

# Information and Communication Technology Competence of Baby Boomer Teachers and Their Pedagogical Performance

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**Abstract**— *This study determined the relationship between the Information and Communication Technology (ICT) competencies and the pedagogical performance of baby boomer teachers from Ocampo District. It employed a mixed- concurrent parallel method. In gathering the data, the researcher – used the National ICT Competency Standards for Teachers as a framework to measure the ICT competency level of the baby boomer teachers and the Curriculum Based- Performance Appraisal System Tool to assess their pedagogical performance. Descriptive statistics, framework analysis and Spearman Rank Correlation were used to treat the data gathered. Results showed that the Baby Boomer Teachers have basic ICT Competency Level while their pedagogical performance were assessed to be within Highly Proficient level. The ICT competency of the baby boomer teachers were proven to have significant relationship on their pedagogical performance. Several factors were also identified to have affected the ICT competency level of the baby boomer teachers which include: negative attitude towards ICT, academic background, and lack of institutional support. A propose training workshop was also crafted by the researcher to aid in the developmental needs of the baby boomer teachers particularly in improving their ICT competency.*

**Keywords:** ICT, Teachers, Pedagogy, Baby boomer.

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## I. BACKGROUND

Information and Communication Technology has proven its worth in almost all areas of the human life. Break throughs and innovations in every sciences has become a constant news from every corner of the world. The development brought by the introduction of ICT to businesses, media, medicine, government, and education has reach a milestone incomparable to the most recent past.

In education, benefits of incorporating ICT in the teaching and learning processes has bear positive result to the performance and achievements of both the learners and the teachers. The variety of uses and functions of ICT devices has provided teachers with numerous interactive and interesting teaching ideas and methods. Other related tasks were also made easier with the aid of ICT (Lawrence & Tar, 2018). On the other hand, computer-based education was found to be successful in stimulating the learners' interest and increased their participation during class instructions (Lin et al., 2017). ICT has also been a reliable medium of instruction in the implementation of distant learning during the pandemic.

During the peak of the pandemic, the Department of Education (DepEd) has been obliged to cease face-to-face lessons throughout Luzon, and has adopted the Basic Education Learning Continuity Plan (BE-LCP) for the school year 2020-2021. BE-LCP underlines that all students can benefit from blended distant learning modalities until the Department of Health (DOH), the Inter-Agency Task Force for the Management of Infectious Disease (IATF), or the

President lifts or relaxes any limitation on face-to-face learning in schools/CLCs (DEpEd Order No.12, s2020). This has prompt educational institutions to depend on the benefits of ICT to ensure that their learners' instructional needs are delivered despite the restriction caused by the pandemic.

Far from the usual learners-to-teacher-interaction during class discussion, the teaching and learning process during pandemic has compelled teachers to delve into a more technical task such as printing of learning materials, preparation of lesson presentations to be distributed in soft copies or streamed online. There is also the need for teachers to attend webinars and capacity building programs using different online platforms to acquire CPD Units as a part of the the mandate of the Continuing Professional Development (CPD) Act of 2016. However with the existing restrictions for the conduct of the usual face to face seminars and workshops for teachers, any form of professional development will be done mostly online through synchronous or asynchronous sessions.

Other related task such as submitting school related paper works using e-mail or other file sharing application were also implemented as a part of limiting the possibilities of contracting the virus. All of this was done in the convenience of their home or independently at school while following the Alternative Working Arrangement as stipulated in the Deped Order No. 11, s.2020. While this course of action proves to be effective in safeguarding the teachers and the learners against the dangers of the Covid 19 virus, this also has exposed the need for the educational sector to upgrade its ICT capabilities.

Even before the Covid 19 pandemic, some teachers are already having a hard time utilizing Information and Communication Technology (ICT) tool while doing school related works and even in teaching. This is particularly hard for the oldest working generation of today known as the “Baby Boomer Generation”. Baby Boomer teachers are those who are in their late-career and whose age ranges from fifty-seven and above. They were those individuals who were born between 1945 and 1964, or from the time immediately after the end of World War II. In the field of education, individuals of this generation are the more experienced instructors of today (Polat et al., 2019).

