Teacher's Information and Communication Technology (ICT) Literacy, Administration's Technological Support, and Teacher's Competence

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ABSTRACT
This descriptive study determined how the teacher's Information and Communication Technology (ICT) literacy and the University administration's technological support contribute to improve teacher's competence in the delivery of instruction. A correlational design utilizing a researcher-made survey questionnaire was employed—involving 102 teacher-respondents selected using the simple random technique. Results revealed that there is a significant relationship among the teachers' level of ICT literacy, technological support, and their level of competence. This study then recommends that teachers must align their potentials for significant and positive use of ICT, maximize the utilization of Information and Communication Technology (ICT) and consider the creation of program to maximize use of Information and Communication Technology (ICT) at school.

Keywords:
Information Communication Technology (ICT), Literacy, Administration, Technological Support, Teacher's Competence
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INTRODUCTION

Schools, colleges and universities worldwide use varied sets of Information and Communication Technology (ICT) paraphernalia to converse, produce, spread, pile up, and deal with information. In some contexts, ICT has also become essential to the teaching-learning interface through such approaches replacing chalkboards with interactive digital whiteboards/glassboards, using students' own smartphones or other devices for knowledge during class hours, and the "flipped classroom" model where students watch lectures at home on the computer and use classroom time for more interactive drills (Garza, 2014).

As the world evolves, the current society expects much from teachers. This is observed on how teachers are trained from pre-service and during service. One of these expectations is having adequate ICT skills to be used for the teaching and learning process although it is equally important to press on the fact that teachers may not be fully prepared for using ICT skills (Mcgraw& Care, 2012).

Studies have proved that teachers' cognition and personality may make instruction better and nurtures students' learning. This entails that teachers teach well to students whose nature are diverse. Specifically, Mardapi and Harawan (2018) identified test, training programs, performance, and portfolio as some of the measures of teacher competence.

From these varied perspectives that the authorities presented in relation to the central problems under study, the researcher aimed to determine the teacher's Information and Communication Technology (ICT) literacy and technological support from the administration and how these helped improve the competence in the delivery of instruction of the faculty from different campuses. This study will provide information about the importance of assessing one's self in terms of competence and literacy in using information and communication technology in the context of teaching, assessing one's self in terms of one's competence and literacy in using information and communication technology in the context of teaching. For the administration, this study will provide relevant information that may be utilized in planning and developing skills-development activities aimed at increasing the technological competency of their roster of faculty.

This study was grounded on the theory of competence motivation that centers on the idea

that people are driven to engage in activities to develop or demonstrate their skills. According to this theory, success or mastery of a task can lead to an overall increase in the perception of one's own competence. However, if the person is continually failing at a task or does not receive peer support, it can have the opposite effect. That is why it is essential to encourage challenging but achievable goals. If the goals are too easily achieved, the employee can become bored or even embarrassed by the simplicity of the tasks they are given (Indeed, 2020).

METHODS

In this study, the descriptive-correlation design was employed. It utilized the simple random sampling technique in selecting the respondents. It involved 102 teacher-respondents utilizing a survey questionnaire which was subjected to validity and reliability testing. The reliability test obtained a Cronbach Alpha of 0.923 for the teachers literacy in Information and Communication Technology, 0.935 for the administration's technological support to the teachers and 0.884 for the level of competence of teachers in using Information and Communication Technology ICT.

To provide further direction to the present study, the null form of hypothesis was constructed stating that there was a significant relationship between the teachers' level of ICT literacy and administration's technological support. There was no significant relationship between the administration's technological support to the teachers and level of competence of the teachers in using ICT and relationship between the level of ICT literacy and level of competence of the teachers in using ICT. To arrive at scholarly findings, appropriate statistical tools were used such as weighted mean to determine the central tendency of respondents' responses to the questions posed; arithmetic mean to find the sum of all weighted means and the number of items/criteria, and standard deviation to compute for the sum of the square of the relationship between the weighted mean and arithmetic mean and Pearson's r for the relationship problem.

RESULTS AND DISCUSSION

The Teachers' Level of ICT Literacy

The results indicated that the teachers were indeed knowledgeable in the utilization of technology for them to meet the educative demands of the present time as evidenced by a 3.48 average weighted mean for their level of Information and Communication Technology literacy.

It is worthy to note that these findings support the study of Simons et al. (2017) which discovered three clusters of media literacy for teachers, first is the use of media which refers to technical know-how of media, second is understanding media which refers to skills in the critical comprehension of media which includes higher order thinking skills on media and lastly, contributing medially which refers to crafting media messages or media itself. These are seen as essential factors in the ICT literacy of teachers.

The Administration's Technological Support to the Teachers

An average weighted of 3.12 revealed that the teachers agreed that they received technological support from their administration. This means that the administration is always in the midst to support teachers in achieving and sustaining the delivery of quality instruction to the students which can be primarily achieved through the use of advanced technology.

Correspondingly, these findings support the study of Ngavana et al. (2018) which revealed that school management truly supports and motivates the teachers to do ICT integration in their classrooms. Conversely, the full technological support may not be given due to the fact that ICT tools are expensive; hence, it was recommended that schools formulate policies which will empower the teachers to utilize them in the classroom setting.

