

Research Article

Assessment on The Information - Communication Technology Literacy of Principals of Health School

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ABSTRACT

The study determined an assessment of the Information-Communications Technology literacy of the principal of health school in Eastern Visayas Region, Philippines. This was conducted randomly selected central health schools in thirteen (13) divisions in the Department of Education. A total of 505 respondents, one hundred one (101) of whom were central school principals, 101 district supervisors, and 303 teachers who rated the principal's performance along with the following indicators: Occupational Competence, Professional and Personal Competence, Attendance and Punctuality and Plus Factors. A survey questionnaire was used to gather the data relevant to the study. The obtained data were tabulated, analyzed, and interpreted through frequency counts, mean, percentage of distribution, and t-test. Findings of the study were as follows: Of the 505 respondents, 65 (64.4%) were females while 36 (35.6%) were males, 53 (52.5%) belonged to early later years, 33 (32.7%) were masters' and doctoral degree holders, 57 (56.5%) with an actual monthly income of 36,501– 42,500, 40(48.51%) or almost half of the respondents has no ICT training, 49 (48.51%) owned computers for 1-3 years, 80 (79.21%) has 1-3 computer units, and 51 (50.5%) have favorable attitudes towards computer literacy. On the performance of principals as rated by teachers it was very satisfactory with a mean of 4.11 while immediate supervisors and principals themselves have a similar rating of very satisfactory with a mean of 3.86 and 4.01 respectively. It is recommended that school principals must undergo continuing education programs concerning ICT. Literacy skills of principals of health school may lead to effective instructions and managerial functions.

Keywords: Assessment, Information-Communication Technology, literacy, school of health, management

Introduction

In the advancing technological era, principals of health school are also entrusted to

learning the basics of computer application- thus literacy to its fundamental becomes essential. They must users of technology and role

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models to those that they lead. It is difficult to imagine a leader who does not engage technology yet convincing teachers that it is important. According to Felton [1], school administrators must be capacitated to computer works. They ought to discover new updates to increase knowledge since their work demands the core of the decision, especially in the workplace. Frequent and immediate access to computers to get data from assessment to student's learning, or evaluating the roles of employees [2][3], monitoring progress or its outcome. Levels of access to ICT are significant in determining levels of use of ICT by principals. Therefore, principals who had regular access to computers use them more in their administrative and instructional tasks [4].

Management and leadership skills are vital roles for the successful planning of technology [5]. It is through this leadership that the needs of the school are identified and communicated. School administrators are expected to fully embrace the vision and concept in technology [6]. Further, the school as the agency of higher learning is also concerned with the implementation of technology [7].

To build on the country's strengths and gain greater momentum in the nation's quest for rapid and sustainable development and growth, the Philippines enhanced its competitive edge in ICT by (a) building the physical infrastructure to ensure wider, faster, and reliable access at low cost to 2004, information and other ICT resources, especially, in the underserved rural areas; (b) enhancing the policy and legal environment to promote ICT development and universal access to information and other ICT resources; (c) developing the country's human potential to enable Filipinos to compete in the digital age; and (d) promoting the use of ICT to streamline business processes and modernize government operations for greater productivity [8].

One of the aims of the Department of Education is to harness ICT in education. There is a need to equip its young people and its workforce with the skills they need to succeed and support the institution. There is a need to look at our education models and reassess the status of information technology adopted by the administrators and faculty, whether there is a

need to retool to meet the challenges of the Information Age.

At present, the Philippine education sector has a variety of ICT for pedagogy initiatives. Beginning 1996, the Department of Education has embarked upon an understanding that would provide computers to all public secondary schools in the country. Supported by DepEd's budget of 110 million pesos as well as infusions from the government of Japan and the Republic of Korea, DepEd's computerization program not only includes computerization and connectivity but also teacher professional development, technical training, content development, and strategic planning.

In support of the present thrust of the Department of Education, DepEd Memorandum No. 526, s. 2009 was issued in connection with the implementation of the ICT4E Program and as part of the continuing provision for relevant professional development programs that prepare ICT competent teaching and non-teaching staff, the DepEd in coordination with SEAMEO VOCTECH conducted an in a country training program on Managing Teaching and Learning through ICT [8].

For its part, the Commission on Information and Communication Technology (CICT) has been an active player in the ICT movement since its inception. It has launched several initiatives in collaboration with DepEd such as the Broadband Deployment Program, which intends to provide broadband access to public secondary schools; Community Centers (CeC), the iSchool Program, which will provide computers, connectivity, content for basic education to Community eCenters, and the eSkwela Program, the on formal and alternative learning counterpart of iSchools [9].

