

Information and Communications Technology Competence of Secondary School Teachers in Bataraza Districts: Basis for Teachers' Upskilling

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Abstract

Aim: This study was conducted to assess the ICT competence of public secondary high school teachers of Bataraza District I and II in terms of technological, pedagogical, and classroom integration. It determined the factors affecting ICT competence, the relationship between profiles and ICT competence, and the relationship between factors affecting ICT competence and the actual ICT competence.

Methodology: The study employed a quantitative-correlational design to investigate the demographic profile of the respondents from the different secondary schools in Bataraza, Palawan, and to assess the level of ICT competence as well as determine the factors that affect the respondents' level of competence.

Results: The study revealed that there is an existing weak negative relationship between teachers' age and ICT competence. This implies that there were young teachers who are more competent in using computer technology. There also exists a significant negligible negative correlation between educational attainment and ICT competence. The negative correlation indicates an inverse relationship which implies that teachers with minimum educational attainment tend to have higher ICT competence. However, this data can be attributed to a smaller percentage of teacher respondents who attained higher educational advancements. There is a negative negligible correlation between factors affecting ICT competence and the actual level of ICT competence of the teachers. This means that teachers who are likely to encounter personal, technological, and pedagogical limitations in ICT have lower ICT competence. Conversely, teachers who are less likely to be affected by personal, technological, and pedagogical factors tend to have higher ICT competence.

Conclusion: From the findings where the respondents got lower levels of ICT competence, it is recommended that ICT upskilling opportunities that are suitable to teachers' needs and profiles be conducted.

Keywords: ICT Competence, Bataraza District

INTRODUCTION

Teachers' competence is a big factor in the academic achievement of the students. Thus, teachers must be prepared in giving a technology-enhanced learning for the students to be equipped with necessary skills and experience that will enable them to contribute to the growing global community (UNESCO, 2018). The researcher made this study to assess secondary school teachers' level of ICT competence; to assess if there is a need of upskilling for the better integration of using technology in teaching-learning environment. This also examines the respondents' demographic profile; determine the relationship between the demographic profile and the level of ICT competence; investigate the relationship between level of ICT competence and the factors affecting their competence; and determine whether respondents have attended ICT related training or not.

In line with this, this study designed a comprehensive framework for defining and understanding the Information and Communications Technology (ICT) competence of teachers. The framework could prove to be an indispensable tool in designing measures for professional development of teachers for capacity-building in technology-pedagogy integration, development of training modules, for excellence in teachers' training in using computer technology for providing quality education.

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Objectives

This study assessed the Information and Communications Technology (ICT) competence of secondary teachers at Bataraza District I and II.

Specifically, it sought answer to the following questions:

- 1. What is the demographic profile of secondary teachers at Bataraza Districts in terms of:
 - 1.1 age;
 - 1.2 sex;
 - 1.3 highest educational attainment;
 - 1.4 position; and
 - 1.5 training attended related to Information and Communications Technology (ICT)?
- 2. What is the level of ICT competence of the teachers in terms of:
 - 2.1 Pedagogical skills;
 - 2.2 Technological skills; and
 - 2.3 Integration of pedagogical and technological skills?
- 3. What are the factors that affect the teachers' ICT competence in terms of:
 - 3.1 Personal factors;
 - 3.2 Technological factors; and
 - 3.3 Pedagogical factors?
- 4. Is there a significant relationship between teachers' demographic profile and the level of ICT competence?
- 5. Is there a significant relationship between the level of ICT competence and the factors affecting the teachers' ICT competence?
- 6. What plan will be recommended for teachers' upskilling?

Hypothesis

- Given the stated research problem, the following hypotheses were tested on 0.05 level of significance:
- 1. Hypothesis 1: There is no significant relationship between demographic profiles and the level of ICT competence of teachers.
- 2. Hypothesis 2: There is no significant relationship between Factors (Personal, Technological, and Integration) and level of ICT competence.

METHODS

Research Design

This study aimed at examining the teacher ICT competence as basis for upskilling. Thus, quantitative research using survey techniques by administrating a set of questionnaires developed for data collection. This study also utilized a descriptive-correlation research approach to describe two or more variables such as demographic profile, level of ICT competence and factors affecting ICT competence.

Population and Sampling

The respondents were all teachers from 6 Secondary Schools from Bataraza District I and 5 Secondary Schools from Bataraza District II. Purposive sampling was employed with the criteria that they work as a teacher creating an interactive and joyful teaching-learning environment.