The Level of Competence of the Teachers in Using ICT

An average weighted mean of 3.76 indicated that the teachers had very high level of competence in using ICT Comparably, these results agree with the findings of Michalakis et al. (2019) which endorsed the Education Testing Service (2007) definition of ICT competencies or skills as utilizing digital technology, communications tools, and/or networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge society".

Relationship between the Teachers Level of ICT Literacy and Administrations Technological Support to the Teachers

There was a significant relationship between the teachers' level of ICT literacy and administrations technological support. The probability value of 0.010 was less than the significance level of 0.05. This means that the higher the teachers' level of ICT literacy, the more they receive technological support from the administrator.

Undoubtedly, these results correlate with the findings revealed in the study of Siraj and Sri (2017) which concluded that among the competencies of a teacher, the mastery of teaching tools is the basic competency. This area of competence for teachers varies and all make efforts in preparing these. Further, the results showed that this, along with the format of learning implantation or lesson plan, is not a serious problem. Another finding was that what influence teachers' competence is the coaching and technical assistance by school heads. On the other hand, there may be factors which can be hindrances in developing the competence of teachers. These are lack of intention of the teachers, lack of time to share good experiences, lack of interest to create, and limited modern technology to support teaching and learning which are not religiously provided by the administration.

Relationship between the Administration's Technological Support to the Teachers and Level of Competence of the Teachers in using ICT

A p value of 0.018 was lower than the level of significance @ 0.05; hence, a significant relationship was noted. Results revealed that the more the administration provides technological support to the teachers, the higher the teachers' level of competence in using ICT.

Relatively, these findings support the Technological Pedagogical Content Knowledge model of Mishra and Koehler (2006) in Tondeur (2018) which shed light on ICT integration in teacher education. TPACK contains teacher competencies coupled with technological support which are needed to deliver ICT integrated teaching and learning. This refers to how to use technology, teaching skills, and mastery of what is taught. With this, as technological knowledge and media literacy is another aspect of teachers' competence plus the fact that they need to be supported by the administration in terms of technology.

Relationship between the Level of ICT Literacy and Level of Competence of the Teachers in Using ICT

As to the level of ICT literacy and level of competence of the teachers in using ICT, a p value of $p < .01$ was computed which resulted to an interpretation that there was a significant relationship between the level of ICT literacy and level of competence of the teachers in using ICT. The result implied that the higher the teachers' level of ICT literacy, the higher their level of competence in using ICT.

Relatively, the results conform with the study made by Uluyol and Sahin (2014) which affirmed in their study on teachers' ICT use and its motivators that incentives can help teachers make use of ICT and help them overcome difficulties in its use and improve their competence in the utilization of technology in the delivery of instruction. This entails that when the teachers' motivation is not monitored nor assisted, the teachers and learners will lack ICT skills.

CONCLUSION

This study which attempted to determine how the teacher's Information and Communication

Technology (ICT) literacy and technological support from the administration improved their competence in the delivery of instruction thereby concludes the following:

The teachers were indeed knowledgeable in the utilization of technology for them to meet the educative load of the present time. Because of this, the school administration is always in the midst to support teachers in achieving and sustaining the delivery of quality instruction to the students; all of which can be primarily achieved using advanced technology.

The teachers are more competent in the delivery of quality instruction to the students when being backed up by recent and updated technology. The higher the teachers' level of ICT literacy, the more they receive technological support from the administration.

There are also complimentary relationships between the teachers; level of ICT literacy and the technological support they receive from the school administration. The higher the teachers' level of ICT literacy, the higher their level of competence in using ICT. The more the administration provides technological support, the higher the teachers' level of competence in using ICT.

RECOMMENDATIONS:

The following future directions were drafted in response to the findings of the study:

1. Though the teachers are learned enough in the utilization of Information and Communication Technology (ICT), there is a need for the teachers to align their potentials for significant and positive use of ICT as it is indispensable in the teaching-learning process. This is anchored on the implications of the result on the teachers' level of ICT literacy especially pertaining to the use of computer hardware technology which resulted to a low score in the rating. Further, it is recommended that they maximize the utilization of Information and Communication Technology (ICT) in honing their craft as facilitators of learning in the classroom which in effect would help the students to be more knowledgeable in local and global issues related to their disciplines.

2. The administration may consider the creation of program or plan which organizes and guides the Information and Communication Technology (ICT) work at school that would be beneficial not only for the teachers but also for the students and entire members of the school community. This is anchored on the result of the administration's technological support to the teachers which showed that there is a weak support on ICT programmes and plans in the schools. Information and Communication Technology (ICT) contributes to the improvement of the teachers' achievement and performance in the delivery of instruction in the classroom; it will also increase their ability to interact well with their students.

3. As this present study had a small sample size, the researcher recommends to obtain a larger sample in the conduct of further studies to gain an in depth understanding of the research topic. Further, because this research was quantitative in nature, the findings cannot be generalized to the whole population. Hence, replication of the present study and involving a larger number of participants may provide for a more reliable findings. Likewise, a qualitative research may be conducted to determine the factors that may influence the attitude of teachers towards the use Information Communication Technology (ICT) in the classroom.

