

Proposed Recommendations in Implementing Information and Communication Technology (ICT) Integration in Schools' Curriculum

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ABSTRACT

This paper delves teachers' profile and problems encountered in ICT integration to propose measures and to enhance the implementation of Information and Communication Technology (ICT) integration in schools' curriculum, especially in terms of students' academic performance. A descriptive research design was employed. Data from questionnaire were treated by using frequency distribution to determine the teachers' profile, weighted mean and parameter was employed to determine the level of seriousness of the problems encountered and to propose recommendations in implementing ICT integration. The study results that teachers' profile is a factor in influencing the delivery of ICT integration. The problems experienced by teachers greatly affect their in employing ICT integration in both job performance and teaching-learning process. The lack of funds for maintenance of equipment and purchase of supplies, important infrastructures, and computer units were major problems that greatly affect the implementation ICT integration in schools' curriculum. Thus, government must allocate funds to strengthen ICT integration curriculum

Keywords: *ICT integration, schools' curriculum, problems encountered, propose recommendations, teachers' profile*

INTRODUCTION

Information and Communication Technology (ICT) is one of the changes in global economic competitiveness (Zoroja and Bach, 2016). It is a curriculum standard in education that meet the demand of time and adapt the 21st century skill. The

study purports to examine the teachers' profile and to propose recommendations to address the problems encountered in implementing ICT integration.

As technology was introduced to the framework of education, there was a trouble perspective of how it implies to the implementation to schools' curriculum. This issue had been identified and acknowledged by different studies; Al-Sharija (2012), Passey (2002), and Manduku, Kosgey, and Sang (no date). Al-Sharija (2012) stressed that ICT has significant influence to duties and functions of school managers in efficient and effective educational management; Passey (2002) expressed that ICT has impact upon the practice of all team that is a permeating aspects of school practice; and Manduku, Kosgey, and Sang (no date) stressed that school administrators must recognize the benefits of the adoption of ICT in school's operation. This study attempts to explore a propose measures to the problem encountered in implementing ICT integration in schools' curriculum.

The cited studies manifest how ICT influences the educational trends. However, the existence of technology brought challenge to schools' management for it created issues to the administrators and teachers. Particularly, the implementation of K to 12 program in the Lanuza District, Surigao del Sur, Philippines in School Year 2012-2013 encourage the Department of Education (DepEd) to adapt 21st century skills. Teachers were required trainings and seminars for ICT integration in all academic subjects and the study of Daling (2017) shows that teacher' competencies were in "Proficient" level. However, in

the recent scenario, there were still factors shows that the performance of schools was still low, especially in terms of academic performance. Thus, the implementation of ICT to educational system is still need investigation to deepen the understanding its implication.

Conceptual Framework

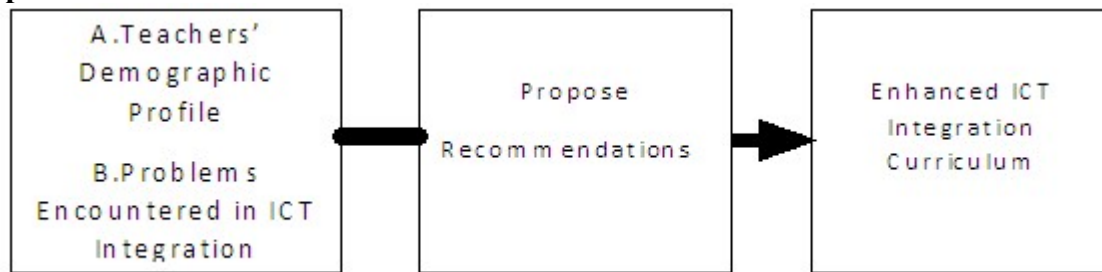


Figure 1. The Schematic Diagram

The figure represents the schema of the study. Teachers’ demographic profile as to; age, sex, position, length of service, educational attainment, and training attended. Inan and Lowther (2010) asserted that ICT use falls with age and teaching experience and those younger teachers integrated ICT into their teaching more veteran teachers. It may imply that seasoned teachers are more into traditional approaches of teaching while younger one used ICT. Teaching experience influence the efficient and effective use of Information and Communication Technology (ICT) in classrooms. Gardner (2008) reported that teacher experience is significantly correlated with the actual use of technology. The National Centre on Adult Literacy Technical Report (2005) posits that people with higher education have higher ICT skills and teachers implement technology and transform teaching performance. Thus, teachers’