Instrument

A researcher-made questionnaire was used to obtain the information needed for the study which was based from the questionnaire used in the study of Son, et al. (2019). Questionnaires were validated by the experts and pretested in Brooke's Point National High School, Brooke's Point, Palawan.

Data Collection

The survey results were collected, tallied, and analyzed using statistical tools following the objectives of the study; and in adherence to the proper procedures in the conduct of the study.

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Treatment of Data

Frequency count, percentage and mean were used to describe respondents' profile, ICT competence, and factors affecting ICT competence. The Spearman-rank Correlations was utilized and tested at 0.05 level of significance to describe the relationship between demographic profiles and ICT competence as well as the relationship between ICT competence and factors affecting ICT competence.

Ethical Considerations

Permission to conduct the study was secured from the Schools Division Superintendent as well as from the Public Schools District Supervisor of Bataraza District I and II. Pursuant to the Data Privacy Act of the Philippines (DPA), also known as Republic Act No. 10173, no personally identifiable information was disclosed in the study. Moreover, survey was conducted during time not included in teaching timelines of the respondents in adherence to no-disruption-of-classes policy stipulated in DepEd Order No. 9, s. 2005.

RESULTS and DISCUSSION

This chapter presents the analysis and interpretation of data. The discussions of the findings are consistent with the sequence of the problems presented in the first chapter of this study.

Demographic profile of the teacher respondents

Demographic profile shows the personal background of the respondents. Table 1 presents their demographic profile as to age, sex, highest educational attainment, position and trainings attended related to Information and Communications Technology (ICT).

Characteristics	Frequency (n=100)	Percentage
Age		
25 – 29	31	31
30 – 34	38	38
35 – 39	21	21
40 - 44	8	8
45 – 49	1	1
50 – 54	1	1
Average = 32 years old		
Sex		
Male	17	17
Female	83	83
Highest Educational At	tainment	
Bachelor's Degree	22	22
Masteral Level	68	68
Masters' Degree	10	10

Table 1.	Demographie	c Profile of th	ne Resp	ondents
		-	_	

Characteristics	Frequency (n=100)	Percentage
Position		
Teacher 1	34	34
Teacher 2	24	24
Teacher 3	35	35
Master Teacher 1	4	4
Master Teacher 2	2	2
Master Teacher 3	0	0
Head Teacher 1	1	1
Trainings Attended		
With training related to ICT	23	23
Without trainings related to ICT	77	77

Result shows that the average age of the respondents is 32 years old. Overall, the data suggest a predominantly young adult population with a slight skew towards younger ages.

In terms of gender distribution, data reveal that majority of the respondents are females (83%) and only 17 (17%) are males. This result highlights a notable gender imbalance within the respondent group.

In terms of highest educational attainment, the majority 68 (68%) have masteral degree, 22 (22%) have bachelor's degree, and 10 (10%) have master's degree. Only 22% hold a bachelor's degree as their highest educational attainment. This commitment to advanced studies highlights a dedication to professional growth within the field of education.

Table 1 also shows the position of the respondents with respect to career stages. The distribution is consistent with the April 2022 data of Department of Education Management Information System Division which indicated that about 92% of the teachers in the Philippines are Teacher I to Teacher III.

Regarding professional development, it can be gleaned from the table that 23% of the respondents have attended trainings related to Information and Communications Technology (ICT), while 77% have not received any



such training. This result suggests a potential gap in ICT skills development among a significant portion of the teaching staff. Ghavifekr and Rosdy (2015) emphasized that the new era of ICT in education should be developed rapidly to appropriate extent to matching the capability of students as well as teachers in educational experience. Hence, there is a need to provide quality and accessible ICT training for teachers. In the year 2020-2021, more than 300,000 public school teachers have undergone training on Information and Communications Technology (ICT)-based teaching, according to the Department of Education (DepEd). Currently, ICT courses are readily available for self-pace learning. The result reflecting a high percentage of teachers who haven't attended ICT training can be associated to the fact that most ICT training provider, thus, only a representative from schools attends the training. Most teachers gain their ICT training during LAC sessions where activities are short, one-off activities with no follow-through and support during implementation (USAID, 2020).

Level of ICT competence of the secondary teacher-respondents

Teachers play a vital role in delivering an interactive and enjoyable teaching-learning environment. Table 2 shows the level of ICT competence of respondents in terms of technological skills, pedagogical skills, and integration of ICT in teaching.