At present, only few teachers from their generation remained, most of them have retired from the service and are enjoying their private life. Those who have remained were observed to struggle the rapid shift in education towards the use and integration of ICT in the different aspect of their profession. Some of them were having problems using computer for encoding documents, making slide presentation to be use for lesson or for presenting a topic for seminars, using spreadsheet which could be use for making grades or tabulating data, or even attending webinars and accomplishing post webinar assessment or evaluation online. This generation of teachers believes that ICT could expedite their work however without mastering the basic skill sets and competencies, using ICT is an additional burden that should not be experienced by any individual nearing their retirement. However, their teaching practices and strategies, though considered traditional, were still acknowledge for their effectivity in improving learners’ academic performance. Drawn to classroom-based instruction, baby boomer teachers were known to employ lecture techniques supplemented by practical exercises like hands on activities and explicit method of instructions which have proven effective in learners’ academic development (Yaakob et al., 2020). Thus, their inputs in improving the literacy and numeracy levels were highly solicited in designing intervention programs.

Despite their known resistance to change (Polat et. Al.,2019) and their indifference towards technology (Venter, 2017), it is still a must that this generation of teachers to be capacitated with ICT competencies and skills. Consequently, this will unlock more possibilities and options in delivering instructions to the learners as well as in assuming roles and responsibilities related to their professions. Their experiences and wisdom are also considered as a valuable asset which must be imparted to the younger generation of teachers. Their best practices and legacy should be perpetuated which could be done with the help of ICT. The modern technology has provided digital venues and media so that this knowledge and expertise be shared online to vast audience. Additionally, the same technology has been a continual source of educational references used for growing and increasing professional growth and development. ICT would allow this generation of teachers to connect with like-minded peers, or colleagues who have comparable interests, and educational philosophy

(Prestridge, 2019). In general, this study would give light on the ICT competencies of baby boomers and its relationship to their pedagogical performance. Hopefully, the result of this study would be considered in crafting new programs or in the amendments on the existing policies of the educational institutions to better help their stakeholders.

## II. METHODS

A mixed method- concurrent parallel design was used to determine the ICT competency of Baby boomer teachers and its relationship to their pedagogical performance. The researcher used the National ICT Competency Standards for Teacher (NICS-T) This was developed by the Commission of Information and Communication Technology with the collaboration of Department of Education. This framework aims to provide teachers with set of standards to better improve their ICT Competency. The result gather for this part of the research were analyze using descriptive research design.

Descriptive research design was also used to assess the level of pedagogical performance of the baby boomer teachers which was evaluated using the framework of Curriculum Based Performance Appraisal System for Teacher (CB-PAST). Spearman Rank Correlation design was the used to determine if there exists relationship between the level of ICT competencies of teachers and their level of pedagogical performance.

Qualitative data was drawn using a one-on-one interview method using a semi structured interview form. The gathered data was then analyze using framework analysis to synthesize the factors which have affected the ICT competency level of the baby boomer teachers.

## III. RESULT AND DISCUSSION

The result on the ICT Competency level of the baby boomer teachers are presented in Table 1.

**Table 1. ICT COMPETENCY OF BABY BOOMER TEACHERS**

DOMAINS	Mean	VI
PROFESSIONAL	2.24	Basic
PEDAGOGICAL	2.48	Basic
TECHNOLOGICAL OPERATIONS AND CONCEPTS	2.54	Basic
SOCIAL AND ETHICAL	2.86	Intermediate
Overall Mean	2.53	Basic

Legend: 1.00-1.80 fundamental, 1.81-2.60 basic, 2.61-3.40 intermediate, 3.41-4.20 advance, 4.21-5.00 proficient

As shown in Table 1, baby boomer teachers were found to have basic level of competency in most of the ICT competency domain. Professional domain having the lowest

mean of 2.24, followed by Pedagogical domain with 2.48 and Technological operation and concepts with 2.54. Only under the Social and Ethical domain, that the baby boomer teachers were revealed to have intermediate level of competence. This result highlights the need for the baby boomer teachers to be capacitated with ICT trainings. Improving their ICT

competence may help them in accomplishing administrative work, but most importantly their teaching practices. Incorporating technology into educations does not only promises great advantages to the student learning performance and achievement, it also acquaints theme with relevant skills that a 21<sup>st</sup> century learner must possess.

