

# Extent of Information and Communication Technology (ICT) Utilization among Grade 6 Teachers in the Implementation of Distance Learning

Ma. Anie L. Faustino

Graduate School, Eastern Samar State University, Borongan City, Eastern Samar, Philippines

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## ABSTRACT

This research study delved into the comprehensive examination of the utilization of Information and Communication Technology (ICT) among Grade 6 teachers in Taft and Sulat Districts, focusing on its role in facilitating Distance Learning during the COVID-19 pandemic. Employing an adapted survey questionnaire distributed through Google Forms, the study aimed to gather both demographic profiles and insights into the extent of ICT utilization by Grade 6 teachers. The research findings, based on a Grand Mean of 3.81, unequivocally indicated a high level of ICT integration among Grade 6 teachers. The correlation analysis, conducted at a significance level of 0.05, identified specific demographic factors—educational attainment, length of service, and position—as influential contributors to the observed extent of ICT use. Notably, these factors underscore the nuanced relationship between educators' backgrounds and their embrace of technology in the instructional process. Building upon these results, the researcher recommends further exploration through additional tests, including the incorporation of qualitative data to triangulate findings. Additionally, expanding the investigation to encompass other Key Stages beyond Grade 6 is proposed to offer a more holistic understanding of ICT integration across various educational levels. This study contributes valuable insights to the ongoing discourse on technology's role in education, emphasizing the need for nuanced investigations into the factors shaping teachers' engagement with ICT during the pandemic and beyond.

**Keywords:** ICT Use, COVID-19, Distance learning

## INTRODUCTION

Undoubtedly, the COVID-19 pandemic has wrought widespread upheaval across the social and economic spectrum, leaving no facet untouched, including the realm of education. The educational sector, in particular, has undergone a substantial transformation, witnessing a profound impact on the learning process. In a bid to curb the pandemic's spread, stringent measures, aligning with the recommendations of global health authorities such as the World Health Organization (WHO) and the United States Centers for Disease Control and Prevention (CDC), mandated the limitation or cancellation of gatherings exceeding ten individuals—imposing the imperative of 'social distancing.' Consequently, nations worldwide responded by shuttering educational institutions and implementing remote learning initiatives, a departure from the conventional educational paradigm (World Bank, 2020).

The Philippines, in line with global trends, took decisive action, ordering the closure of all schools and universities on March 12, 2020, as part of comprehensive disease control measures. In response, the Department of Education (DepEd) emphasized the paramount need to persist in serving students. Echoing

this sentiment, DepEd Secretary Briones asserted, “Education cannot wait,” a sentiment reiterated by then DepEd Region 8 Regional Director Ramir Uytico, who proclaimed, “Education should be the last one to surrender.” Despite the unprecedented chaos prevailing globally, the department rose to the occasion, implementing the Basic Education – Learning Continuity Plan (BE-LCP). This initiative ensured an uninterrupted learning process through diverse Distance Learning (DL) modalities.

Under the BE-LCP, DepEd is committed to sustaining learning opportunities through suitable modalities, striving to maintain smooth progress to contextualization and localization (Picardal & Capito, 2023). Amidst these sudden disruptions, lacking a clear resolution, significant challenges surfaced for educators, particularly concerning their competence in utilizing Information and Communication Technology (ICT) and, consequently, impacting learners. The adoption of blended learning is due amidst the pandemic, and it is mandated for employees to transition from traditional classroom settings to a heightened reliance on technology, intensifying the students’ level of performance, anxiety, and distance of learning (Anabo, 2023).

While the Philippines may not boast the technological advancement seen in countries like China, Korea, the USA, UK, Australia, or other European nations, strides have been made through initiatives such as the DepEd Computerization Program (DCP), inaugurated in 2010. Legalized by DepEd Order No. 78 s. 2010, the DCP aimed to equip public schools with appropriate technologies to enhance the teaching-learning process and address 21st-century challenges. This program sought to alleviate the computer backlog in public schools, providing hardware, software, and training on troubleshooting. Collaborative efforts between government agencies and the private sector, facilitated the provision of at least one computer laboratory to 5,409 public secondary schools, each equipped with 10-20 computer units and peripherals.

