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**Ict Literacies of Teachers in the Division of Northern Samar: A Meta-Analysis****Liezel Francisco Corrige**

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Abstract: This meta-analysis on ICT literacies of the teachers in the Division of Northern Samar was based on the studies available in the UEP-Graduate Studies for over a five-year period. It looked into the profile of the teachers in terms of age, sex, ICT-related trainings, and personal ICT devices. This study also determined the level of ICT literacies of teachers in terms of ICT competence, extent of ICT integration, and level of ICT utilization.

Studies showed that smartphone was the most common ICT device of the respondents and this was also what they preferred using as an aid in their teaching. It was also recorded that the respondents also owned laptops and desktop computers that they used in the teaching-learning process.

Most of the respondents of the studies were only at the average level when it comes to ICT competence, except for the findings of Diaz (2016) where the respondents were only at the basic level, and the study of Virtudes (2018) who found out that the respondents were already at the advance level. This can be attributed to the lack of ICT-related trainings. In terms of the extent of ICT integration, results revealed that the teachers were already knowledgeable enough of the capabilities of computers to classroom applications, but were not proficient enough using computers to support the teaching-learning process. Even if the respondents had knowledge in using ICT, they were not maximizing these technologies in the teaching-learning process. Others were not comfortable in using ICT because they were still not experts, and most of them had only an average literacy on ICT. They still wanted to use strategies which they were comfortable with, and ICT was out of the context. Results confirm that teachers are mostly using ICT only as aids in generating electronic reports, record of students' data and files, acquiring teaching materials through the internet, and improving their classroom. But although they can be considered literate enough to the use of ICT, they are not fully utilizing ICT into the teaching-learning process.

Keywords: ICT, ICT Literacies, Department of Education, Northern Samar Philippines, Meta-Analysis.

INTRODUCTION

Information and Communication Technology (ICT) has made great impact on the lives of the people, specifically in their work, study, and even their personal lives. ICT also made its way to the educational system and dramatically changed the way learners learn and teachers teach. One of the most important aspects of today's education is integrating ICT into instruction to address the diversity and the demands and needs of the present generation of learners who are born on the digital age.

Trainings and seminars are provided to teachers to cope with these changes while computer packages are distributed to schools through the Computerization Program of the Department of Education (DepEd).

However, teachers, although they perceive ICT as a positive way of enhancing the quality of

education, showed difficulty in accepting innovation through ICT and integrating it into the teaching-learning process. Barone and Wright state that new literacies are constantly changing and require teachers and administrators to embrace these changes. But the simple introduction of ICT within the teaching process does not automatically represent an innovative change. Integrating ICT into instruction and shifting into a new way of teaching is not always an easy task for teachers, especially to those who feel underprepared for this innovation.

In the Philippine context, the DepEd has already provided almost all schools in the Division of Northern Samar with computer packages through its computerization program. But these ICT devices are not fully utilized by the recipient schools in the Division of Northern Samar. The study of Ronato revealed that ICT is just fairly utilized along the areas of instruction, improvement of learners' capacity and improvement of classroom¹ but teachers have not exhausted the use of educational technologies². This clearly shows that teachers in the Division of Northern Samar do not fully implement ICT into the teaching-learning process.

Turbill identifies three factors as to why teachers do not use technology in their classrooms: lack of time and expertise to understand and explore software, lack of confidence, and lack of training and support. Locally, Pinca (2018) also identified factors hindering teachers on ICT usage. She mentioned some personal and institutional barriers. Among them were lack of knowledge or minimal knowledge on the use of ICT and computers, being the topmost personal barriers, and lack of educational and technical facilities, slow internet connection, and frequent power interruptions as the most common institutional barriers. These findings are supported by the study of Dineros that states that the poor ICT utilization can be traced to the fact that teachers are not literate enough to maximize the use of technology in the classroom.

Diaz found out that the ICT competence of the teachers in the central area of the Division of Northern Samar was only at the basic level. This only means that teachers are not fully ICT literate.