Table 2. Level of ICT Competence of the Teachers

Categories of Competence	Mean	Descriptive
		Rating
Technological Skills		
Using windows operating system	3.02	Competent
Adjusting windows accessibility options	2.66	Competent
Using plug-ins	2.85	Competent
Using projector	3.24	Competent
Using printer	3.54	Highly Competent
Using scanner	3.30	Competent
Using digital camera	3.04	Competent
Operating word processing program	3.16	Competent
Operating presentation program	3.05	Competent
Operating spreadsheet program	2.70	Competent
Operating database program	2.34	Less Competent
Operating graphics program	2.36	Less Competent
Operating publisher program	2.70	Competent
Installing software	2.72	Competent
Using CD-ROM's/DVD	2.82	Competent
Creating and organizing computer files and folders	3.23	Competent
Storing and transferring data using CD/USB devices	3.43	Competent
Using internet to access information sources	3.40	Competent
Using internet and social media platforms for communication	3.43	Competent
Using and updating antivirus programs	2.87	Competent
Practicing responsible use of software	2.98	Competent
Pedagogical Skills		
Selecting computer tools and pedagogy that integrate computers into the curriculum	2.97	Competent
Selecting computer tools and pedagogy appropriate to the individual student's instructional	2.92	Competent
objectives		
Selecting computer tools and pedagogy that allow teachers to manage learning	3.05	Competent
Selecting computer tools and pedagogy that allow students to manage their learning	3.02	Competent
Guiding students to use computer-based instructions to enhance quality of their creative work	2.91	Competent
Justifying the contribution of computers to raise the performance levels of students	2.87	Competent
Planning a whole learning programmed that allows a range of computer tools and pedagogy to be used.	2.82	Competent
Integration of ICT in Teaching		
Matching computer technology with curriculum	3.01	Competent
Updating knowledge and teaching skills using computers	3.08	Competent

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	Using computers to prepare instructional material	3.28	Competent
	Using computers to support content learning	3.24	Competent
	Using computers to project-based collaborative learning activities	2.87	Competent
	Assigning tasks to students that require computers	2.87	Competent
	Helping students get access to right kind of computer-based instructions	2.91	Competent
	Using computers to prepare tools and techniques for students' evaluation	3.07	Competent
	Using computers to assess students' performance	3.26	Competent
	Using computers for record-keeping activities	3.29	Competent
	Using internet to share information with professional parents or students.	3.13	Competent
	Using computers to design personalized experiences	2.88	Competent
	Evaluating the usefulness of software for lessons	2.90	Competent
	Adapting instructional software to curriculum needs	2.76	Competent
	Writing courseware for own lessons	2.85	Competent
	Adapting and adjusting ICT-based learning activities in keeping with the positive use of ICT appropriate to students' learning needs	3.02	Competent
	Displaying an exemplary practice in the positive use of ICT and consistently encourages the learners to demonstrate responsible, ethical, and appropriate use of ICT with the classroom context.	2.99	Competent
	Modeling the positive use of ICT to learners in all ICT-based learning activities	2.99	Competent
	Utilizing learning resources, including ICT which are consistently aligned with the learning goals	2.98	Competent
	Integrating extensive and multidisciplinary learning resources, including ICT, which are appropriate and aligned with the learning goals.	2.93	Competent
	Contextualizing multidisciplinary and interactive learning resources, including ICT, to deepen the learners' understanding.	2.83	Competent
	Using multidisciplinary and interactive learning resources, including ICT, and which learners assess the impact of the use of ICT and implement ways of minimizing unproductive uses of ICT.	2.85	Competent
	Interval Level of ICT Competence	· ·	

 Interval
 Level of ICT Comp.

 3.50 - 4.00
 - Highly Competent

 2.50 - 3.49
 - Competent

 1.50 - 2.49
 - Less Competent

 1.00 - 1.49
 - Not Competent

In terms of Technological Skills, study revealed that teachers were "Highly Competent" (3.54) in *using printer*. Moreover, respondents were "Competent" in majority of the skills related to Technological Skills. Additionally, teachers are "Less Competent" in skills such as *operating database program* (2.34) and *operating graphics program* (2.36). The result shows a wider spread in responses compared to overall competence, implying that some teachers may feel significantly more or less confident in their technical abilities. This variability highlights that while many teachers are comfortable with technical skills, there are those who may require additional training or support to enhance their proficiency. Similarly, Dutta and Nessa (2022) concluded that most of the teachers have basic knowledge about computer hardware, operating systems, application software, computer devices and peripherals, file management skill, storage devices, digital cameras, scanners, video conferencing, e-resources, group messaging, etc. But they are not well competent about the new technological skills like weblogs, website design, creation of digital learning materials for students.