As per TeacherPh.com, the country presently utilizes 39,052 E-Classroom packages for computer classes, fostering Digital Literacy Skills among learners. Moreover, 45,869 classrooms equipped with televisions, projectors, and laptops support ICT Assisted Teaching, supplemented by an additional 36,676 packages in the fiscal year 2020. In Eastern Samar Division, however, ICT integration in the learning process is limited, mainly serving as a supplement to traditional classroom instruction. Recognizing this disparity, the researcher seeks to explore the extent of ICT use in blended learning implementation. Hence, this study delves into the assessment of ICT utilization amid blended learning in the New Normal at Taft District and Sulat District, probing into the schools’ profiles as they adapt to this modality and exploring its implications on the academic performance of learners in these districts.

## Statement of the Problem

The study aimed to explore the extent of use of ICT in the implementation of blended learning and learners’ academic performance of learners in selected northern municipalities of Eastern Samar which served as a basis for crafting a contextualized learning continuity plan.

Specifically, the following were the questions answered by this study:

1. What is the demographic profile of Grade 6 Teachers in terms of:
  - Age
  - Sex
  - Civil status
  - Educational attainment (major specialization)
  - Length of service
  - Position
  - Training attended related to ICT
2. What is the extent of use of ICT in Modular Distance Learning in terms of:
  - Computer self-efficacy

- Collegial collaboration
  - Availability of resources
  - Usefulness of ICT
  - Ease of use
  - Frequency of ICT use
3. Is there a significant relationship between the demographic profile and extent of use of ICT in Modular Distance Learning of participants?

## **METHODOLOGY**

### **Research Design**

This study employed a descriptive-correlational design to test the correlation of variables (Creswell, 2015). This study tested the extent of ICT utilization and explored its relation to the profiles of Grade 6 teachers in the districts of the southern municipalities of Eastern Samar in the implementation of distance learning during the COVID-19 pandemic.

### **Locale of the Study**

This research was conducted at identified northern municipalities of Eastern Samar during the Fourth Grading Period of School Year 2021-2022. The districts of Taft and Sulat were the involved municipalities by convenience. The identified School Districts were among the 27 districts of the Schools Division of Eastern Samar that are currently implementing distance learning. Specifically, Modular distance learning is the modality of the districts based on the BE-LCP of schools in the districts where SLMs are given to learners, augmented with video lessons crafted by teachers.

### **Participants of the Study**

This study employed complete enumeration as a sampling technique in this study wherein all Grade 6 Teachers of Taft and Sulat Districts were included as participants. Complete enumeration was deemed appropriate considering the relatively small number of targeted populations.

### **Research Instrument**

The instrument that was used in this study was an adapted online questionnaire from the School Counselor Acceptance of Technology Instrument (SCATI). The items used in this questionnaire were adapted to the context of the teaching process during the COVID-19 pandemic. The questionnaire was a two-part self-report questionnaire intended for Grade 6 teachers which assessed the extent of utilization of ICT in the learning process during this pandemic.

First part of the material collected the profile of the school (Category, proximity of school to town, financial capability of school, availability of ICT resources and training offered and conducted/facilitated by the school on ICT for teachers, accessibility and availability of resources). The second part of the material gathered information on the extent of use of ICT during the distance learning implementation as a learning modality of the district.

## **RESULTS AND DISCUSSION**

### **On Demographic Profiles of the Respondents**

Results of the conducted survey for the demographic profile of respondents are posted in Table 1 below. As

recorded in the table, the age of the respondents revealed a varied range with 31 to 40 years old having the biggest record of 45.45%. In the survey, the majority of the respondents were female Grade 6 teachers in the identified districts with a percentage of 89.09. This data on respondents' demographics particularly on sex conforms to the findings of Ahmad in 2019 where females have a higher interest in teaching elementary pupils and are more adaptive to teaching younger learners.