The acquisition of ICT facilities by the various schools in the country and its integration in the classroom is indeed a move in the right direction. The schools should have enough ICT resources to be used by the administrators and faculty. School personnel should also be computer literate. They should possess the necessary ICT skills/competencies. These are some of the factors to be considered. The study aimed to assess the information-communication technology literacy of school principals. Demographic profile, level of performance of the

school principals, and ICT problems and needs with the hope of developing intervention scheme. Hence, it is on this premise that the researcher finds it necessary to conduct this study.

Materials and Methods

A survey questionnaire was used as the principal data-gathering instrument to obtain data relevant to this study [10]. The researcher considered the principals/administrators of the randomly selected central schools in the 13 divisions of the Department of Education in Region VIII as the respondents in this study. There were 101 central principal respondents, 101 district supervisors, and 303 grade I, III, and VI teachers involve as evaluators/rater on the performance of the central school principals. Data collected were tabulated and analyzed through frequency counts, mean, percentage of distribution, and t-test.

The researcher started the gathering of data by asking permission from the Regional Director of DepEd Region VIII and from the Schools Division Superintendents of all divisions to allow him to administer the survey questionnaire. Upon approval of the letter request, the researcher distributed the questionnaire personally to the respondents particularly in the 13 divisions included in this study. While in the divisions of Leyte and Samar, upon approval of the letter request by the school's division superintendents, the distribution of the questionnaires was done through the help of hired enumerators. The retrieval of the questionnaires follows after one (1) week.

To ensure the validity and reliability of the instrument, a dry run was conducted in the central schools of the five (5) districts of the Southern part of the Division of Eastern Samar which include the districts of Guiuan East, North, and South, Mercedes, Salcedo I and II. Six (6) copies of the instrument were distributed to the central school principals only for Part I which was the profile, Part II level of ICT skills, Part III extent of ICT utilization, and Part V needs and problems on ICT. While Part IV performance of principals no need to validate since the items were adopted from the standardized form. The purpose was to identify which item(s) needed

revision, improvement, or deletion. Feedbacks from the dry run of the instrument were used for its improvement.

A survey questionnaire was used as the principal data-gathering instrument to obtain data relevant to this study. However, some items were taken from standardized surveys especially on the level of skill on information and communications technology (Maryland Technology Literacy Standards for Students) and performance of the central school principals (DepEd PASSA Form B-2) [11][12]. It consisted of 5 parts. Part 1 contains the items on the principals' profile. These include sex, age, educational attainment, income, computer-related training attended, computer ownership, years of computer ownership, and attitude towards computer literacy. Part II focused on the level of Information and Communications Technology (ICT) skills of central principals in areas of computer use, database, digital imaging, email, multimedia presentations, spreadsheets, visual organizers, web pages, and word processing. Part III entails the extent of ICT utilization as to professional and personal tasks. Part IV likewise is used to gather information on the level of performance of the central school principals using the Performance Appraisal System for School Administrators (PASSA) along with the following indicators, occupational competence, professional and personal characteristics, attitude and punctuality, and plus factors as rated by the central principals themselves, immediate supervisor and grades I, III and VI teachers. Part V on the other hand, gathers information on the ICT-related needs and ICT problems of the school principals.

Results and Discussion

This study investigated the profile of the central school principals in terms of sex, age, educational attainment, monthly income, computer-related training attended, computer ownership, and attitude towards ICT. The succeeding tables present the profile distribution of respondents.

Sex

As seen in Table 1, there were more female

central principals with 65 or 64.4 percent in comparison to male with 36 or 35.6 percent of the total respondents. With this result, it can be said that central schools in Region VIII are dominated by female principals. Female principals have less tension and by nature are soft and motherly. Moreover, female principals/school heads are more inclined to lead the schools.

Age

Table 1 also reveals that one (1) central principal is a young adult or 1.0 percent of the total respondents. While 4 or 4.0 percent belonged to the young adult's group. In like manner, 43 or 42.5 percent belonged to middle age and 53 or 52.5 percent belonged to early later years. The data implies that most of the central principals had more experiences, exposures

and were mature enough to face the challenges and consequences in leading schools.

Educational Attainment

The data on educational attainment in Table 1 shows that 13 or 12.3 percent graduated doctoral degree, 33 or 32.7 percent have MA with Ph. D./Ed. D. units, 26 or 25.7 percent graduated master's degree, 25 or 24.7 percent have MA units while only 4 or 4.0 percent with bachelor's degree only. However, it was very evident that most of the central principals graduated with a master's degree with 59 or 58.4 percent among the respondents. It only reveals that most of the central principals have satisfied the requirement for principal/administrator which is to have a master's degree.

