Readiness and Acceptability of Information and Communication Technology Integration in Basic Education

[1]CHARLIE P. NACARIO, [2]GLORIA B. OSEA, [3]VLADIMIR R. FORONDA, [4]MA. TERESA B. LIRAG

[1]liecharpnac@yahoo.com, [2]gloriaosea@yahoo.com [3]foronda_vladimir@yahoo.com [4]tessbl@yahoo.com

[1]Assistant Professor II & Director, NSTP; [2]Professor VI & Dean, College of Arts & Sciences; [3]Assistant Professor III & Director, ICT ; [4]Associate Professor I & Coordinator, MIS

Central Bicol State University of Agriculture, San Jose, Pili, Camarines Sur

PHILIPPINES

Abstract - *A research study was conducted to determine the readiness and acceptability of information and communication technology (ICT) integration in six internet connected Public High Schools (ischools) in Camarines Sur. It also aimed to determine the ICT knowledge, skills and attitude of faculty and students in ischools, ICT trainings and competencies of teachers and availability of ICT facilities in the schools and community. Purposive sampling was used in determining the respondents of the study and quantitative statistical tools such as frequency counts, percentage rates and weighted means were used in analyzing the data. Findings revealed that faculty and students in two out of the six schools were highly knowledgeable and highly skilled in ICT hardware and software components identification but only one school was found to be highly competent on ICT usage. All faculty members in one school integrated ICT in teaching English, Math, Science and TLE however, no school integrated ICT in Social Studies. The availability of ICT resources and the provision of initial ICT trainings to faculty and students in ischools contributed to ICT integration in teaching. The initial level of ICT integration in teaching is indicative of faculty and students' readiness and acceptance of ICT tools in teaching-learning environment. Recommendations in the study were conduct of retraining courses on ICT; development of ICT-based teaching modules in Social Studies; conduct future studies that would test relationship between socio-demographic profile and ICT integration in teaching; and correlate ICT competencies of students in achievement tests in English, Math, and Science among ischools.*

Keywords: information and communication technology, ICT integration

I. INTRODUCTION

The use of ICT has become pervasive in our daily lives and has received wide attention from many people from all walks of life. We had seen the increased importance of ICT to students, farmers, businessmen, professionals and even to an ordinary citizen of our society.

In the education sector, school administrators and officials are facing competitive pressure to make their delivery of services effective and efficient and to make their clienteles/students globally competitive as they leave the portals of their schools.

In the Philippines IT Action Agenda for the 21st century, it was emphasized that our country must develop and implement life-long learning through the Internet; incorporate IT in the primary, secondary and tertiary curricula; implement IT-based/computer-aided learning in basic education; upgrade competencies of educational, training institutions with IT-based tools and programs; develop institutional/learning material especially in the sciences and engineering, math and technology.

Indeed, the Philippine government needs to focus on harnessing information technology in boosting performance of teachers, students and other education stakeholders to be competitive and to move forward. The Information and Communication Technology assume deep strong and constant ingredients to push the change that the school needs in the beginning of this century.

Over the years, CBSUA has become sensitive to the emerging technological changes that can give the school the competitive advantage over other schools. Lirag (2000) emphasized the need for the school to develop and implement policies and curricular reforms that will give employees and students the opportunity to improve themselves, be globally competitive and be at par in terms of academic excellence with other students of other schools and universities. Likewise, Foronda (2011) made a recommendation in one of his studies to build the ICT capability of public school teachers and monitor the influence of capability building on classroom instruction improvement, school governance efficiency, and student performance.

According to WoodHurst 2002, the term "integration" relates to the way in which ICT is incorporated into student learning, and this can be treated separately from its consequences. The literature of the effectiveness of ICT integration can therefore be examined as the distinct area. It should be noted however, that IT merely provides an opportunity to gain competitive advantage and improve operational efficiency; it does not guarantee results (Ritchie, 1998).

Considering that today's teachers are educated and trained in a traditional teacher-centered approach, it takes substantial effort and a major paradigm shift to move on to a facilitative learner-centered approach that is espoused by an ICT-educational setting. It is therefore, important that the education

sector should take a serious look at more appropriate approaches to change management among teachers, administrators, and support staff towards planning and implementing ICT in education initiatives. Special attention should be given on "learning rather than on teaching" as well as teachers readiness in terms of their inclinations, perceptions, attitudes, concerns, and motivation in ICT integration, role of the teacher, classroom management, support systems, and computer coping strategies.

The readiness and acceptability of the students and teachers are needed to be considered in ICT integration to improve the quality of teaching and learning process. Their skills will vary depending upon several factors like the availability of the computers, their knowledge on how to use it and the time when to utilize the technology.

