesis is rejected since every computed value is significant at an alpha of 5%. However, there are no significant differences in the degree of fulfillment of duties and obligations across the Information Communication Technology teachers when based on one's age, sex, the frequency of carrying out the complementary duties, and the highest level of education. Therefore, the null hypothesis is retained at an alpha of 5%. This implies that university training effectively constructs the proficiency of SWTs to perform duties. The finding agrees with Moffatt's (2021) observation that education assists people in developing social occupation competence. This explanation relates well to Borghans, Green, and Mayhew's (2021) definition of competence as the formal education levels achieved by the employees. Education plays a significant role in creating and nurturing this type of talent, so education is used to measure a worker's degree of occupational competence. Abdulrahman's study also confirmed this statement when it was established that educators must always aspire to devise novel and innovative methods for incorporating computers into the classroom to exploit the opportunities they present. I.C.T. According to Lai Pratt (2004), it can be meaningfully integrated into schools through the valuable foundation of teachers with good attitudes toward I.C.T. and personal and occupational direction.

Table 3

Significant Variations in the Level of Attainment of Duties and Responsibilities When Grouped According to Profile Variables

Grouping Variables	F-Test / t-Test	p-Value	Decision at 5% alpha
Age	$F = 0.332$	0.718	Accept H_0 (Not Significant)
Sex	$t = 0.863$	0.391	Accept H_0 (Not Significant)



Course Graduated	t = 4.484	0.000	Reject Ho (Significant)
Level of ICT-Related Training	F = 3.486	0.019	Reject Ho (Significant)
Number of Ancillary Functions	t = 1.226	0.223	Accept Ho (Not Significant)
Length of Service	F = 10.400	0.000	Reject Ho (Significant)
Highest Educational Attainment	t = 0.398	0.695	Accept Ho (Not Significant)

4. Problems Encountered by the ICT Coordinators in Managing their Function

This section considers, among other things, how the coordinators attempted to respond to these challenges. As they execute, the coordinators repeatedly experience both technological and instructional issues. The interviewees emphasized the requirement for the correct instructors to be ambitious and work in facilities for computers to be thoroughly integrated into the classroom. Moreover, they must address pedagogical issues such as handling teachers who dislike their everyday work. Furthermore, from the poll, half of the coordinators suggested that they felt they required several additional skills for the position, and many of them just filled in when called upon, lacking full power or responsibility. The Department of Education and the Philippine government shall immediately react, comments the study's author. Schools shall be given additional funding to support coordinators and teachers in attending a program about information and communication technology. Coordinators shall be provided enough time to drive and share their passion with other educators. This might give them the impetus to explore how C.T. can be utilized in all their areas of expertise. Although the government funds school equipment, including interactive whiteboards, ceiling-mounted projectors, and teachers' computers, C.T. coordinators may need to be paid even more. The government will do so to help this infrastructure expand.

5. Significant Relationship Between the Level of Attainment of the Duties and Responsibilities of the ICT Coordinators and Their Level of ICT Literacy

The study shows that the correlation between the level of attainment of the duties and responsibilities of the information and communications technology (ICT) coordinators and their level of ICT literacy is .748** with a significance of .000. The null hypothesis is therefore rejected at the .05 level of significance. This means that there is a significant relationship between the level of attainment of the duties and responsibilities of the information and communications technology (ICT) coordinators and their level of ICT literacy. The very high positive correlation denotes a direct proportion, which can be interpreted that as the ICT literacy of teachers increases, their attainment of the duties and responsibilities of information and communications technology (ICT) increases.

Table 4

Significant Relationship Between the Level of Attainment of The Duties and Responsibilities of Information and Communications Technology (I.C.T.) Coordinators and Their Level of I.C.T. Literacy

Variables	Level Of Attainment Of the Duties And Responsibilities of the Information And Communications Technology (I.C.T.)	
	CORRELATION	SIGNIFICANCE



CONCLUSION

ICT coordinators were mediocre at operating technology and notions, social and ethical, and instructional realms, however, as the outcome indicates, less proficient in the professional domain. Their socioeconomic backgrounds are not a trustworthy foundation for determining their degree of proficiency outside of educational achievement that demonstrates a strong influence. Comparison findings on the degree of proficiency of ICT Coordinators in comparison to their school's evaluation administrators found that ICT Coordinators of Pangasinan I are very proficient in technology operations and concepts.

There are no comparable studies on ICT that have been carried out in the Philippines. organizer. In the Philippines, the title "ICT Coordinator" is merely a designation and not a position included in the Personnel Plantilla and Personal Services Itemization. This simply indicates that the position in question lacks a set job description. To effectively assess the level of competence of ICT coordinators, their roles, duties, and functions must be properly defined based on their job description in the Position Description Form that every permanent government official obtained upon appointment for a permanent position. Consequently, the ICT position instead of continuing to serve as a designation, the coordinator should be a part of the Personnel Plantilla as a new regular item role.

TRANSLATIONAL RESEARCH

The ideal way to implement the study's conclusions might be to conduct seminars and training sessions to keep ICT Coordinators up to date on the newest methods and trends in education. Similarly, the Department of Education might create a policy outlining the responsibilities and roles of ICT coordinators in classrooms.

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