profile will be considered in implementing ICT integration, and problems will be identified, propose measures will address so that it could help in realizing the implementation of enhancing ICT integration in schools’ curriculum.

Methodology

A descriptive research was designed to determine the claim of the study. The study was conducted to determine teachers’ demographic profile and to propose measures to the problems encountered in implementing ICT integration in schools’ curriculum. Purposive sampling was applied to twenty-six (26) Grade 8 teachers of four (4) secondary schools of Lanuza District : PakwanIntegrated School, Agsam Integrated School, NurciaIntegrated School, and Florita Herrera-Irizari National High School (FHINHS).

Results and Discussions

Table 1
Respondents’ Profile as to Age, Sex, Position, Length of Service, and Educational Attainment

Age			
Age Bracket	Frequency	Percentage	Rank
25-Below	7	26.92	2
26-35	15	57.69	1
36-45	3	11.54	3
46-55	1	3.85	4
Total	26	100	

Sex			
School	Male	Female	TOTAL
Pakwan IS	4	2	6
Agsam IS	1	3	4
Nurcia IS	1	4	5
FHINHS	1	10	11
Total	7	19	26
Percentage	26.92	73.08	100
Position	Frequency	Percentage	Rank
SST 1	23	88.46	1
SST 2	0	0	4
SST 3	2	7.69	2
MT 1	1	3.85	3
Total	26	100%	
Length of Service			
5 years and less	17	65.38	1
6 to 10 yrs.	5	19.23	2
11 to 15 yrs.	2	7.69	3
16 to 20 yrs.	1	3.85	4.5
21 to 25 yrs.	0	0	6
26 yrs. & above	1	3.85	4.5
Total	26	100%	
Educational Attainment			
Bachelor's Degree	9	34.62	2
With M.A. Units	17	65.38	1
Full-fledged MA Degree	0	0	0
With Doctoral Units	0	0	0
Full-fledged PhD/EdD.	0	0	0
TOTAL	26	100%	

Table 1 shows teachers' age distribution of teachers in Lanuza district. It reveals that 15 out of 26 or 57.69% are at age between 26 - 35. It also shows that only one respondent is in between 46 – 55 years which means only one is a seasoned teacher in the district and close to 99% are new teachers.

Gender differences affect the usage of ICT as reported in several studies. Sex distribution of teachers' respondents is also shown in Table 2. Result tells that 19 among the 26 respondents or 73.08% are female and only 7 or 26.92% are male. It relates to the findings of Adams (2002) that female teachers applied ICT more than the male teachers. Yukselturk and Bulut (2009) related that gender gap has reduced over the past years, presently, a greater number of females than males have used internet. Result implies to the possibility that much time and efforts on lessons with ICT Integration are given to the students as there are more female teachers than male.

As to the teachers' position, result tells that 23 teachers of the 26 respondents or 88% are Teacher 1, two (2) or 7.69% are Teacher 3 and only one respondent has the highest position of Master Teacher 1. This posits that most of the respondents are still new in teaching position which implies that most of them are qualified and can effectively deliver lessons with ICT integration to their students.

As to their length of service it is revealed that respondent's frequency in 5 years and below in service has only 17 out of 26 or 65.38% is an evident that most of the teachers in Lanuza district are new. One teacher falls 16 – 20 and while one (1) also serves for about 26 years and above in service. This result can be related to the study of U.S National Centre for Education Statistics (2000) that teachers with less experience in teaching were more likely to integrate computers in their teaching than teachers with more experience in teaching. New teachers could

experience some challenges in their first few years of teaching and spend most of their time in familiarizing themselves with school's curriculum and classroom management.