Table 1. Profile of Central School Principals

Profile Variables	Frequency	Percent
Sex		
Male	36	35.6
Female	65	64.4
Total	101	100.0
Age		
≤30 years old	1	1.0
31-40 years old	4	4.0
41-50 years old	43	42.5
≥51 years	53	52.5
Total	101	100.0
Educational Attainment		
Bachelor's Degree	4	4.0
BD with MA/MS Units	25	24.7
Master's Degree	26	25.7
MD with Ph. D./Ed. D. Units	33	32.7
Ph. D./Ed. D.	13	12.9
Total	101	100.0

Monthly Income

It can be gleaned from Table 2 that 57 or 56.5 percent were most of the central principals had a monthly income of 36,501 - 42,500. This means that these principals belong to principals II and III positions. While 33 or 32.7 percent of the central principals had a monthly income range of 33,500-36,500 in which they belong to principal 1 position. However, 11 or

10.9 percent of the respondents had a monthly income ranging from 42,501 and above in which this salary is for principal IV. It only shows that the monthly earnings of school principals were sufficient enough to support the simple and healthy lifestyles of the central principals. It is because principals occupied one of the prominent positions in the government.

Table 2. Frequency Distribution on Monthly Income

	Frequency	Percentage
33,501-36,500	33	32.7
36,501-42,500	57	56.5
≥42,501	11	10.9
Total	101	100.0

Computer-Related Training Attended

Table 3 below presents the related ICT training attended by school principals. Gleaned from the table that the majority of the principals have no ICT training which was 49 or 48.51 percent of the total respondents. Only 38 or 37.62 percent has ICT training for 50 hours and below, 8 or 7.92 percent has 51-100 hours training on ICT, 4 or 3.96 percent has ICT training for 101-150 hours, and only 2 or 5.94 percent trained on ICT for 151 hours and above.

Table 3. Computer Related Training on ICT of School Principals

Number of Hours	Frequency	Percentage
≥151	2	5.94
101-150	4	3.96
51-100	8	7.92
≤50 hours	38	37.62
None	49	48.51
Total	101	100

Years of Computer Ownership

Table 4. Years of Computer Ownership of Principals

Years Number	Frequency	Percent
None	13	12.87
1-3	49	48.51
4-6	34	33.66
≥7	5	4.96
Total	101	100

Table 4 presents the numbers of years central principals owned computers. It can be gleaned from the table that there were 49 or 48.51 percent of the principals owned computers for 1-3 years, 34 or 33.66 percent owned

computers for 4-6 years, and only 5 or 4.96 percent owned computers for 7 or more years, while there were 13 or 12.87 percent has no computer at all.

Number of Computers Owned

In terms of a computer owned by the central school principals, Table 5 shows that 80 or 79.21 percent of the principals owned 1-3 computers, 5 or 4.95 percent has 4-6 computers, 3 or 2.97 percent of the principals owned 7 or more computer units. While 13 or 12.87 percent still have no computer. This indicates that the majority of the central principals in Region VIII owned at least 1 unit of the computer that was probably used in the day-to-day discharge of their functions.

Table 5. Number of Computer Owned by School Principals

Number	Frequency	Percentage
None	13	12.87
1-3	80	79.21
4-6	5	4.95
≥7	3	2.97
Total	101	100

Attitude Towards Computer Literacy

It can be seen in Table 6 the attitudes of central school principals towards ICT. Results indicate that 51 or 50.5 percent of central principals have favorable attitudes towards ICT with an overall mean of 3.56. Furthermore, 47 or 46.5 percent of the respondents have a moderately favorable attitude towards ICT.

Table 6. The attitude of Central School Principals Towards ICT

Category	Frequency	Percent
Highly Favorable Attitude	3	3.0
Favorable Attitude	51	50.5
Moderately Favorable Attitude	47	46.5
Less Favorable Attitude	0	0
Not Favorable	0	0
Total	101	100.0

On the other hand, there were 3 or 3.0 percent of the respondents who have a highly favorable attitude towards ICT. on items ' principals' use of ICT strongly support the teachers' needs for utilization of teaching strategies; ICT provides valuable resources and tools to support principals' professional needs and ICT provides principals' efficient presentation and communication tools. But a less favorable attitude towards ICT was noted with a computed mean of 2.18 on item: a job using computers is disgusting." This signifies that the majority of the central principals have a positive attitude towards ICT. However, some have that negative attitude due to the fact may be that based on the age data, the majority of them belonged to an early later year of age wherein they might no longer have the interest to manipulate electronic gadgets.