This study conducted a meta-analysis of researches on teachers' ICT literacies conducted in the UEP Graduate Studies for the last five (5) years. This paper introduced the themes and topics from the existing studies to gain better understanding of the barriers encountered in ICT integration and development and on the professional advancements of ICT teachers.

Objectives of the Study

The study is a meta-analysis focusing on the ICT literacies of teachers in the Division of Northern Samar. Specifically, it aimed to:

1. determine the demographic profile of the teachers in terms of:
 - 1.1. age
 - 1.2. sex
 - 1.3. ICT-related trainings
 - 1.4. personal ICT devices;
2. identify the ICT literacies of teachers in terms of:
 - 2.1. ICT competency level
 - 2.2. extent of ICT integration
 - 2.3. ICT utilization;
3. find out the problems and issues on ICT implementation;

4. determine the differences between the demographic profiles of teachers based on the studies conducted;
5. ascertain the differences between the ICT literacies of teachers in the Division of Northern Samar based on the studies conducted;
6. identify the differences between the problems and issues on ICT implementation based on the results of the studies conducted; and
7. design an ICT training matrix.

METHODOLOGY

Research Design

Meta-analysis method was used in this study to examine the similarities and differences of the previous studies on the ICT literacies of teachers in the Division of Northern Samar and eventually come up with a good training design on ICT Literacy. According to Glass, meta-analysis is a statistical method used to combine the analysis results from primary studies. In addition, meta-analysis can be explained as the method of combining the results of multiple studies which are independent from each other and making statistical analysis of the findings obtained³. Furthermore, meta-analysis is the most reliable statistical method for mixing the result of a collection of independent researches.

In short, meta-analysis is an analysis of the analyses⁴. Cooper⁵ explains the meta-analysis process in 7 stages: (i) formulating the problem; (ii) researching the literature; (iii) collecting information about the studies; (iv) evaluating the quality of the studies; (v) combining the results of the studies and analyzing them; (vi) interpreting the results of the analysis, (vii) reporting and presenting the results of the studies.

This meta-analysis synthesized the existing body of research that determined the ICT literacies of teachers in the Division of Northern Samar. The following questions were sought for this purpose:

1. What is the level of ICT literacies of teachers in the Division of Northern Samar?
2. What are the issues and problems on ICT implementation?

Data Analysis Strategies

Interpretation of the data was only on a qualitative level based on the findings of the studies. Quantitative meta-analysis was unable to be performed because of the various and different variables present in each independent study.

On the Demographic Profile of the Respondents, under age of the respondents, only Diaz (2016), Anquilo (2018), Virtudes (2018), Balanquit (2019), and Dineros (2019) presented data while, Ronato (2015) and Pinca (2018) did not. For the sex of the respondents, only Diaz (2016), Virtudes (2018), and Balanquit (2019) presented such data, while Ronato (2015), Pinca (2018), Anquilo (2018), and Dineros (2019) did not present such data in their studies.

For the ICT-related trainings, only Diaz (2016), Anquilo (2018), Virtudes (2018), Balanquit (2019) and Dineros (2019) presented such data in which were differently categorized, while Ronato (2015) and Pinca (2018) did not show results in their studies.

On the Personal ICT devices, only Anquilo (2018), Virtudes (2018), Balanquit (2019), and Dineros (2019) presented data which were also differently categorized in each independent study, while Ronato (2015), Diaz (2016), and Pinca (2018) did not present such data in their

studies.

On the ICT literacies of the respondents under competency level, only Diaz (2016), Virtudes (2018), Anquilo (2018), Balanquit (2019), and Dineros (2019) presented data. Furthermore, only Diaz (2016) and Virtudes (2018) used the same set of questionnaires with the same categories and domains. On the other hand, Anquilo (2018) and Dineros (2019) also used the same set of questionnaires with the same categories of skills, which include the operational skills, constructing and demonstrating knowledge, communication and collaboration skills, and independent learning. While Ronato (2015) and Pinca (2018) did not present such data.

On the ICT literacies of the respondents under the extent of ICT Integration, only Pinca (2018), Anquilo (2018), Virtudes (2018) and Balanquit (2019) presented such data in their studies. Ronato (2015), Diaz (2016), and Dineros (2019) did not present such data in their studies.