For their educational attainment, data tells that 17 of 26 teachers or 65.38% have units in Master's study

while 9 or 34.62% of the respondents have not undergone graduate studies. It simply implies that those who were not able to enrol themselves in graduate studies are more likely those who are not exposed to using ICT which would affect to their attitude of integrating ICT in the class.

Table 2
Respondents' Profile as to Trainings Attended

Level of Trainings Attended			
Level of Trainings	Wt. Mean	Interpretation	Rank
a. In your undergraduate studies	2.12	Seldom	4
b. Private computer centers	1.92	Seldom	5
c. TESDA	1.38	Once	6
d. Self –Training	2.42	Seldom	3
e. In the school you are presently working	3.15	Sometimes	2
f. Training conducted by DepEd	3.31	Sometimes	1
Average Weighted Mean	2.38	Seldom	
Legend:1.00-1.79 (Once) 1.80-2.59 (Seldom); 2.60-3.39 (Sometimes);3.40-4.19 (Oftentimes);4.20-5.00 (Always)			
Effectiveness of Trainings			
ICT TRAINING AREAS	Wt. Mean	Interpretation	Rank
Training in the use of computers/basic computer	4.15	ME	2.5
Student Information System (SIS) Curriculum Manager	3.35	ME	6
Word processing (e.g. MSWord)	4.27	VE	1
Spread sheets (e.g. Excel)	4.15	ME	2.5
Presentation Software (e.g. Power Point)	4.12	ME	4
Databases (e.g. Access)	3.19	ME	6
Training on how to integrate technology within the curriculum	3.58	ME	5
Average Weighted Mean	3.83	More Effective	

Legend: 1.00-1.79 – Not Effective 1.80-2.59 – Least Effective (LE)
2.60-3.39 – Moderately Effective (MoE); 3.40-4.19 – More Effective (ME)
4.20-5.00 – Very Effective (VE)

Table 2 shows the level of trainings attended. It revealed that most of the ICT trainings were sponsored by DepEd and “Sometimes” attended by teachers. Teachers' professional development is a key factor to a successful integration of computers into classroom teaching. It implies that ICT trainings to teachers were not intensified which hinder them to effectively impart to students. Monitoring and evaluation on the usage of ICT in the lesson was not intensified as they revealed seldom even to self-training.

As to effectiveness of training attended, data revealed that teachers are very effective on word processing. Likewise, training in basic computers and spread sheets which presently encouraged to adopting a paperless report is revealed more effective. This also posits with what Lawless & Pellegrino (2007) claim that if training program is of high quality, the period for training lasts longer, new technologies for teaching and learning are introduced, teachers are motivated to get involved in important context activities, teamwork among colleagues is improved and has clear vision for students attainment. It implies that efficient and effectiveness of ICT is helped by practice.

Table 3
Problems Encountered in Integrating ICT

Indicators	Wt. Mean	Interpretation	Rank
Lack of funds for maintenance of equipments and purchase of supplies	3.85	MS	1
Supply of electricity	2.69	MoS	9
Location and transportation	3.04	MoS	7.5
Lack of technical know-how of the teachers and staff	2.50	LS	11
Lack of important infrastructures (e.g., computer laboratory, e-classroom, etc.)	3.50	MS	3
Lack of computer units	3.73	MS	2
No personal computer	2.12	LS	14
Lack of internet connection	3.35	MoS	4
Lack of Telecommunication Signal	3.04	MoS	7.5
Lack of support from stakeholders	2.38	LS	13
Bad weather conditions	2.54	LS	10
Learners' ICT illiteracy	3.12	MoS	5.5
Lack of software	3.12	MoS	5.5
Lesson preparation are too long	2.42	LS	12

