ASSESSMENT OF PUBLIC SCHOOL TEACHERS' APPLICATION OF BASIC ICT SKILLS IN THE WORKPLACE

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Abstract

The study was conducted to assess the degree of application of basic ICT skills among teachers to administrative and classroom management tasks. The respondents of the study were 223 teachers from the Department of Education – Schools Division of Tarlac. The study employed the descriptive method of research, using survey questionnaires and unstructured interviews as instruments to gather data and pertinent information. Results show that word processing application is often used in tasks such as preparation of reports and student examination, spreadsheet application is occasionally used in recording grades, and presentation software is seldom used in all of the specified tasks. It was also found that the lack of computers and equipment, insufficient knowledge and skill, and lack of confidence are the major factors that affect teachers' application of ICT skills. Teachers are interested to undergo further training on spreadsheet application, presentation preparation, and multimedia applications in order to develop their ICT competencies.

Keywords: Information and Communications Technology, Teacher Training, Continuing Education

1. Introduction

Information and Communications Technology (ICT) has been proven to have a great potential in improving the teaching-learning process. How the teacher uses the technology is among the many factors that influence ICT development in schools (Cabanatan, 2001). Thus, it is essential that teachers be well-equipped not only with knowledge about ICT but also with the skills to implement it effectively in the classroom.

ICT education among teachers is an ongoing process (Cabanatan, 2001), from learning the basics to strategizing how to apply learned technology in the pedagogy. UNESCO presented a four-stage model of ICT development among teachers, with each stage depicting the target ICT skills and actions for implementation among teachers. The emerging stage is characterized by development of ICT literacy and application of ICT to a range of personal and professional tasks. The applying stage is where teachers use ICT for professional and instructional purposes to improve subject teaching. In the infusing stage, teachers fully integrate ICT in all aspects of their professional lives to improve their own learning and the learning of their students. Lastly, in the transforming stage, teachers and other school staff regard ICT as so natural and part of the everyday life of schools that they begin to look at the process of teaching and learning in new ways. The emphasis changes from teacher-centered to learning-centered (Khvilon, et.al., 2002).

Researchers emphasized that before teachers can effectively integrate ICT in instruction, they should first have the basic ICT knowledge and skills. These in turn will then be applied in administrative and classroom management tasks and personal activities (Education Development Center, 2011; Cavas, Cavas, Karaoglan, & Kisla, 2009; Hepp, Hinostroza, Laval & Rehbein, 2004). It takes time, practice and experience to master these skills before eventually integrating them successfully in the classroom.

What is more difficult in successfully integrating ICT in the classroom is that the teacher's path towards full integration of ICT is slowed down by external and internal factors or barriers (Bingimlas, 2009; Sang, et.al., 2009). External barriers pertain to lack of equipment, lack of

accessibility to resources and lack of training opportunities and support. Internal barriers, on the other hand, refer to beliefs, self-efficacy, resistance and attitudes of teachers.

In this regard, the study sought to determine public school teachers' application of three of the most basic ICT literacy units—word processing, spreadsheet, and presentation—in accomplishing administrative and classroom management tasks. Before even delving into their integration of ICT skills in classroom instruction, it is also vital to assess how they apply their ICT skills in administrative and classroom management duties because ICT integration in classroom instruction is still a huge leap to make, with a lot of preparations needed along the way (Educational Development Center, 2011).

The study also took sight of the factors that affect the teachers' application of their basic ICT skills, as well as the competencies they further need in preparation for full ICT integration in the classroom.

2. Objectives

This study aimed to assess the application of basic ICT skills of public school teachers in Tarlac province in their workplace.

Specifically, it aimed to answer the following questions:

1. What is the degree of application of the teachers' basic ICT skills in their administrative and classroom management tasks?
2. What are the factors that affect the application of basic ICT skills among teachers?
3. What ICT competencies do teachers further need?

3. Significance of the Study

The study aims to gather data and information that are important in redesigning a basic ICT training to be offered to future clients of the Tarlac State University Extension Office (UEO), particularly public school teachers. Besides determining the ICT competencies that need to be developed, finding out where teachers utilize their acquired ICT skills should also be considered in order to come up with a training that will involve activities of very high relevance to their actual work.

4. Scope and Delimitation

The study dealt with the degree of application of basic ICT skills of teachers in administrative and classroom management tasks. The respondents were limited to public school teachers in the province of Tarlac who have undergone basic computer literacy trainings sponsored by UEO and Microsoft Philippines from 2005 to 2008.