Furthermore, teachers feel "Competent" in all skills relevant to application of ICT in pedagogy. This result indicates that while some educators feel confident in integrating ICT into their teaching methodologies, others may struggle with effectively applying these tools in an educational context. This gap highlights an area where targeted professional development could be beneficial. Thus, Larawan, et al. (2023) emphasized that high proficiency level of competence on pedagogical aspect is necessary to design and deliver ICT-enhanced instruction, engage students in meaningful learning experiences, and utilize appropriate pedagogical strategies with the support of technology.

Moreover, data also reveal that teachers were generally competent in integrating ICT in teaching. As shown, the mean scores obtained in activities relevant to ICT integration are all described as "Competent". This result implies that while many teachers are successfully using ICT tools in their classrooms, there is still potential for growth and enhancement in this area, particularly for those who may not yet fully utilize these resources. Asad et al. (2021) stated that the best educators bring different experiences and reference outlines to the classroom. Supported by the study of Bachalapur and Manjunatha (2022) which concluded that ICT facilities and its applications promote better teaching and learning environment.

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In general, the overall ICT competence mean score is 2.5 which indicates that teachers are competent in ICT. Moreover, it can be gleaned from the results that technical skills received slightly higher ratings than pedagogical skills, indicating that teachers may feel more equipped with the necessary tools than with strategies for effective integration into teaching practices. The integration scores were notably higher than those for pedagogical skills but still reflect an opportunity for improvement. With a sample size of 100 respondents, it appears that while many teachers possess a foundation level of ICT competence, targeted professional development focused on pedagogical approaches could enhance their ability to integrate technology effectively into their teaching methodologies and eventually improve student learning outcomes.

Factors that could possibly affect the teachers' ICT competence

The study also identified factors affecting teachers' ICT competence. Table 3 presents the factors that were categorized as personal, technological, and pedagogical.

Table 3. Factors affecting the teachers' ICT competence

Statement	Mean	Descriptive Rating
Technological Related Factors		
Lack of computer skills of teachers	3.29	Uncertain
Limited access to the internet	3.63	Agree
Limited knowledge of computers and peripherals	3.57	Agree
Limited knowledge of communication platforms	3.33	Uncertain
Limited knowledge of software programs	3.53	Agree
Personal Factors		
Limited time in using computer technology	3.35	Uncertain
Lack of interest of teachers in using ICT	2.95	Uncertain
I do not enjoy using computers, peripherals, mobile phone and other gadgets	2.33	Disagree
I do not enjoy using online platforms	2.20	Disagree
I do not enjoy using graphics and video editing program	2.31	Disagree
I feel uncomfortable using computers in teaching	2.10	Disagree
I feel uncomfortable using printer, projector, scanner and other kind of technology in teaching.	1.90	Disagree
I am not willing to learn more about computer and application programs.	1.67	Disagree
I think that computers are difficult to use.	2.00	Disagree
I feel threatened when others talk about computer technology.	2.00	Disagree
I feel threatened when others talk about the internet and social media platforms.	1.93	Disagree
I don't think that it is important for me to learn how to use computers.	1.82	Disagree
I do not believe that it is important for me to learn how to use computer application programs.	1.73	Disagree
I don't think that it is important for me to learn how to use online resources.	1.80	Disagree
I do not like to use computers in the classroom	1.78	Disagree
I don't think that my teaching can be improved by using computers and other technology equipment.	1.74	Disagree
I don't think that my teaching can be improved by exploring more software programs and online platforms.	1.89	Disagree
Pedagogical Factors		
Lack of school support	2.69	Uncertain
Curricular restriction	2.74	Uncertain
Limited facilities	3.64	Agree
Lack of computer skills of students	3.42	Uncertain
Lack of interest of students	3.03	Uncertain
Lack of computer-based materials	3.34	Uncertain
Inflexible teaching methods	2.90	Uncertain
Lack of ICT related training	3.56	Agree