II. OBJECTIVES OF THE STUDY

This study aimed to determine the readiness and acceptability of ICT integration among *ischools* in Camarines Sur. Specifically, it aimed to characterize the faculty and students in terms of socio-economic aspects; describe the knowledge and skills of faculty and students in *ischools* on computer components and ICT competencies; identify ICT trainings attended by faculty among *ischools;* and *d*etermine the readiness and acceptability of ICT integration among *ischools.*

III. MATERIALS AND METHODS

The study made use of the descriptive-evaluative method. Primary data collection was conducted using questionnaire and key informant survey. The questionnaire answered the following: 1) socio-demographic profile of faculty and students in cooperating ischools 2) Knowledge, skills and attitude of faculty and students in cooperating ischools on the computer components (3) ICT Competencies of teachers and students (4) ICT trainings attended by the teachers (5) Availability of ICT in the community and (6) Readiness and acceptability of teachers and students in cooperating ischools. Key informant survey using guide questions was used to validate the data from the teachers.

Likewise, descriptive statistical tools were used such as weighted mean, frequency counts and percentage technique.

Respondents of the Study

Six (6) cooperating *ischools* served as respondents of the study. These included: Balaogan High School (BHS), Coguit High School (CHS), Justo V. Imperial Memorial High School (JVIMHS), Doña Basilia S. Quilon Memorial High School (DBSQMHS), Nonito Paz Arroyo Memorial High School (NPAMHS) and Victor Bagasina Sr. Memorial High School (VBSMHS). Selection of student respondents in the six (6) cooperating *ischools* was based on 30% of the total population of 3rd and 4th year high school students for the school year 2009-2010 (Table 1).

Table 1. Population and Respondents of the Study

School	No. of Teachers	%	No. of Students	%
A	12	16.0	50	22.2
B	7	9.3	35	15.6
C	31	41.3	30	13.3
D	10	13.3	30	13.3
E	5	6.7	30	13.3
F	17	22.7	50	22.2
Total	**82**	**100**	**225**	**100**

The 82 faculty respondents of this study were taken through purposive sampling while the 225 3rd and 4th year students of the six (6) cooperating *ischools* in Camarines Sur for the school year 2009-2010 comprised the total number of student respondents.

Instrumentation

The study used two sets of instruments. The first set was the questionnaire, Parts II and III of which were taken from Commission on Information and Communications Technology (CICT) Questionnaire Form. The questionnaire was designed to obtain the following data from faculty and students: Part I - General Information; Part II – knowledge, skills, and attitude; Part III - ICT competencies; Part IV - ICT trainings attended; Part V - availability of ICT in the community and Part VI - readiness and acceptability of ICT integration in teaching.

IV. RESULTS AND DISCUSSION

Table 2 shows the socio-demographic profile of faculty in *ischools* in Camarines Sur.

Table 2. Socio-demographic profile of faculty in *i schools* in Camarines Sur

Characteristics	Total (f)	Percentage (%)
Age		
55 – 60	6	7
49 – 54	5	6
43 - 48	19	23
37 – 42	21	26
31 – 36	11	13
25 – 30	20	24
Gender		
Male	27	33
Female	55	67
Monthly Family Income		
27,000 up	7	8
16,000 - 26,000	35	43
5,000 - 15,000	31	38
5,000 below	9	11
Educational Attainment	F	%
College Graduate	59	72
PhD/M.A. with units	13	16
M.S Graduate	8	10

Most of the faculty-respondents belong to the middle age bracket of 37-48 years old. There were more female (67%) than male (33%) and 77% of them are married. In terms of monthly income, almost half of the respondents receive a monthly salary between Php 16,000.00-26,000.00 (Table 2).

For the student-respondents, 92% of them belong to the age range of 14-17 years old, with more female (63%) respondents than male (37%). Seventy percent of the students belong to families with monthly income of Php 5,000.00 and below (Table 3).

Table 3. Socio-demographic profile of students in *i schools* in Camarines Sur

Characteristics	Frequency	Percentage
Age		
18 above	14	6
16-17	104	46
14-15	107	48
Gender		
Male	83	37
Female	142	63
Civil Status		
Single	225	100
Monthly Family Income		
16,000 above	18	8
5,000 - 15,000	49	22
5,000 below	158	70

Knowledge and Skills (KS) of faculty and students on computer components' identification and utilization

The faculty of schools A & D are highly knowledgeable and highly skilled in identifying the different computer components, while the faculty from school C is slightly knowledgeable and slightly skilled on this area (Figure 1).
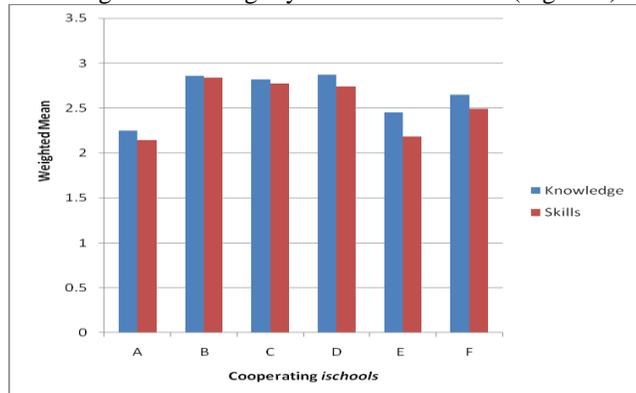