Also, in Table 1, the varied characteristics can be seen specifically in Civil Status in which 36 Grade 6 teachers, or 65.45 percent are married. Also, the result of the survey 49.09 percent of Grade 6 teachers surveyed are Master's Degree unit-earners. As to the teaching position a total of 32 or 58.18 percent are Teacher 1, 18.18 percent are Teacher 2, 21.82 are Teacher 3, and 1.82 percent are Master Teacher 1. It can also be gleaned from the table that the majority of the Grade 6 teachers have only 1-3 ICT-related training attended accounting for 63.64 percent.

Table 1. Frequency distribution of teachers in terms of demographic characteristics

Variables	Frequency (n=55)	Percentage
<b>Age</b>		
51 years old or older	3	1.82
41-50 years old	5	14.55
31-40 years	25	45.45
30 years and younger	21	38.18
<b>Sex</b>		
Male	7	10.91
Female	48	89.09
<b>Civil Status</b>		
Single	18	34.55
Married	37	65.45
<b>Educational Attainment</b>		
Master's Degree	6	7.27
Master's Degree Units	25	49.09
Bachelor's Degree	24	43.64

Length of Service		
40 years and above	4	1.82
30-39 years	5	1.82
20-29 years	8	21.82
10-19 years	38	74.51
Teaching Position		
Master Teacher I	1	1.82
Teacher III	12	21.82
Teacher II	10	18.18
Teacher I	32	58.18
Number of ICT-related Trainings Attended		
10 or more	4	7.27
7-9	3	5.45
4-6	13	23.64
1-3	35	63.64

Another part of the survey questionnaire collected responses on the extent of use of ICT in the identified school districts specifically on computer self-efficacy, collegial collaboration, availability of resources, usefulness of resources, usefulness of ICT, ease of use, and frequency of ICT use as in in the following tables.

As displayed in Table 2.1, teachers responded that computer self-efficacy is highly evident with an overall mean of 3.75 interpreted as Highly Evident. All of the indicators were answered by respondents to be highly evident in terms of self-efficacy.

Table 2.1. Assessment of computer self-efficacy

Indicators	Mean	Interpretation
I have the skills to use ICT teaching purposes.	3.82	Highly Evident
I can use ICT effectively in teaching during the pandemic.	3.73	Highly Evident
I am able to use ICT such as computers, zoom, google classroom and also other media for the benefit of teaching-learning process.	3.73	Highly Evident
I feel I have the working knowledge to use computer software in teaching.	3.67	Highly Evident
I feel confident in using applications and ICT technology as a tool for teaching.	3.80	Highly Evident
Overall Mean	3.75	Highly Evident

On the responses for collegial collaboration, Table 2.2 below shows a positive connection among Grade 6 teachers on ICT use during modular distance learning among Grade 6 teachers of the identified school districts with an overall mean of 3.93 interpreted as Highly Evident.

Table 2.2. Assessment of collegial collaboration

Indicators	Mean	Interpretation
I can work alone to create ICT-based learning resources	3.56	Highly Evident
I collaborated with colleagues to develop ICT-based learning materials.	3.91	Highly Evident
I ask from my colleagues on things I am not adept on ICT.	4.13	Highly Evident
My colleagues are readily available to help everyone in using software in teaching.	4.04	Highly Evident
We eagerly discuss and update ourselves on the uses of software in teaching.	4.00	Highly Evident
Overall Mean	3.93	Highly Evident

As seen in Table 2.3, ICT resources during the implementation of modular distance learning were moderately evident with an overall mean of 3.22. From the five indicators on ICT resources, only 3 were highly evident which include having enough time to prepare ICT-based learning materials, adequate guides and references to develop ICT-based learning materials, and sufficient access to ICT facilities.