Interval	Interpretation
4.50 – 5.00	- Strongly Agree
3.50 - 4.49	- Agree
2.50 - 3.49	- Uncertain
1.50 – 2.49	- Disagree
1.00 – 1.49	- Strongly Disagree

The table reveals a mean score of 3.51, indicating that respondents generally perceive technological aspects as significantly affecting their ICT competence. The median score of 3.68 reinforces this view, showing that over half



of the respondents rated this factor positively, leaning towards agreement. The data suggest a wider range of opinions, with some respondents feeling very strongly about the importance of technology while others are less convinced. This variability highlights that while many teachers recognize technology as a crucial element in enhancing their ICT skills, there are differing levels of confidence and experience with technology among them. The result implies that the higher technological factor related to knowledge and skills affects the ICT competence of teachers. Danner and Pessu (2013) mentioned in their study that the lack of access to computer and internet connectivity is annoying. However, computers and the internet should be provided in schools to provide access to ICT to both teachers and learners.

As to personal factors, respondents were "Uncertain" if *Limited time in using computer technology* (3.35) *and Lack of interest of teachers in using ICT* (2.95) affects their ICT competence. Moreover, they "Disagree" on some factors that might affect their ICT competence. In contrast, the table for personal factors shows a mean score of only 2.16 and a median score of 2.02, indicating that respondents generally feel that personal attributes have less influence on their ICT competence compared to technological factors. The standard deviation of 0.787 reflects a moderate spread in responses, suggesting that while some teachers may believe personal characteristics play a role in their ICT abilities, many do not see them as significant contributors. This result data points to an area where educators might benefit from recognizing how personal motivation and attitudes can impact their engagement and effectiveness with ICT. In addition, similar studies show that teacher attitudes and beliefs are crucial in influencing their acceptance of and subsequent successful integration of ICT in the teaching/learning process as cited by Liaw and Huang (2011).

Furthermore, in terms of pedagogical factors, teachers "Agree" that *Limited facilities* (3.64) and *Lack of ICT* related training (3.56) are factors affecting their ICT competence. The table for pedagogical factors shows a mean score of 3.23 and a median score of 3.34, indicating that teachers believe pedagogical strategies have a moderate influence on their ICT competence. The standard deviation of 0.801 suggests some variability in responses; while many educators agree on the importance of effective teaching methods in utilizing ICT, others may feel less strongly about this connection. The data suggest that pedagogical approaches are seen as important but perhaps not as critical as technological factors in determining overall ICT competence.

Generally, technological factors are viewed as the most influential on ICT competence among teachers, with scores significantly higher than those for personal factors and only moderately lower than pedagogical factors. The overall mean score of 2.68 indicates a general acknowledgment among respondents regarding the impact of various factors but also reflects some uncertainty or lack of strong conviction about their significance. Personal factors were rated the lowest, suggesting that teachers may not fully appreciate how their individual attributes can affect their engagement with technology in teaching contexts. These insights suggest that while there is recognition of the importance of technology and pedagogy in enhancing ICT competence, there remains an opportunity for professional development to help educators better understand and leverage personal factors to improve their teaching practices.

The relationship between teachers' demographic profile and level of ICT competence

This study also examined the relationship between teachers' demographic profile and ICT competence. Table 4 presents the significant relationship between teachers' demographic profile and ICT competence.

		Compe	tence	
Demographic Characteristics	Technological	Pedagogical	Integration	Overall
Age	-0.130	-0.110	-0.211**	-0.179*
	(0.067)	(0.132)	(0.003)	(0.011)
Sex	0.101	0.098	0.153	0.126
	(0.316)	(0.333)	(0.128)	(0.210)
Educational Attainment	-0.123	-0.169*	-0.199*	-0.164*
	(0.128)	(0.042)	(0.015)	(0.041)
Position	-0.114	-0.163*	-0.100	-0.147
	(0.143)	(0.041)	(0.201)	(0.056)
Trainings	0.006	0.0004	-0.063	-0.020

Table 4. Relationship between teachers' demographic profile and level of ICT competence

* – significant at the 5% level

** - significant at the 1% level



Results reveal that there is an existing weak negative relationship between teachers' age and ICT competence in technological, pedagogical, and integration (-0.31, -1.110, -0.211). Overall, at 0.05 level of significance, there exists a weak negative correlation between teachers' age and ICT competence. This implies an inverse relationship that can be interpreted as that younger teacher tend to have higher ICT competence. Consistently, Baytar et al. (2023) concluded that individuals in the youngest age ranges, namely 20-30, 31-40, and 41–50, feel significantly more competent than individuals in the 51–60 age range.