The previous study showed the entry to discursive tools helps predict IT literacy [13]. Education has a positive impact on the degree of access. The study examined English skills and

experience, education is eliminated as a significant factor, while professional experience working with computers (loosely defined) is the most important factor. The principals who have higher degrees could have a positive attitude towards computer literacy.

Moreover, Olsson got the results gender, youth, and young adults tend to have less access to and knowledge of computers and technology [13]. Age is a strong negative predictor of both literacy and access. Gender is an important factor in the degree of access. There are no substantial gender differences among Philippines citizens when it comes to access. Probably, sex makes a difference that women have poorer literacy skills than men.

Level of Performance of the Central Health School Principals

The study determined the level of performance of the central school principals in Region VIII as rated by themselves, by their immediate supervisor, and by the grade I, III, and VI teachers (Table 7).

Table 7. Level of Performance of the Central Health School Principals as Perceived by Teachers, District Supervisor, and Principals Themselves.

Indicators	Teachers		Immediate Supervisors		Principal Themselves	
	Mean	Description	Mean	Description	Mean	Description
I. Occupation Competence						
A. Instructional Supervision	4.51	Outstanding	4.30	Very Satisfied	4.34	Very Satisfied
B. Development/ Implementation of Educational Programs	4.33	Very Satisfied	4.11	Very Satisfactory	4.27	Very Satisfied
C. Administrative Management	4.31	Very Satisfied	4.12	Very Satisfied	4.34	Very Satisfied
D. Research	3.40	Satisfied	3.14	Satisfied	3.33	Satisfied
E. Performance Assessment	3.87	Very Satisfied	3.85	Very Satisfied	3.62	Very Satisfied
II. Professional and Personal Characteristics	4.47	Very Satisfied	4.26	Very Satisfied	4.51	Outstanding
III. Attendance and Punctuality	4.48	Very Satisfied	4.22	Very Satisfied	4.44	Very Satisfied
IV. Plus Factors	3.39	Satisfied	3.05	Satisfied	3.09	Satisfied
Overall Mean	4.11	Very Satisfied	3.86	Very Satisfied	4.01	Very Satisfied

Teachers

The result shows that teachers rated their central principals to be outstanding on indicators of instructional supervision with a mean of 4.51. Very satisfactory on areas of development/implementation of educational programs with a computed mean of 4.33, 4.31 on administrative management, 3.87 on performance assessment, 4.47 on professional and personal characteristics, and 4.48 on attendance and punctuality. But principals were rated satisfactory by teachers on indicators of research and factors with computed mean of 3.40 and 3.39 respectively. However, the overall rating of teachers to their principals was very satisfactory with a mean of 4.11.

Immediate Supervisor

On the other hand, the immediate supervisors rated their central principals to be very satisfactory on indicators of instructional supervision with a mean of 4.30, 4.11 on development/implementation of educational programs, 4.12 on administrative management, 3.85 on performance assessment, 4.26 on professional and personal characteristics and 4.22 on attendance and punctuality. While the other indicators such as research and plus factors were rated also as satisfactory with the computed mean of 3.14 and 3.05. The overall rating of supervisors to principals was very satisfactory with a mean of 3.86.

Central Principals

With regards to the rating of central principals on their own performance along with the different performance indicators, they rated themselves outstanding on the indicator of professional and personal characteristics with a mean of 4.51. A rating of very satisfied with the mean of 4.44, 4.27, 3.62 respectively on indicators of attendance and punctuality, development/implementation of educational programs, and performance assessment. Instructional and administrative management has a similar rating with a mean of 4.34 which means very satisfactory. Principals rated their performance on the indicators of research and plus factors in the same rating of teachers and

supervisors as satisfactory with a mean of 3.33 and 3.09 respectively.

It can be deduced from the table that teachers and district supervisors rated their central principals very satisfactorily in most performance indicators with an average mean of 4.11 and 3.86. Likewise, central principals rated their self's very satisfactory majority of the performance indicators with an average mean of 4.01. However, teachers, supervisors, and central principals have a common rating of satisfactory on indicators of research and plus factors. These signify that central principals possess the necessary managerial skills on the most performance indicators hence they performed very well on their functions. However, principals lack competence in areas of research and plus factors (technical assistance, the conduct of seminars, act as a trainer, and acquisition of resources from other sources). Principals need to increase their performance by empowering their staff and then managing plus factors [10][14]. Therefore, there is a need for principals to improve/enhance their competence along with these performance indicators so as for them to deliver their services excellently.