Table 2.3. Assessment of ICT resources

Indicators	Mean	Interpretation
I have enough time to prepare ICT-based learning materials during the pandemic.	3.56	Highly Evident
I have adequate guides and references to develop ICT based learning materials.	3.42	Highly Evident
I have sufficient technical support to maintain ICT resources.	3.20	Moderately Evident
I have sufficient access to ICT facilities like laptop, computers, mobile phones, internet, etc.	3.58	Highly Evident
There is reliable and strong internet connection in our school.	2.35	Less Evident
Overall Mean	3.22	Moderately Evident

When asked about the usefulness of ICT in teaching lessons during the pandemic, Grade 6 teachers responded that the usefulness of ICT was Highly Evident with an overall mean of 4.16 as seen in Table 2.4 below.

Table 2.4. Perceived usefulness of ICT

Indicators	Mean	Interpretation
ICT accelerates the completion of work related to teaching services.	4.09	Highly Evident
ICT increases my productivity for teaching-learning process services.	4.05	Highly Evident
Teaching-learning process can be further improved using ICT.	4.31	Moderately Evident
ICT boosts my confidence to do my tasks with ease.	4.20	Very Highly Evident
ICT allows me to lighten my daily tasks as a teacher.	4.13	Highly Evident
Overall Mean	4.16	Highly Evident

On the responses for perceived ease of use of ICT during the pandemic, Table 2.5 below shows that perceived ease of use of ICT resources during the pandemic was Highly Evident with an overall mean of 3.82.

Table 2.5. Perceived ease of use

Indicators	Mean	Interpretation
ICT is easy to use.	3.98	Highly Evident
ICT as a tool for teaching is easy to understand.	3.95	Highly Evident
ICT as a communication tool, I can easily access to parents/guardians.	3.54	Moderately Evident
Everyone can use ICT.	3.72	Very Highly Evident
ICT as communication tools are user friendly.	3.85	Highly Evident
Overall Mean	3.82	Highly Evident

Table 2.6 below shows that the frequency of ICT use during the implementation of distance learning among Grade 6 teachers was Highly Evident with an overall mean of 3.95.

Table 2.6. Frequency of ICT use

Indicators	Mean	Interpretation
I always use ICT in teaching during this pandemic.	3.33	Moderately Evident
I use ICT in updating work related tasks and reports.	4.18	Highly Evident
I use ICT to make school reports.	4.36	Moderately Evident
I use ICT for professional growth through webinars and online meetings.	4.35	Very Highly Evident
I use ICT to reach and communicate with parents/guardians during this pandemic.	3.55	Highly Evident
Overall Mean	3.95	Highly Evident

### Relationship between Demographic Profile and Extent of Use of ICT in Modular Distance Learning

This study also aimed to assess whether there lies a significant relationship between the two variables- demographic profile and the extent of use of ICT in modular distance learning during the pandemic. The researcher treated the indicators in the demographic profile as the independent variable while the extent of use of ICT in modular distance learning was treated as the dependent variable. In the careful analysis of the data, Pearson r, an inferential statistic was used. The inferential aspect of analysis used several tools to explore differences in variables under investigation. All tests were performed at a 0.05 level of significance and a 95% confidence interval.

As seen in Table 3, it can be gleaned that some aspects of the demographic profile were not significantly related to the extent of ICT use on modular distance learning specifically the age, sex, civil status, and ICT-related Trainings Attended with p-Values of 0.178, 0.183, 0.539 and 0.195 respectively. This finding implies that age, sex, and civil status are independent of how much Grade 6 teachers utilize ICT during modular distance learning during the pandemic.

The educational attainment, length of service, and position on the other hand were significantly related to the extent of ICT use during the modular distance learning with p-Values of 0.020, 0.037, and 0.019 respectively. Based on this statistical information, it can be said that educational attainment, teaching

position, and years in service show an influence on the extent of ICT use during modular distance learning. It implies that older teachers, with higher educational attainment and who have been in the service for a long period are keen on the use of instructional materials to improve the teaching-learning process such as the use of ICT and other tools.

