Relationship Between Competency And Utilization Of Communication Technologies Among Technical-Vocational Strand Senior High School Students

Section A-Research Paper

RELATIONSHIP BETWEEN COMPETENCY AND UTILIZATION OF COMMUNICATION TECHNOLOGIES AMONG TECHNICAL-VOCATIONAL STRAND SENIOR HIGH SCHOOL STUDENTS

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Abstract

The study established relationship between competency and utilization of Information -Communication Technology (ICT) in Technical Vocational Livelihood (TVL) teachers in senior high schools. Through descriptive–correlational method, the study is conducted to selected senior high schools in Region VIII offering TVL track. Validated instrument is used during survey to 146 TVL teachers in 33 senior high school institutions. Results revealed that that the utilization of ICT for teachers indicates a favorable attitude towards its application. The extent of ICT utilization as Teaching Aids and devices was oftentimes used. Teachers displayed skills competency to common ICT functions such as but not limited to digital imaging tools, emails, multi-media presentations, visual organizers, and word processing among others. There is a positively weak significant relationship between respondents' attitudes toward ICT and ICT utilization in hardware devices, software devices, and internet connectivity. Thus, the null hypothesis was rejected, concluding a significant relationship between teachers' ICT attitudes and ICT utilization. Teachers expressed that unstable internet connectivity is the topmost problem encountered. Intervention strategies such stronger connectivity and capacity trainings on the efficient use of technologies are desired to ensure uninterrupted learning and education delivery.

Keywords: competence, educational technology application, information-communication technologies.

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Introduction

Quality education is critical in ensuring that people are informed and prepared to face the challenges of globalization (Lopes & Mckay, 2020). Keeping up with the changing world is thus a joint responsibility shared by instructors and students (Ali, 2020).

RA10533 strengthened the Philippine Basic Education System by extending elementary school years and upgrading the curriculum, earning it the nickname "K to 12". It mandates one year for kindergarten, six years for elementary school, four years for junior high school, and two years for senior high school.

Literary, sports, arts and design, and technical-vocational-livelihood tracks are some of the specialized courses that senior high school students (SHS) study in addition to the core curriculum. Specifically, home economics, Agri-fishery, industrial arts, information, and communications technology (ICT) and TVL maritime are the TVL strands. At the same time, the academic strands are humanities and social sciences (HUMSS), accounting, business, and management (ABM), pre-baccalaureate maritime, and general academic (newsinfo.inquirer.net).

DepEd (2017) outlines the importance of professional standards in teachers' promotion and ongoing professional development. The seven domains teachers must possess to succeed in the 21st century are content knowledge and pedagogy, strategies for fostering literacy and numeracy, effective use of ICT, research-based knowledge and principles, mother tongue, Filipino, and English in teaching and learning, strategies for developing critical and creative thinking, and classroom teaching techniques.

One of the most common issues in ICT utilization is the need for more school facilities. These may also include critical concerns about the general welfare of teachers and students. As a result, when developing a curriculum that offers equitable and effective education, legislators and administrators must consider educational facilities' roles in helping students acquire and learn lifelong knowledge and competencies. The

Eur. Chem. Bull. **2023**, *12(Regular Issue 1), 3806 –3809*

3806

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performance and achievement of students and the standard of school facilities are clearly and directly related, and stakeholders should be aware of this.

Methodology

Design. This study used the descriptive-correlational research method to describe the relationship between variables rather than infer cause-and-effect relationships. Moreover, it describes how one phenomenon relates to another when the researcher has no control over the independent variables, which are thought to influence the dependent variable (Lappe, 2000).

A questionnaire was distributed to the study's target respondents. Data were tabulated and analyzed using frequency counts, mean, percentage of distribution, t-test, Product Moment Correlation coefficient (Pearson r), eta correlation, and point bi-serial method.

The Product Moment Correlation coefficient (Pearson r), eta correlation, and Point-Biserial Correlation Coefficient methods were used to test the null hypothesis, which stated that there is no significant relationship between the level of attitude and ICT utilization; and ICT utilization and competence. The researcher analyzed the data using MS Excel and SPSS software, including rankings, mean, and Pearson r. The level of significance for statistical tests was set at 0.05.

Research Respondents. The study's respondents were teachers in Region VIII's selected senior High schools from the five school divisions in the region to wit: Samar Division, Borongan City Division, Leyte Division, Baybay City Division, and Biliran Division

There were 146 respondents teaching Technical Vocational Livelihood (TVL) track and 20 different specializations, namely; ICT, Agricultural Fishery Arts, Cookery, Automotive Servicing, Carpentry, Electrical Installation and Maintenance, Shielded Metal Arc Welding, Agricultural Crop Production, Caregiving, Home Economics, Dressmaking, Tourism, Food and Beverage Services, Motorcycle Servicing, Animal Production, Bread and Pastry Production, Small Engine, Landscape and Maintenance, Electronic Production, Foods. A complete enumeration technique was employed for the entire population of one hundred forty-six (146) respondents.