Data further revealed that 0.05 level of significance, there is a positive but negligible (0.126) and not significant (0.210) relationship between sex and ICT. In terms of sex as determining factor for ICT competence, there is not enough information to establish that ICT competence of male and female teachers is significantly different.

Table 4 also shows the relation between the educational attainment of the teachers and the ICT competence. Data show a negative weak correlation in technological (r=-0.123), pedagogical (-0.169), and integration (-0.199). Generally, at 0.05 level of significance, there exists a significant (p=0.041) negligible negative (-0.164) correlation between educational attainment and ICT competence. The negative correlation indicates an inverse relationship which implies that teachers with minimum educational attainment tend to have higher ICT competence. However, this data can be attributed to a smaller percentage of teacher respondents who attained higher educational advancements.

In terms of relationship between position and ICT competence, it can be gleaned from the values that an inverse relationship exists along technological competence (r=-0.114), pedagogical competence (-0.163), and integration competence (-0.100). Moreover, the negative correlation between position and pedagogical competence is significant at 0.05 level of significance. Overall, there is a negatively negligible (-0.147) correlation between position and ICT competence, however, at 0.05 level of significance, this is not significant (p=0.056). This means that there is not enough evidence to establish the relationship of ICT competence and academic rank or position.

It can also be gleaned from the table that there is a negligible correlation between training and ICT technological (r=0.006), integration (r=0.0004), and integration skills (-0.063) which also reflects that generally there is no significant relationship between training and ICT competence. This result suggests that attending training does not affect the ICT competence. This can be attributed to the availability of material and sources that are readily available to improve ICT competence even without attending formal training. However, the result of the study of Ghavifekr and Rosdy (2015) emphasized that professional development training programs for teachers also played a key role in enhancing students' quality learning.

The relationship between the level of ICT competence and the factors affecting the teachers' ICT competence

This study also examined the relationship between the level of ICT competence and the factors affecting the teachers' ICT competence. Table 5 shows the relationship between ICT competence and the factors affecting the teacher' ICT competence as to personal, technological, and pedagogical.

	Competence					
Factors	Technological Pedagog		Integration	Overall		
	-0.061	-0.182	-0.199*	-0.176		
Personal Factor	(0.543)	(0.070)	(0.047)	(0.080)		
	-0.270**	-0.215*	-0.319**	-0.312**		
Technological Factor	(0.007)	(0.032) (0.001) (0.002)				
	0.052	-0.094	-0.065	-0.052		
Pedagogical Factor	(0.609)	(0.352)	(0.523)	(0.609)		
- "	-0.078	-0.175	-0.230*	-0.189		
Overall	(0.439)	(0.082)	(0.021)	(0.059)		

Table 5. Significant relationship between the level of ICT competence and the factors affecting the teachers' ICT Comnetence

* – significant at the 5% level

** - significant at the 1% level



Data reveal a negative negligible correlation between ICT competence in technological (-0.061), pedagogical (-0.182), and integration in classroom (-0.199) and personal factors. Overall, there is a negatively negligible (-0.176) correlation between personal factors and ICT competence, however, this is not statistically significant at $\alpha = 0.05$. This implies that the information at hand is not enough to establish that personal-related factors of a teacher affect their ICT competence. Moreover, in terms of technological factors affecting ICT competence, data show a negative weak correlation between technological factors and ICT competence in terms of technological (-0.270), pedagogical (-0.215), and integration in classroom (-0.319). Generally, at $\alpha = 0.01$ (p = 0.002), there is a significantly weak negative (-0.312) correlation between ICT competence and technological factors. This further implies that teachers who experience technological limitations such as limited knowledge, access, and skills regarding the use of ICT tend to have lower ICT competence. Hence, a positive view of ICT in teaching in personal level is a strong foundation that might motivate teachers to acquire relevant skills and utilize ICT in teaching.

In terms of pedagogical factors affecting ICT competence, table 5 shows a positive negligible relationship between pedagogical factors and technological skills (0.052), negative negligible correlation between pedagogical factors and ICT integration in classroom skills (-0.065). Overall, there is no significant relation between pedagogical factor and ICT competence. Moreover, Ghavifekr et al. (2016) identified issues and challenges from teachers' perceptions and noted that limited accessibility and network connection and limited school support are among the identified issues affecting ICT utilization among teachers. This highlights the important role of strong pedagogical support given to teachers to increase ICT competence.