The basic ICT applications referred to in the study are limited to word processing program (i.e. Microsoft Word), spreadsheet program (i.e. Microsoft Excel), and electronic presentation program (i.e. Microsoft PowerPoint).

5. Methodology

All of the six-hundred forty-one (641) teachers who have benefited from the Basic Computer Literacy trainings given by UEO from 2005-2008 were considered in the study. Of the

total number, 223 (~35%) teachers responded to the survey fielded by the researchers in coordination with the DepEd Tarlac and the Division ICT Teachers' Association (DICTTA).

The following tables show the distribution of the respondents according to school type and municipality of employment, respectively.

Table 1. Distribution of respondents according to school type

School Type	No. of Teachers	%
Elementary School	165	74%
High School	58	26%
Total	223	100%

Table 2. Distribution of respondents according to municipality of employment

Municipality	No. of Teachers	%
Camiling	58	26.0%
Concepcion	39	17.5%
Gerona	8	3.6%
La Paz	10	4.5%
Moncada	31	13.9%
Pura	14	6.3%
Ramos	34	15.2%
San Jose	29	13.0%
Total	223	100%

To answer the objectives of the study, the researchers employed the descriptive method of research. A survey questionnaire prepared by the researchers was used to gather necessary information from the respondents. The survey was administered with the assistance of DepEd Tarlac and DICTTA. To support the results of the survey, unstructured interviews were also conducted among the respondents.

Responses in the questionnaire were tallied and presented in frequency tables. To provide a description of the degree of ICT application among teachers, the means of the responses were obtained and were given corresponding verbal descriptions as follows:

4.00 - Always
3.51-3.99 –Almost Always
2.51-3.50 – Often

1.51-2.50 – Occasionally
0.51-1.50 – Seldom
0.01-0.50 – Very rarely
0.00 – Never

6. Results and Discussion

6.1. Degree of Application of Teachers' Basic ICT Skills

Table 3. Degree of teachers' application of word processing skills

Task	Mean	Verbal Description
Lesson Planning	1.15	Seldom
Lesson Presentation	1.15	Seldom
Student Examination	2.71	Often
Recording of Grades	1.78	Occasionally
Communication	2.27	Occasionally
Reportorial Requirements	2.77	Often

Tables 3 to 5 present the degree of application of the three basic computer literacy skills—word processing, spreadsheet application, and presentation preparation—to different administrative and classroom management tasks. Microsoft Word which is a word processing program is often used in preparing reports and preparing student examinations, occasionally used in preparing communication and recording of grades, and seldom used in lesson planning and preparing presentations.

Since DepEd requires reports to be computerized, teachers are challenged to use computer software to accomplish these reports. On the other hand, a few teachers who were interviewed admitted to having some other person type reports for them, as they are still not adept at using computers. As regards lesson planning, some teachers explained that they are still required to prepare lesson plans that are handwritten, which explains the low mean.

Table 4. Degree of teachers' application of spreadsheet application skills

Task	Mean	Verbal Description
Lesson Planning	0.60	Seldom
Lesson Presentation	0.66	Seldom
Student Examination	1.08	Seldom

Recording of Grades	2.35	Occasionally
Communication	0.67	Seldom
Reportorial Requirements	1.31	Seldom

In terms of spreadsheet applications like Microsoft Excel, recording of grades garnered the highest mean and is the only task where the computer application is used occasionally. The result is very likely since the other tasks enumerated are not normally undertaken using a spreadsheet program. The result also confirms the fact that a significant portion of teachers still prefer to record their students' grades in a typical class record book, as mentioned in the unstructured interviews.

Table 5. Degree of teachers' application of presentation preparation skills

Task	Mean	Verbal Description
Lesson Planning	0.62	Seldom
Lesson Presentation	0.95	Seldom
Student Examination	0.63	Seldom
Recording of Grades	0.61	Seldom
Communication	0.61	Seldom
Reportorial Requirements	1.07	Seldom

In terms of electronic presentation software, Microsoft PowerPoint is seldom used in all of the tasks. One important thing to take note of here is the low degree of use of the software in terms of preparing lessons for presentation. MS PowerPoint is a powerful tool that can be very useful in conveniently and efficiently presenting lessons. The teachers actually agree with this, pinpointing the lack of necessary hardware (e.g. laptop, projector) to be used as the main reason why they seldom use MS PowerPoint.