Results and Discussion

Attitudes of Teachers toward ICT. According to the findings, 68 or 46.6 percent of the 146 respondents in the study had highly favorable

attitudes toward ICT. Similarly, 68 percent or 46.6 percent had a favorable attitude, while 10 percent or 6.8 percent had a moderately favorable attitude.

Table 1 Attitudes of Teachers Toward ICT

Attitude	Frequency	Percentage
Highly Favorable	68	46.6
Favorable	68	46.6
Moderately Favorable	10	6.8
Less Favorable	0	0
Not Favorable	0	0
Total	**146**	**100%**
Mean	**4.18**	**Favorable**

Generally, respondents preferred ICT with a computed grand mean of 4.18, showing a favorable attitude toward its application. It implies that TVL teachers were enthusiastic about ICT.

The result was closely related to the finding of Konca, A.S., Ozel, E. & Zelyurt, H. (2016) on the Attitudes of preschool teachers toward using information and communication technologies (ICT). The teachers showed a very positive attitude towards using technological tools.

It is highly important to understand the attitudes of preschool teachers toward ICT since they are among the major people that have an impact on children's learning (McCarrick & Li, 2007).

Teachers' Extent of ICT Utilization as Teaching Aids and Devices. It shown that 66 or 45.2 percent of the respondents revealed that they always utilized ICT hardware devices. While 48 or 32.9 percent of respondents oftentimes utilized ICT hardware. The remaining 12 or 8.2 percent were rarely utilized and only 1 or 0.7 percent never utilized hardware devices at all times. The overall grand mean of 3.78 was interpreted oftentimes utilized.

Out of 146 respondents, 48 or 32.9 percent always utilized ICT software as teaching aids, 53 or 36.3 percent oftentimes utilized, 24 or 16.4 percent sometimes utilized and 18 or 12.3 percent rarely utilized ICT software. While the remaining 3 or 2.1 percent never utilized ICT software as teaching aids. In the same manner, teachers oftentimes utilized software devices in their personal or work-related activities, with a computed grand mean of 3.78.

Internet connectivity was oftentimes utilized by teachers in creating online portfolios and reflecting on their own learning through ICT applications. There were 44 or 30.1 percent of the

teachers always utilized internet connectivity as teaching aids. However, 40 or 27.4 percent oftentimes utilized internet connectivity, 30 or 24.0 percent sometimes utilized, 19 or 13 percent rarely utilized, and 8 or 5.5 percent never utilized internet connectivity in classroom activities.

The overall mean for the teachers' extent of ICT utilization of the three teaching aids and devices was 3.72, interpreted as "oftentimes utilized. It implies that respondents can deliver lessons using ICT devices such as mobile phones and all available ICT equipment to ensure that learners fully comprehend the lessons.

Table 2 Extent of ICT Utilization as Teaching Aids and Devices

Level of ICT Utilization	Hardware		Software		Internet Connectivity	
	f	%	f	%	f	%
Always	66	45.2	48	32.9	44	30.1
Oftentimes	48	32.9	53	36.3	40	27.4
Sometimes	19	13.0	24	16.4	35	24.0
Rarely	12	8.2	18	12.3	19	13.0
Never	1	0.7	3	2.1	8	5.5
Total	**146**	**100.0**	**146**	**100.0**	**146**	**100.0**
Mean	**3.78**		**3.78**		**3.6**	

Teachers' Level of ICT Competence. Teachers perceived all items in computer use were highly competent, with a grand mean of 4.46. The majority of the respondents were highly competent in computer use. There were 108 or 74.0 percent belonged to highly competent, 26 or 17.8 percent belonged to competent, 10 or 6.8 percent belonged to moderately competent and only 1 or 0.7 percent of the respondent was not competent in this skill.

Results revealed that 76 or 52.1 percent of the respondents were highly competent in digital imaging tools, 38 or 26.0 percent were competent, 22 or 15.1 percent were moderately competent, 8 or 5.5 percent were less competent and only 2 or 1.4 percent were not competent. Teachers perceived the majority of the items in digital imaging tools as competent, with a grand mean of 4.10.

In terms of using emails, teachers were highly competent in replying to messages. The majority of 77 or 52.7 percent of the respondents were highly competent in e-mails. Overall, teachers were proficient in using email with a grand mean of 4.10.