Figure 1. Knowledge and skills of faculty on computer components' identification and utilization

The students of schools B, C, D and F are knowledgeable and skilled in identifying the different computer components, while the students from schools A & E are slightly knowledgeable and slightly skilled in this aspect (Figure 2).
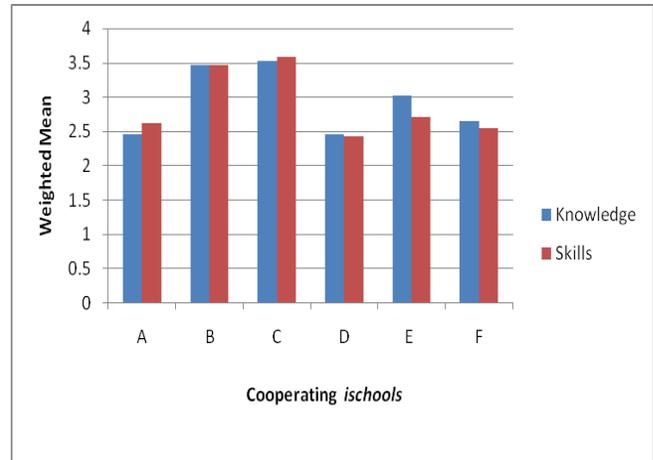

Figure 2. Knowledge and skills of students on computer components' identification and utilization

In terms of trainings attended related to ICT, the study revealed that both faculty and students did not have the opportunity to attend ICT trainings except the ICT training courses conducted by the Commission of Information and Communications Technology (CICT) and CBSUA. Faculty respondents showed interest in learning more on slide animation and powerpoint presentation to enhance their learning styles.

Readiness and acceptability of ICT integration in teaching among faculty and students in cooperating *ischools*

Almost half of the respondents/faculty in schools A, B & E use ICT in teaching however, 100% or all faculty in school C use ICT in teaching. On the contrary, 97% of the faculty in school D does not integrate ICT in teaching.

Ninety-one percent and ninety percent of students in schools B and D, respectively prefer ICT integration in the class than traditional method while only 47% of students in school C prefer integration of ICT in the class.

Table 3. Readiness and Acceptability of ICT Integration of Teachers in *ischools*

Acceptability	f	%
ICT Integration	30	37
Traditional Method	52	63
Total	**82**	**100**

Table 4. Readiness and Acceptability of ICT integration of Students in *ischools*

Acceptability	f	%
ICT Integration	151	67
Traditional Method	74	33
Total	**225**	**100**

V. CONCLUSIONS AND RECOMMENDATIONS

The students in four schools (B, C, D and F) are knowledgeable and skilled towards computer components. On the other hand, students from schools A & E are slightly knowledgeable and skilled towards computer components.

The faculty of schools A & D are highly knowledgeable and highly skilled towards ICT competencies. On the other hand, the faculty in one school (school C) are slightly knowledgeable and skilled towards ICT competencies.

The availability of ICT resources and the provision of initial ICT trainings to faculty and students in *ischools* contributed to ICT integration in teaching by 37%. The initial level of ICT integration in teaching particularly in Science, Math, English and TLE is indicative of faculty and students' readiness and acceptance in ICT.

The following were the recommendations: conduct of retraining courses on ICT integration is important to *ischools* however, few number of teachers are capable of ICT integration; development of teaching modules in Social Studies that will assist teachers to facilitate integration ICT in teaching the subject is necessary; future studies are recommended that will test relationship between socio-demographic profile and ICT integration in teaching. Likewise, it is also important to correlate ICT competencies of students in achievement tests in English, Math, and Science among *ischools*.

REFERENCES

Foronda, Vladimir R. Integrating Information and Communication Technology into Education: A study of the ischools Project in Camarines Sur, Philippines. Journal of Developments in Sustainable Agriculture. 2011

Harnessing ICTs for Philippine Basic Education. CICT-Human Capital Development Group. Retrieved from http://www.scribd.com/doc/6785601/ICT4E-Article-Manual

Integration or Transformation? A cross-national study of information and communication technology in school education. Retrieved from http://www.educ.utas.edu.au/users/afluck/thesis/html/litrev.htm

Lirag, Ma. Teresa B. The Information System of CSSAC: Its Effectiveness, Unpublished Thesis, March 2000.

National Information and Technology (IT) Council. IT 21 Philippines, Manila, October, 1997.

Ritchie, D. (1998). *Teaching and learning online: Tools, templates, and training.* Paper presented at SITE 98: Society for Information Technology & Teacher Education International Conference, Washington, DC.

Woodhurst, Earl (2002) How do IC technologies reshape our assumptions about Proceedings, Linking Research to Educational Practice Symposium, University of Calgary, Canada. Online at lgary.ca/~lrussell/woodhurst.html on 14th January 2003. enhanced secondary science instruction