6.2. Factors Affecting The Application Of Basic ICT Skills

Table 6. Factors affecting the application of basic ICT skills among teachers

Factor	No. of Responses	%
Lack of Computers/ICT Equipment	168	75.33%
Lack of Administrative Support	8	3.59%
Computerization not a priority of school	38	17.04%
Insufficient Knowledge/Skill/Lack of Confidence	102	45.74%
Prefer to perform tasks manually	36	16.14%
Age	2	0.90%
Time Management	3	1.35%

Table 6 above shows the factors that teachers believed to be the ones affecting the application of the skills they have learned in the trainings. Consistent with previous studies (Son, Robb, & Charismiadji, 2011; Bingimlas, 2009; Asan, 2003), lack of computers and other ICT equipment remains to be the greatest perceived factor that affects application of acquired computer skills (75.33%). In table 7, it appears that there is quite a large number of available computers for use, but there is the problem of "availability at the time of need," meaning the number of computers is not sufficient to serve teachers at the time they actually need them.

On the other hand, insufficient knowledge and lack of confidence was raised by 45.74% of the respondents. According to the teachers, the two factors are closely related to each other: a) the lack of sufficient knowledge may be tied to their insufficient training and lack of confidence to practice what they have learned; and b) their lack of confidence to insufficient knowledge.

A number of teachers who preferred to accomplish tasks manually (16.14%) expressed their lack of confidence in using computers as the main reason for doing tasks manually.

Some of the interviewed respondents pointed out the importance of effective and extensive training on basic as well as advanced ICT applications that would provide initial knowledge, develop skills, and build up the confidence of teachers.

Table 7. Accessibility of Computers

Location of Computers	Respondents with Access	%
School	145	65.02%
Home	130	58.30%
Computer Shop	81	36.32%
None	18	8.07%

As can be gleaned from Table 7, majority of the teachers have access to computers, with about 65% having access in schools. The problem is that although there are computer units in schools, the number is insufficient to accommodate all the teachers at any given time. This limits the teacher from gaining access to computers in school.

On the other hand, more than half (58.30%) of the teachers have their own computers at home. While this is the case, still a lot of teachers are not able to gain access to their computers regularly when at home for a number of reasons. Some teachers do not bring homework, while a few others do not have additional time to do school tasks at home.

6.3. ICT Competencies Needed by Teachers

Table 8. ICT skills needed by teachers

Skill	No. of Responses	%
Word Processing (e.g. MS Word)	14	6.28%
Lesson Presentation (e.g. PowerPoint)	69	30.94%
Spreadsheet (e.g. MS Excel)	63	28.25%
Publication (e.g. MS Publisher)	7	3.14%
Multimedia (e.g. Photo/video editing software)	20	8.97%
Others	28	12.56%

Although the basic computer literacy training given to teachers include instruction on spreadsheet application and presentation software, almost one-third of the teachers feel they still need further training on the two programs (spreadsheet = 28.25%, presentation = 30.94%). Almost a tenth of the respondents want to learn multimedia software (8.97%) that can be used for preparing audio-visual presentations and editing photos. Others specified publication software, programming, and even hardware troubleshooting.

7. Conclusion

Results indicate that word processing skills are often applied in preparing reports and student examinations, occasionally applied in preparing communication and recording grades , and seldom used in lesson planning and preparing presentations. On the other hand, spreadsheet skills

are occasionally used in recording grades and seldom applied in all other tasks. Presentation preparation skills are seldom applied in all the school tasks identified.

Lack of computers and ICT equipment, insufficient knowledge and skill, and lack of confidence are among what teachers perceive to be the greatest factors that affect application of basic ICT skills in the workplace. Other factors are the low prioritization of ICT development in schools, lack of administrative support, time management, and age.

Among the competencies and skills identified by the teachers to be highly needed are in the areas of spreadsheet, electronic presentation, and multimedia applications.

8. Recommendations

UEO should review the findings in order to come up with a revised training program that will encourage teachers to maximize their acquired skills by integrating relevant lessons and exercises relating their daily work. Moreover, UEO should look into additional training programs that will cater other needs of teachers in Tarlac.

The DepEd Tarlac can possibly look into formulating policies that require teachers to use basic ICT applications in almost all tasks possible. This will prepare teachers for more extensive classroom application of a wider variety of ICT tools in the future.

DepEd should invest on ICT equipment to enhance application of knowledge and skills in order to improve the teaching-learning process.

An extensive research as a follow up study should be undertaken to include all the factors involved in applying ICT to education.

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