Table 3. Relationship between demographic profile and extent of ICT use in Modular Distance Learning

Independent Variable	Dependent Variable	Index of Correlation	p-Value	Interpretation
Age	Extent of ICT use in Modular Distance Learning	-0.184	0.178	Not Significant
Sex		-0.182	0.183	Not Significant
Civil Status		-0.085	0.539	Not Significant
Educational Attainment		0.313	0.020	Significant
Length of Service		0.281	0.037	Significant
Position		0.316	0.019	Significant
ICT-related Trainings Attended		0.177	0.195	Not Significant

The result of the study implies that demographic factors have a varied influence on the extent of ICT use in teaching modular distance by Grade 6 teachers. Some demographic characteristics may be a factor in how much a teacher utilizes ICT and some other factors do not influence how much a teacher utilizes ICT in teaching. This finding is consistent with recent work showing that the use of technology in education can be associated with various factors not wholly dependent on the profiles of educators (Farhad, 2017, Jamer; F.T. & Anabo, R.O., 2023).

On the other hand, the general result opposes the conclusion made by Cheung and Kan, (2002). Their study posited that student demographics and success in online learning environments on pre-elementary teachers' deficient level of awareness in the use of computers and ICT has a direct negative impact on the implementation of distance learning. There was a significant relationship between the level of School Stakeholders' Engagement and the School performance of Public Elementary Schools in the Dolores district during modular distance learning (Rivera, 2023). The findings imply the need to regularly review schools' learning continuity plans, especially on the skills and technical know-how of the teachers and also on the reproduction of learning materials. Though the present study did not cover the challenges in this aspect, such as financial aspects and unavoidable weather conditions, schools must be prompted by all means to provide the best learning scenario at all times. With this, it can be said that this is a matter of limitation and future research consideration.

## CONCLUSIONS

After a thorough survey that assessed the extent of ICT use by Grade 6 teachers during the implementation of modular distance learning, the following conclusions are posted;

1. The demographic profiles of respondents showed varied characteristics in terms of age, current position, civil status, educational attainment, and years in service. The survey revealed that most of them were 31-40 years old, 89.09 71% were female, 65.45% were married, almost half of them were Master's Degree unit earners, the majority from the surveyed Grade 6 teachers were 10-19 years in service and 58.18 percent of them were Teacher I
2. The extent of use of ICT in modular distance learning was Highly Evident with a Grand Mean of 3.81.
3. On the test for a significant relationship between socio-demographic profile and extent of use of ICT



in modular distance learning, only educational attainment, length of service and position show influence on how much they use ICT during modular distance learning.

## RECOMMENDATIONS

The following are the recommendations that are advanced by the researcher from the conduct of this study:

1. Incorporate qualitative means of information gathering to triangulate data relative to this study such as the reasons for not using ICT and other intervening factors.
2. Broaden the scope of the study to other Key Stages other than Grade 6 to further validate the findings of this study.