ICT Needs of the School Principals

This part of the study presents the ICT needs of the central principals as another variable being investigated in this study. The different ICT needs are presented in Table 8.

Central principals able to identify ICT needs as seen in table 8. It can be noted that ICT needs have an average mean of 3.76 which means "moderately needed". Increasing budget allocation for ICT is considered primary needs among respondents as it has a mean of 3.97, followed by 3.91 mean for training on ICT program, 3.91 for a troubleshooting workshop, and 3.81 mean on availability of computer supply in a nearby municipality. A mean of 3.49 means "needed" on items enough space for computer laboratory and stable supply of electric current. In line with this study, the previous study showed the student who has accessed the ICT would increase in skills with the level of the study [15]. ICT is very important to increase the student's skill and knowledge.

Table 8. ICT Needs of School Principals

Statement	Mean	Description
Enough space for a computer laboratory.	3.49	Needed
An adequate number of computers.	3.73	Moderately Needed
Upgraded computer hardware/software.	3.78	Moderately Needed
Stable supply of electric current.	3.49	Needed
Easy access to the internet and another website.	3.74	Moderately Needed
Licensed computer program/software.	3.69	Moderately Needed
Training on recent ICT program/software.	3.95	Moderately Needed
Workshop on troubleshooting as well as repair and maintenance.	3.91	Moderately Needed
Increase budget allocation for ICT materials.	3.97	Moderately Needed
Availability of computer supplies in a nearby municipality.	3.81	Moderately Needed
Overall Mean	3.76	Moderately Needed

ICT-Related Problems of the Principals of Health School

This part of the study presents the ICT-related problems of the central principals as another variable being investigated in this study. The different ICT problems are presented in Table 9.

In like manner, Table 9 indicates that principals have a moderately felt problem on ICT with an average mean computation of 2.92 in the qualitative description. Based on their

priority, the insufficiency of the number of computer units was their primary problem that bears 3.23 computed mean, followed by computer units infected with the virus with a mean of 3.11; 3.10 mean for slow processing and downloading of files, brownout with a mean of 2.98, obsolete system software with 2.86 mean, limited laboratory space and printer has no ink with similar mean of 2.85, computer with defective keyboard and saves files has also the same mean of 2.70.

Table 9. ICT-Related Problems of School Principals.

Statements	Mean	Description
The computer laboratory has limited space and the schedule is not clear.	2.85	Moderately felt problem
Computer units are not or just enough to cater to the number of teachers and pupils.	3.23	Moderately felt problem
Slow processing and downloading of files.	3.10	Moderately felt problem
Brownout.	2.98	Moderately felt problem
Computer units are infected with the virus.	3.11	Moderately felt problem
The printer has no ink.	2.85	Moderately felt problem
Computers with defective keyboard or mouse.	2.70	Moderately felt problem
Save files are lost.	2.70	Moderately felt problem
Obsolete system software and virus scanner.	2.86	Moderately felt problem
Out modeled network software.	2.81	Moderately felt problem
Overall Mean	2.92	Moderately felt problem

ICT helps to develop the standard of the health school curriculum. Through the use of informatics, there is a benefit in fully integrating it into the educational and clinical encounters in that the topic is seen as an essential building block to the professional healthcare practice and as a complement to many other clinical subjects. To reach a quicker and greater goal, it might be in the best interest of the Philippines to further integrate the use of informatics (information technology) into their health education [16].

One of the most important things of educators is to help students acquire technological ability. But there is a deficit of modeling in this vast area of technological skill-building. Much more testing is needed in order to bring technologies to a higher level, including problem-solving and critical thinking. We suggest that educators have higher competencies. Educational Institutions will need to ensure that students are ready for the technology-enriched nursing environment, and this will require them to have the technological literacy necessary to do their work [17].

Conclusion

Based on the findings, it is recommended that school principals or academic heads must undergo a series of continuing education programs concerning Information-Communication Technology (ICT). Literacy skills of school principals as a contributory factor may lead to effective instruction and facilitate managerial functions in the school setting. Training for principals/school heads should not only focus on how to operate computers, but to use technology as a tool for organization, communication, research, and problem-solving. They should spearhead the organization to its full potential and advance concepts in terms of technology and vision. A similar/parallel study may be conducted to further establish the validity of the findings of the study by using varied samples, variables, sampling techniques, and respondents.

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