It can also be concluded from the result that at 0.05 level of significance, there is a negative negligible (r=-0.078; p-value=0.439) correlation between factors affecting ICT competence and technological skills as well as between factors affecting ICT competence and pedagogical skills (r=-0.175; p-value=0.085) which are not significant. Notably, as shown, there is significantly weak negative correlation (r=-0.189; p-value=0.02) between factors affecting ICT competence and integration skills. The inverse relationship suggests that as teachers experience several factors that affect their competence in ICT, their competence in integrating ICT in classroom instruction is also negatively affected.

To conclude, there is a negative negligible correlation between factors affecting ICT competence and the actual level of ICT competence of the teachers. This means that teachers who are likely to encounter personal, technological, and pedagogical limitations in ICT have lower ICT competence. Conversely, teachers who are less likely to be affected by personal, technological, and pedagogical factors tend to have higher ICT competence. The finding is supported by the study of Vitanova et al. (2015), who concluded that the increase in professional use of ICT will positively affect the increase of ICT competence of teachers. Training teachers with regards to spreadsheets, multimedia presentations, blogs and databases will have a positive impact on ICT knowledge and skills of teachers in the corresponding areas.

The upskilling plan for teachers

This study recommended a school-initiated techy skills short-courses program (an upskilling plan) for the teachers to enhance current skills and abilities in using and integrating ICT in teaching learning process. Table 6 presents the upskilling plan which was based on the results where the teachers had low level of ICT competence.

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IMPROVEM ENT AREAS (PIAs)	CONTENT	OBJECTIVES	ACTIVITIES	FRAME	INVOLVE D	OUTPUT
Technological	Module 1.	To provide knowledge and skills advancement in	Conduct	Every	School	Teachers
Skills	Microsoft	using MS Word and Publisher.	hands-on	Quarter	Head	were able to
			training on the		School	create, eait,
Pedagogical	Publisher	To enhance teachers' abilities in creating	effective use of	(1/2-day	Teachers	and format
Skills	for	personalized learning plans, programs, invitations	MS Word for	training)	Facilitator	documents;
	Document	and brochures using MS Word and Publisher.	document			as well as
Skills in the	Planning		planning; and			design and
Integration of	(Hands-on)	To provide skills enhancement for teachers in	MS Publisher			create
ICT in	. ,	crafting and designing lesson plans and programs	for creating			brochures or
Teachina		teaching-learning as well as layout brochures or	invitations and			invitations.
		invitation for a particular program such as assembly	brochures			
		meeting or any other program that needs the	2.22.14.00			ł
		meeting of any other program that needs the			1	1