## REFERENCES

1. Abdillah, H., Setyosari, P., Lasan, B.B., & Muslihati, M. (2020). The acceptance of school counselor in the use of ICT during school from home in the Covid-19 era. *Journal for the Education of Gifted Young Scientists*, 8(4), 1569-1582. DOI: <http://dx.doi.org/10.17478/804939>
2. Anabo, R.O. (2023). Correlates of mathematics performance of grade 9 learners in secondary schools division of Eastern Samar amidst pandemic. *EPR International Journal of Multidisciplinary Research (IJMR)*. 9(6). <https://doi.org/10.36713/epra13649>
3. Anderson, J. (2005). IT, e-learning and teacher development. *International Education Journal*, 5(5), 1-14
4. Babalola and Babalola, (2014) 20 countries' higher education intra-period digital pedagogy responses. *Journal of Applied Learning and Teaching*, 3(1), <https://doi.org/10.37074/jalt.2020.3.1.7>.
5. (2013). Advantages and disadvantages of distance learning. <https://www.eztalks.com/elearning/advantages-and-disadvantages-of-distance-learning.html>
6. Bordey, H. (2020). 40% of DepEd teachers trained for distance learning. <https://tribune.net.ph/index.php/2020/06/25/40-of-deped-teachers-trained-for-distance-learning/>
7. (2020, July 31). Advantages and disadvantages of distance learning. <https://www.eztalks.com/elearning/advantages-and-disadvantages-of-distance-learning.html>
8. Cheung and Kan, (2002). Student demographics and success in online learning environments. *Emporia States Research Studies*, Vol. 46, no. 1, p. 4-10.
9. Eje, C., & Nkanu, W. (2016). Audio technology for enhancing distance learning in Nideria. *British Journal of Education*, 4(3), 28-39.
10. Farhad, S. (2017). Blended Learning in Distance Education: A Comparative Study of Selected Mega Open Universities. *Quarterly Journal of Iranian Distance Education (IDEJ)*, 9-24.
11. Felix, A. (2020). Awareness of Students towards E-Learning in Education. *Purakala with ISSN 0971-2143 is an UGC CARE Journal*, 31(15), 620-626. Retrieved on 16 June 2020
12. Forsyth, A., and A. Furlong. 2003. *Losing Out? Socioeconomic Disadvantage and Experience in Further and Higher Education*. Bristol: Policy Press.
13. Gorard, S. 2012. "Who Is Eligible for Free School Meals? Characterising Free School Meals as a Measure of Disadvantage in England." *British Educational Research Journal* 38 (3): 1003–17. doi: 10.1080/01411926.2011.608118 accessed on January 12, 2021
14. Hoare, A., and R. Johnston. 2010. "Widening Participation Through Admissions Policy – A British Case Study of School and University Performance." *Studies in Higher Education* 36 (1): 21–41. doi:10.1080/03075070903414297.
15. Jamer, F. T., & Anabo, R. O. Add-on Subjects in Science Special Program-Science, Technology, Engineering (STE): Its Impact in Choosing a Career in STEM. <https://doi.org/10.5281/zenodo.10453900>
16. Naik, P., Madolli, S., Melagiri, L., Davanageri, P., Hiremath, S., & SKSVMACET, L. (2017). E-Learning Based on Cloud Computing. *International Journal of Engineering Science*, 11756. Retrieved

- on 16 June 2021 from <https://www.semanticscholar.org/paper/E-Learning-Based-on-Cloud-ComputingNaik-Madolli/6530f8e5107eded94a02716972691c935bbbc4>
17. Picardal, B. M., & Capito, L. D. (2023). ATTITUDES AND PRACTICES ON CONTEXTUALIZATION AND LOCALIZATION OF ELEMENTARY TEACHERS IN EASTERN SAMAR DIVISION. *EPRA International Journal of Multidisciplinary Research (IJMR)*, 9(7), 162-172. Retrieved from <https://www.eprajournals.net/index.php/IJMR/article/view/2433>
  18. Rivera Jr, B. H. (2023). SCHOOL STAKEHOLDERS'LEVEL OF ENGAGEMENT AND PERFORMANCE ON MODULAR DISTANCE LEARNING. *EPRA International Journal of Multidisciplinary Research (IJMR)*, 9(8), 293-305. <https://doi.org/10.36713/epra14130>
  19. Rumble, G. (2003). Modelling the costs and economy of distance education. Στο M. G. Moore, & W. Anderson, *Handbook of distance education (703-716)*. New Jersey: Lawrence Erlbaum Associates.
  20. Smith, J., and R. Naylor. 2001. "Determinants of Degree Performance in UK Universities: A Statistical Analysis of the 1993 Student Cohort." *Oxford Bulletin of Economics and Statistics* 63 (1): 29–60. doi: 10.1111/1468-0084.00208
  21. Sousa, E. (2016). About some basic aspects of distance learning. In *Theoretical and Methodical Aspects of Distance Learning, Collection of scholarly papers*, University of Silesia in Katowice, Cieszyn, 2009, 13-36.