On the ICT Utilization, only Ronato (2015), Pinca (2018), and Dineros (2019) showed results. While Diaz (2016), Anquilo (2018), Virtudes (2018), and Balanquit (2019) did not.

On the Issues and Problems on ICT Implementation, only Diaz (2016), Pinca (2018), and Balanquit (2019) showed and presented results in their studies, having different categories and indicators from each independent study, while Ronato (2015), Anquilo (2018), Virtudes (2018), and Dineros (2019) did not present results.

However, for those studies having the same variables, the t-test for independent samples was used to test for significant difference on ICT Literacies between studies.

RESULTS

The overall respondents of the seven (7) articles were composed of 896 teacher-respondents wherein two (2) studies/articles had an undetermined number of respondents. A majority of the respondents were considered novice in the field of teaching since they belonged in the youngest age bracket. Based on the articles, three (3) studies determined the sex of the respondents and a majority of them are female.

All of the studies have agreed that almost all of the respondents have undergone at least one (1) training, however, a great number of respondents who still have no training on ICT.

A majority of the respondents had their own smartphones and an enough number of respondents who had laptops which they can use to aid their instruction.

As to the ICT literacies of the teachers, they were confirmed to be literate enough to perform the basic ICT operations and their uses. However, they were not integrating ICT into its maximum level since their extent of utilization was only to the moderate extent. The use of ICT was mostly on the generation of electronic reports, recording of the students' information, encoding of grades, and preparation of the teaching aids.

The most common issues or problems recorded were lack of trainings/seminars, minimal knowledge on the use of ICT tools, and deficiency of ICT facilities. These findings agree to the results revealed by Adegbenro, et al (2017) who posited that ICT integration is affected by factors like insufficient ICT tools, teachers' lack of computer confidence, and lack of professional teacher development programs on ICT integration in the classroom.

Conclusions and Implications

Most of the teachers in the Division of Northern Samar belong to the younger generations and a large number of teachers are female which can be implied that teaching profession is a female-dominated one.

A majority of the respondents own a smartphone and others have laptops that they use to aid in the teaching-learning process to improve the quality of their instruction.

On the trainings of the teachers, most of them have only undergone at least one (1) training and a

large percentage of teachers have not attended any ICT training yet which can be the reason why teachers are only at the basic level and can be considered just literate enough to perform basic ICT operations for generating of the electronic reports, storing students' information, encoding of grades, and printing of test papers and not the advanced operations of ICT. This implies that the uses and functions of ICT to improve the quality of instruction and provide quality services to the pupils have not yet been maximized because teachers are not using this directly as aids in teaching such as utilizing the projectors and other audio-video equipment in school during instruction.

The lack of ICT skills of the teachers can be attributed to the fact that they still lack trainings on ICT especially those teachers who are not born on the digital age. Lack of trainings/seminars is considered as one of the biggest factors that hinder the utilization of ICT into the teaching and learning process.

Recommendations

Based on the findings of this study, the following recommendations are forwarded:

1. All teachers should attend an intensive ICT training/seminar to improve their ICT literacies. These trainings and seminars should be at the school level and the speaker/trainer should be an IT expert/skilled individual that can discuss and deliver relative topics to the teachers.
2. School heads should conduct a regular LAC Session about ICT to reinforce the skills that they have learned and in order for the teachers to be more familiar with ICT tools and equipment.
3. Department of Education should provide quality ICT facilities to address the scarcity of equipment.
4. Teachers should have regular interaction with the computer or hands-on activities to increase their confidence on the use of ICT and minimize their "fear" of technologies.
5. Integration of ICT into instruction is highly encouraged not just to improve the quality of teaching but also for the teachers to apply what they have learned in the trainings/seminars provided by the Department of Education.
6. Proper and immediate actions should take place after the monitoring and evaluation of the issues and problems on ICT integration.
7. Further study maybe conducted focusing on the extrinsic and intrinsic factors hindering the integration of ICT into instruction.

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