Teachers were competent in multimedia presentations, including cutting, copying, and pasting texts and printing. Results revealed that 82 or 56.2 percent of the respondents were highly competent in multimedia presentation, 35 or 24.0 percent were competent, 19 or 13.0 percent were moderately competent, 9 or 6.2 percent were less

competent and 1 or 0.7 percent was not competent in the multimedia presentation. And with a grand mean of 4.12, teachers were competent in multimedia presentations.

Results revealed that teachers were highly competent in entering data into a cell. In spreadsheets, 69 percent or 47.3 percent of respondents were highly competent, 36 percent or 24.7 percent were competent, 30 percent or 20.5 percent were moderately competent, 9 percent or 6.2 percent were less competent, and 2 percent or 1.4 percent were not competent. And the overall grand mean of 4.00, which interprets as competent.

Teachers were competent in using various modes to organize ideas, such as picture-based, text-based, and outlines; and save image files in various formats (.bmp, .gif, .tif, .jpg, .html, etc.). There were 50 or 34.2 percent were highly competent, 43 or 29.5 percent were competent, 30 or 20.5 percent were moderately competent, 16 or 11.0 percent were less competent and 7 or 4.8 percent were not competent.

Lastly, Teachers were highly competent in word processing, with a grand mean of 4.30. The Majority of 94 or 64.4 percent of the respondents were highly competent in word processing.

The overall mean of teachers' competence in computer use, digital imaging tools, emails, multimedia presentations, spreadsheets, visual organizers, and word processing was 4.11, interpreted as "competent."

Table 4 Teachers' Level of ICT Competence

Level of ICT Competence	Computer Use		Digital Imaging Tools		E-mail		Multimedia presentation		Spread sheet		Visual Organizer		Word Processing	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Highly Competent	108	74.0	76	52.1	77	52.7	82	56.2	69	47.3	50	34.2	94	64.4

Eur. Chem. Bull. **2023**, *12(Regular Issue 1), 3806 –3809*

3808

Competent	26	17.8	38	26.0	46	31.5	35	24.0	36	24.7	43	29.5	31	21.2
Moderately Competent	10	6.8	22	15.1	13	8.9	19	13.0	30	20.5	30	20.5	15	10.3
Less Competent	1	0.7	8	5.5	6	4.1	9	6.2	9	6.2	16	11.0	5	3.4
Not Competent	1	0.7	2	1.4	4	2.7	1	0.7	2	1.4	7	4.8	1	0.7
Total	146	100.0	146	100.0	146	100.0	146	100.0	146	100.0	146	100.0	146	100.0
Mean	4.46		4.10		4.10		4.12		4.00		3.70		4.30	

Relationship Between Respondents' Attitudes Toward ICT and ICT Utilization. The Pearson correlation test revealed a positively weak significant relationship between respondents' attitudes toward ICT and ICT utilization in hardware devices ($r = 0.268$, $p = 0.001$), software devices ($r = 0.360$, $p = 0.001$), and internet connectivity ($r = 0.349$, $p = 0.001$). Thus, the null hypothesis was rejected, resulting in a significant relationship between teachers' ICT attitudes and ICT utilization. These findings imply that teachers' attitudes toward ICT have a significant impact on ICT utilization.

Relationship between Teachers' ICT Utilization and their ICT Competence. There was a positive, moderate to strong significant relationship between teachers' ICT utilization and their ICT competence. ICT usage in terms of hardware, software, and internet connectivity, and their computer abilities in digital imaging tools, emails, multimedia presentations, spreadsheets, visual organizers, and word processing, were all significant ($p = 0.010$). Therefore, the null hypothesis is rejected and concludes that ICT skills affect ICT usage.

ICT Encountered Problem. The top most significant problem encountered by teachers in ICT utilization was an unstable internet connection. Some teachers and students experienced Internet connection issues while taking online classes, which is one of the alternative learning modalities available through distance learning.

Conclusion
Based on the findings, the following conclusions are drawn: Teachers had a favorable attitude towards ICT usage and had competent ICT skills in utilizing it as teaching aids. As a result, it is therefore concluded that teachers oftentimes utilize the available ICT equipment in their classroom instructions.

It was also seen that there are still ICT skills that pose a need for much attention similar to that of other equally-important training among teachers. Teachers' ability to teach students greatly depends on the amount of knowledge and skills acquired. Thus, teachers should attend workshops on creating new and modifying digital or non-digital learning resources for classroom instruction.

It was also found out that the most significant issue faced by teachers in ICT utilization was an unstable internet connection. Moreover, the teachers' ICT competence was significantly related to their attitudes toward ICT and to their ICT utilization.

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Eur. Chem. Bull. **2023**, *12(Regular Issue 1), 3806 –3809*

3809