Table 6. Action Plan for Teachers' Upskilling in ICT

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	ERNATIONAL TIDISCIPLINARY RCH CONFEREN	CE Sta. Ana, Pampanga, Philippines GC	etcor.org	REBER		The Exi P - ISSN E - ISSN
		intervention of teachers and stakeholders.				
Technological Skills Pedagogical Skills Skills in the Integration of ICT in Teaching	Module 2. Microsoft Excel for Database Managemen t (Hands- on)	To enhance knowledge and skills advancement in using MS Excel. To enhance teachers' skills in keeping and organizing learner's records through the use of MS Excel. To enhance teachers' skills in effective utilization of MS Excel in automated tracking, monitoring and assessment of learners' progress and development.	Conduct hands-on training on the efficient use of MS Excel for easier record keeping, tracking and monitoring of learners' progress as well as other application software (such as EvalBee for automated checking of test papers).	Every Quarter (1/2-day training)	School Head School Teachers Facilitator	Teachers were able to track records, monitor and assess learners' progress through MS Excel in an esaier and efficient manner.
Technological Skills Pedagogical Skills Skills in the Integration of ICT in Teaching	Module 3. Microsoft Powerpoint for Interactive and Effective Presentation S	To upgrade knowledge and skills advancement in using MS Powerpoint. To enhance teachers' skills in creating interactive and gamified learning resources through MS Powerpoint. To provide skills enhancement for teachers in effective utilization of MS Powerpoint in creating an interactive teaching-learning enviroment.	Conduct hands-on training on the efficient use of MS Powerpoint for an active enjoyable gamified learning resource.	Every Quarter (1/2-day training)	School Head School Teachers Facilitator	Teachers were able to create an interactive powerpoint presentation and gamified learning resources.
Technological Skills Pedagogical Skills Skills in the Integration of ICT in Teaching	Module 4. Microsoft Teams for Virtual Collaboratio ns	To enhance knowledge and skills advancement in using Microsoft Teams. To enhance teachers' skills in using Microsoft Teams for online classes, virtual meetings and online assessments. To enhance teacher's skills for effective utilization of MS Teams for a digitalized form of collaboration, assessment and online monitoring of learners' progress.	Conduct hands-on training on the efficient use of Microsoft Teams for virtual meetings, online assessment, and online monitoring of learners' progress.	Every Quarter (1/2-day training)	School Head School Teachers Facilitator	Teachers were able to explore and utilize Microsoft Teams.
Technological Skills Pedagogical Skills Skills in the Integration of ICT in Teaching	Module 5. Graphics Designing	To enhance knowledge and skills advancement in using Adobe Photoshop and Canva. To enhance teachers' skills in the utilization of Adobe Photoshop and Canva. To upgrade skills enhancement for teachers in effective utilization of Adobe Photoshop and Canva in creating design for a particular purpose.	Conduct hands-on training on the efficient use of Adobe Photoshop and Canva for creating design for a particular purpose such as design for visual aids, invitation and many more.	Every Quarter (1/2-day training)	School Head School Teachers Facilitator	Teachers were able to create a design using Adobe Photoshop and Canva.
Technological Skills Pedagogical Skills Skills in the Integration of ICT in Teaching	Module 6. Digital Literacy	To boost knowledge and information on digital citizenship including online etiquette, copyright laws, and cyberbullying preventions. To enhance teachers' skills on using social media, netiquette, digital safety and security. To upgrade skills enhancement for teachers in effective utilization of digital literacy integrating in their teaching.	Conduct training for teachers on Digital literacy by inviting a credible ICT related personnel member such as Cyber Security	Every Quarter (1/2-day training)	School Head School Teachers Facilitator	Teachers were able to integrate digital literacy in the teaching- learning process.

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Conclusions and Recommendations

Majority of the teacher respondents are females; aged 30-34 years; earned their masteral units, with Teacher I, II, & III positions; and have not attended ICT trainings. They were "Competent" along technological skills, pedagogical skills, and integration of ICT in teaching. Furthermore, respondents were "Highly Competent" in using printer while they were "Less Competent" in operating database program and operating graphics program.

Moreover, respondents agreed that technological-related factors affect their ICT competence; they agreed that some of the personal-related factors affect their ICT competence; they agreed that limited facilities and lack of ICT related training are pedagogical-related factors affecting their ICT competence; they were uncertain if lack of school support, curricular restriction, lack of computer skills of students, lack of interest of students, lack of computer-based materials, and inflexible teaching methods are factors that affect their ICT competence.

A weak negative correlation between teachers' age and ICT competence existed, thus, younger teachers tend to have higher ICT competence. There's also no significant relationship between sex and ICT competence; hence, there's a significantly negative correlation between educational attainment and ICT competence, that implies teachers with minimum education attainment tend to have higher ICT competence.

There's a significantly weak negative correlation between factors affecting ICT competence and integration skills which implies that if teachers experience several factors that affect their competence in ICT, their competence in integrating ICT in classroom instruction is negatively affected; Meanwhile, there's a negative negligible correlation between personal, pedagogical, and technological factors experienced by teachers and the actual level of ICT competence of the teachers; this means that teachers who are likely to encounter personal, technological, and pedagogical limitations in ICT have lower ICT competence. Conversely, teachers who are less likely to be affected by personal, technological, and pedagogical factors tend to have higher ICT competence.

After an in-depth analysis on the findings of this study, the following were the recommendations produced: schools should provide quality and consistent targeted professional development short courses training with ICT topics that are focused on pedagogical aspects, technological aspect, personal aspect, as well as in integration of ICT in the classroom; teachers' profiles should be considered in designing and conducting ICT capability training; well-equipped and adequate facilities should be provided to improve ICT competence and utilization among teachers; similar studies should be conducted to gain a deeper understanding of the factors influencing teachers' ICT competence and their perspectives on using technology in the classroom; explore the role of other factors, such as school leadership, institutional support, and professional learning communities, in promoting teachers' ICT competence; monitor the impact of upskilling interventions on teachers' ICT competence and their classroom practice at least every quarter.

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