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The Teachers' Level of ICT Literacy

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. I am familiar with the basic computer literacy like MS Word, Outlook and PowerPoint.	3.82	Very High(SA)	1
2. I manage to back-up created share and save on computers.	3.77	Very High (SA)	3.5
3. I create online project work and activities.	3.53	Very High (SA)	8
4. I access on social networking skills; like chatting online, writing blog and sending tweets and ready if they ask question.	3.71	Very High (SA)	5
5. I integrate the programs for word processing, film, photo editing, music	3.37	High (A)	10

creation and drawing.			
6. I know how to use online services (public services, e-banking, e-shopping, e-training).	3.60	Very High (SA)	6
7. I know the advanced features of several online communication tools (Skype services and shared services.	3.54	Very High (SA)	7
8. I know about the information online using different search engines (Google, bing, etc.).	3.78	Very High (SA)	2
9. I am knowledgeable of social media, networking sites and online collaboration tools.	3.77	Very High (SA)	3.5
10. I can identify the different parts of the updated technology.	3.22	High (A)	12
11. I can read and write simple computer programs	3.17	High (A)	13
12. I can read and write simple computer programs.	3.14	High (A)	14
13. I can use computer hardware technology.	3.33	High (A)	11
14. I can recognize the limits of solving educational problems using the computer.	3.41	High (A)	9
15. I can discuss the historical development of computer technology for education.	3.03	High (A)	15
Average	3.48	High (A)	

The Administration's Technological Support to the Teachers

Indicators	Weighted Mean	Verbal Interpretation	Rank
The administration provides:			
1. programme or plan which organizes and guides the ICT work at school.	2.84	Agree	11.5
2. yearly courses of action about ICT included in Annual Investment Plan.	2.99	Agree	6
3. access to world wide web through stable wifi connections.	3.25	Agree	4
4. accessory hardwares like printers, speakers, scanners and the like.	2.91	Agree	9.5
5. online learning resources like online softwares where teachers and students can actively interact even outside	3.48	Agree	2

school.			
6. audio visual resources like overhead projectors and smart TVs for maximum participation.	2.95	Agree	7
7. assistance and troubleshooting services to the provided digital tools.	2.91	Agree	9.5
8. hands- on training on the effective use of technology.	3.29	Agree	3
9. school web site showing the school's profile and progress.	3.52	Strongly Agree	1
10. individual online account where the teacher can receive or send emails including school memos, updates schedules and even salary details.	2.94	Agree	8
11. professional learning resources for teachers in the use of ICT.	2.62	Agree	15
12. adequate number of computers connected to the Internet.	2.72	Agree	13
13. school rules and criteria about the use and correct support of digital resources (ALTHIA, netbooks, smartphones, tables, and so on).	2.84	Agree	11.5
14. availability of qualified technical personnel to support the use of ICT.	2.63	Agree	14
15. teachers with incentive to integrate ICT use in their teaching.	3.00	Agree	5
Average	3.12	Agree	

The Level of Competence of the Teachers in Using ICT

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. I can properly turn on and shut down a computer.	3.98	Very High (SA)	1
2. I can start and exit a computer program.	3.93	Very High (SA)	3.5
3. I can record and edit sounds.	3.53	Very High (SA)	13
4. I can print a document using a printer.	3.92	Very High (SA)	5
5. I can create a basic Word document.	3.93	Very High (SA)	3.5
6. I can copy, cut and paste text in a document.	3.91	Very High (SA)	6
7. I can change font style and size in document.	3.94	Very High (SA)	2
8. I can create a basic Excel spreadsheet.	3.83	Very High (SA)	10
9. I can create a simple presentation using PowerPoint.	3.89	Very High (SA)	7

10. I can create a simple database using Access.	3.19	High (A)	15
11. I can send and receive attachments through e-mail messages.	3.82	Very High (SA)	11
12. I can search for information online using a Web search engine.	3.85	Very High (SA)	8
13. I can download and save files from the Web (e.g. text, graphic, PDF files).	3.84	Very High (SA)	9
14. I can use a video conferencing tool on the Web.	3.54	Very High (SA)	12
Average	3.76	Very High (SA)	

Relationship between the Teachers Level of ICT Literacy and Administrations Technological Support to the Teachers

Indicator	Pearson r	p-value	Interpretation
Teachers Level of ICT Literacy and Administrations' Technological Support to the Teachers	0.253 Low correlation	0.010	Significant
Significant @ 0.05			

Relationship between the Administration's Technological Support to the Teachers and Level of Competence of the Teachers in using ICT

Indicator	Pearson r	p-value	Interpretation
Administrations Technological Support to the Teachers and Level of Competence of the Teachers in using ICT	0.234 Low correlation	0.018	Significant
Significant @0.05			

Relationship between the Level of ICT Literacy and Level of Competence of the Teachers in Using ICT

Indicator	Pearson r	p-value	Interpretation
Level of ICT Literacy and Level of Competence of the Teachers in Using ICT	0.695 Moderate correlation	$p < .01$	Significant