**Table 2.** Pedagogical Performance of Baby Boomer Teachers of Ocampo District

DOMAINS	Mean	VI
Planning, Assessing and Reporting	3.24	Proficient
Curriculum Content and Pedagogy	3.25	Proficient
Learning Environment	3.25	Proficient
Diversity of learners	3.31	Highly Proficient
Personal, Social growth and Professional Development	3.31	Highly Proficient
Community Linkages	3.38	Highly Proficient
Social Regard for Learning	3.44	Highly Proficient
<b>Total</b>	<b>3.31</b>	<b>Highly proficient</b>

Legend: 1.00-1.75 below basic, 1.76-2.50 basic, 2.11-3.25 proficient, 3.26-4.00 highly proficient

Shown in table 2 is the result on the assessment of the baby boomer teachers' pedagogical performance. Result shows that the baby boomer teacher has the lowest mean on Planning, Assessing and Reporting with 3.24 mean. It could be inferred from this result that although this domain got the lowest mean among the other pedagogical performance domain, the verbal interpretation of Proficient still proves that baby boomer teachers can work independently in activities related to this domain such as crafting of

assessment materials and tools as well as in providing feedbacks to the learners as well as to their parents.

With 3.44 mean, Social Regards for Learning were found to be the specialty of the baby boomer teachers. This could mean that baby boomer teachers see themselves as a strong and positive role model of the values which are exemplified by their actions, remarks, and various forms of social interactions with students.

**Table 3.** Relationship between Level of ICT Competencies and the Level of Pedagogical Performance of Baby Boomer Teachers

Variable	Spearman Correlation	p-value	Interpretation
Curriculum Content and Pedagogy	.714	.000	Highly Significant
Personal, Social Growth and Professional Development	.525	.017	Significant
Learning Environment	.513	.021	Significant
Diversity of Learners	.437	.054	Not Significant
Community Linkages	.431	.058	Not Significant
Planning, Assessing and Reporting	.412	.071	Not Significant
Social Regard for Learning	.359	.120	Not Significant
<b>Pedagogical Performance</b>	<b>.536</b>	<b>.015</b>	<b>Significant</b>

Legend:  $p \leq 0.001$  very highly significant,  $p \leq 0.01$  highly significant,  $p \leq 0.05$  significant,  $p > 0.05$  not significant

Table 3 illustrates the relationship between the level ICT competency to each domain of the pedagogical performance of baby boomer teacher. With .000 p value, Curriculum Content and Pedagogy was revealed to have Highly Significant relationship towards the level of ICT competency of baby boomer teachers. It could be gleaned from this data

that baby boomer teachers could greatly improve the teaching and learning processes if they focused on developing their ICT competence. Overall, with .015 p value, Pedagogical Performance were found out to have significant relationship to the ICT competence of Baby Boomer Teachers.

**Factors Affecting the ICT Competency of Baby Boomers Teachers**

Baby boomers have identified several factors to have affected their ICT competence. Some of the common themes which was identified during the face-to-face interview was negative attitude towards ICT, academic background, and the lack of institutional support.

**IV. CONCLUSION**

The analysis of the study data employed a framework analysis approach, yielding several noteworthy conclusions. Firstly, it was found that baby boomer teachers possess a "basic" level of ICT competence, as assessed against the NCIS-Teachers standards. Secondly, these educators demonstrated a high level of proficiency in their pedagogical performance, aligning with the norms outlined in the CB-PAST Framework. Thirdly, a significant relationship was observed between the ICT competence of baby boomer teachers and their pedagogical performance. Lastly, the study revealed that negative attitudes toward ICT, educational backgrounds, and the absence of institutional support were commonly cited as factors associated with the ICT competency level and pedagogical performance of baby boomer teachers.

Based on these research findings, a series of training workshops has been proposed to enhance the ICT competency of teachers. These workshops will focus on developing the four domains specified in the NICS-Teacher framework, aiming to bridge the identified gaps and improve the overall effectiveness of baby boomer teachers in utilizing ICT for teaching.

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