Legend: 4.20-5.00–Very Serious(SA);3.40-4.19–More Serious(MS);2.60-3.39– Moderately Serious(MoS); 1.80-2.59 –Least Serious (LS); 1.00-1.79 – Not Serious (NS)

Table 3 shows Teachers' problems encountered in integrating ICT in English, Science, and Mathematics. Result reveals that five (5) indicators are described as Least Serious (LS). In an informal interview, most teachers owned and prioritize personal computer as one of their profession's basic needs, administrators are doing their best to meet the needs of the school curriculum however school has lack resources. Teachers can access or download a prepared lesson in internet or educational website as most of them are computer literate, independent to manipulate the modern gadgets without affecting their efficiency by

bad weather. Indicators with weighted mean described as Much Serious (MS) and Moderately Serious (MoS) are considered major problems. Lack of funds for maintenance of equipment and purchase of supplies, Lack of important infrastructures, and Lack of computer prevail as Much Serious (MS), they need an attention.

These findings must be given attention to find solution as they will greatly affect the effectiveness and efficiency of teachers to impart their knowledge, and skills to students, and works.

Table 4
Proposed Measures

Indicators	Wt. Mean	Interpretation	Rank
Municipal and Provincial LGU should provide budgetary support for the maintenance of equipment and purchase supplies	4.31	VMR	11.5
Government should link to the energy company (e.g.,SURSECO) to assess the electricity needs of the community	3.96	MR	13
A strong partnership must be established with the LGU towards GOs or NGOs for provision of infrastructures improvement such as Farm-to-Market Road	4.42	VMR	8.5
Teachers' technical skills should be upgraded and enhanced through continuing ICT training and development.	4.69	VMR	2
Government should provide additional facilities such as computer lab and e-classroom	4.73	VMR	1
Extra computers or ICT equipment must be provided to accommodate the increasing number of enrollment.	4.65	VMR	4
Assistance should extend to teachers who wish to acquire a personal computer or laptop to help build basic computer competence and ICT pedagogical skills.	4.35	VMR	10
Government should provide a sufficient/ quality internet connection	4.42	VMR	8.5
Government should encourage tele-companies that every community should have telecommunication access (e.g., phone signals)	4.31	VMR	11.5
Administrators' linkages with stakeholders should exercise to assess the school needs	4.65	VMR	4
There should be an energy intervention source/emergency power in times of bad weather conditions	4.62	VMR	6
Learners'ICT remediation should encourage to minimize the ICT illiteracy	4.65	VMR	4
Locating/Downloading new lessons and softwares in the Internet	4.54	VMR	7

Legend: 4.20-5.00–Very Much Recommended(VMR); 3.40-4.19 – More Recommended(MR); 2.60-3.39–Moderately Recommended(MoR);1.80-2.59– Least Recommended (LR); 1.00-1.79 – Not Recommended(NR)

Table 4 shows the proposed measures which are Much Recommended (MR) and Very Much Recommended (VMR) by the respondents to solve the problems encountered in the integrating ICT in English, Science, and Mathematics subjects.

Twelve (12) proposed measures are very much recommended by the respondents which they believed are helpful in solving the problems encountered in integrating ICT in teaching English, Science, and Mathematics subject. This implies that the

government must allocate budget for additional infrastructure such as computer laboratory or e-classroom. It was strongly recommended by the respondents with the belief that these are attainable measures that advances in solving the problems.

Government should link to the energy company (e.g.,SURSECO) to assess the electricity needs of the community, was the only proposed measure rated much recommended by the respondents.

CONCLUSION

The findings showed that most of the teachers were still new in teaching profession and more female teachers integrate ICT to lessons than male teachers. New teachers were exposed to ICT while the seasoned teacher was more on traditional instruction. The problems encountered greatly affect teachers' delivery as to effectiveness in employing ICT to lessons; and the twelve proposed measures were very much recommended which believed to be helpful in solving the problems encountered in ICT integration which demands a proposal to government for enough allocation for budget for additional infrastructure such as computer laboratory or e-classroom.

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