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Teachers' Digital Competences and Contextual Knowledge in Classroom Engagement and Instructional Effectiveness

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ABSTRACT:

The study aimed to determine the relationship between teachers' digital competences and contextual knowledge in classroom engagement and instructional effectiveness. Using the descriptive-correlation research approach to conduct a thorough analysis of the study, the researcher used a survey questionnaire. The teacher-respondents perceived themselves as digitally competent as to digital resources, teaching and learning, assessment, empowering learners and facilitating learners' digital competence except professional which is highly competent. The teacher described themselves as highly practicing behavioral beliefs, practicing normative beliefs and control beliefs as to their contextual knowledge. The classroom engagement is highly observed in terms of cognitive, emotional and social engagement. The instructional effectiveness is highly practiced as to instructional planning skills, instructional skills, knowledge of the subject area, rapport with the students and classroom management skills. There is significant relationship between digital competences of teachers and their perception in classroom engagement and instructional effectiveness except for digital competence as to professional. The perceived contextual knowledge is significantly related to classroom engagement and instructional effectiveness.

Keywords: *Classroom Engagement, Contextual Knowledge, Digital Competences, Instructional Effectiveness*

Introduction:

In today's world, technology brings many changes and transformation in every part of the society especially in terms of education. Technology becomes a big part in the education. It can affect every day's life of our fast-changing environment. Teachers need the right digital competency to achieve the goals in their performance in terms of teaching and learning. In which the technology plays an important part of the learning to make the transfer of knowledge more consistent and reliable. Considering the rapid growth of technology and the expanding nature of the workplace in the twenty-first century, education and learning have been especially influential in changing the public's views. Professionals with the necessary technical skills required by the use of various technologies in the workplace, in addition to the competencies from textbooks and acquired communication, critical, and analytical thinking skills, are employed by industries and workplaces as engineers, accountants, teachers, office staff, and laborers.

The Department of Education MATATAG Agenda seeks to resolve the challenges in basic education. MATATAG agenda of the DepEd provide an innovative approach to addressing the nation's problems with basic education. Vice President and Education Secretary Sarah Duterte's Basic Education Report (BER) 2023 highlighted the prior to revealing the new basic education agenda, the Department presented its challenges and accomplishments. Duterte emphasized that they will mobilize in support of the nation's enhanced educational system. They shall unite in support of every Filipino child. For the sake MATATAG na bayan, for the sake of our country, the Philippines. MATATAG has four critical components. This study focusses on the fourth agenda which is **G**ive support to teachers to teach better. This is in terms of innovative, responsive, and inclusive teaching approaches following the Philippine Professional Standards for Teachers (PPST). She added also, "We will capacitate our teachers and learners in utilizing technology in remote learning to maximize the benefits of digital learning. [5]

Aside from this, education in our country committed to addressing the challenges in digital learning and education technology, reported the Digital Rise Program's milestones through the Information and Communications Technology Service (ICTS) at the 2022 World Book and Copyright Day Celebration. In time Education of Secretary Leonor Magtolis Briones shared that the most important lesson from the past year is that, although Philippines have learned a lot from the pandemic and have gone a long way, we still need to be open to new ideas and embrace technology. Under Secretary Briones' direction, Undersecretary for Administration Alain Del Pascua is leading the Digital Rise Program, an instructional framework that is anchored in the hardware, software, and capacity building of educators and students in the use of technology. Abram Y.C Abanil, Director of ICT's reported that DRP has three major components, first is the digital literacy of the K-12 Learners includes the productivity tools for Grade 4-6. The second component is the goal of DepEd's ICT Assisted Teaching program is to provide educators with tools, resources, and expertise to support their everyday classroom instruction.

Additionally, each teacher and classroom will receive laptops, smart TVs, and lapel speakers as part of the program. Last but not least, the program's ICT Assisted Learning for Learners component seeks to provide access and flexibility via synchronous blended learning and the DepEd Learning Management System (DLMS).

Additionally, the Department continued the Public Education Network through the DepEd Computerization Program and gave teachers and students laptops and tablets. The Department collaborated with Google and Microsoft to consistently deliver software to its constituents. Some of the platforms where students and educators can access DepEd materials, such as self-learning modules, DepEd TV, and DepEd Radio episodes, are the DepEd Commons, Learning Resources Portal, and the DLMS. Undersecretary for Curriculum and Instruction Diosdado San Antonio hoping that with this kind of virtual discussion helps our fellow educators and leaders in education leadership and teaching to better understand how the department can offer the young people in the Philippines in the education they need to become capable citizens of the twenty-first century [18].

In line with this, education has been significantly impacted by the digital revolution. The way that technology has been used in education has evolved over time and differently, mostly based on the abilities and traits of educators. Ourselves are in the Fourth Industrial Revolution and is characterized by complicated globalization, the merging of technologies, digitization, technology, and a great deal of uncertainty [47]. In this situation, educators must have digital competence to provide teaching effectiveness to the students.

As mentioned above, teachers must have digital competence for everyday use to be efficient and effective in teaching. Also, technology-based teaching and learning nowadays are beneficial to the learners because learners today are exposed on different technologies. Many studies proved that technology can really help the learners in their studies by integrating the technology in their everyday lessons. In this case, the teacher needs to have digital competences, for them to perform well at their work and should be able to work, understand and utilizing a variety of digital tools which they can use in preparing lessons and in teaching. The teacher needs to have a different resource that may help into his or her lessons every day. Teachers are expected to have a broader knowledge and abilities because we are in the advanced world that are using digital and technology.

With this case of difficulties, at the end of this study, the researcher also needs to acquire digital competences themselves to make the right choice of digital technology and to facilitate learning in a technologically advanced society.

Tiaong 1 District composed of twenty-eight (28) elementary schools and have a two hundred thirty-two (232) teachers. Based on the recent Individual Performance Commitment and Review Form (IPCRF) tools for teachers last June-July 2023, it appears that 192 teachers were rated as Very Satisfactory (VS) and 40 teachers rated as Outstanding (O). However, this rating will be measure in this study to evaluate their performances result. With that, having these information and facts, the teachers in this district performed well in their teaching. They are definitely a good example to the learners in providing education and mold them into a good person of the community. The Class Observation Tool has 7 indicators and one of them is Selected, developed, organized and used appropriate teaching and learning resources, including ICT, to address learning goals. According to the summary result of IPCRF in District I in Tiaong, it seems that even though teachers got Very Satisfactory and others are Outstanding on their rating, there is a gap in integrating the technology in their instruction and classroom. There is a lacked of digital competences and technology integration in the instruction of the teachers. This is usually at the comments of the school heads of each school.

Regardless of the good performance of the teachers, some are struggling on how to use the technology on their works and teaching. The Department of Education (DepEd) also considers the variation on the student understanding and learning and the teacher factors in delivering lesson. In the education setting here in the Philippines, teachers play a big part in improving the quality of the teaching and learning process as well as the performance of the teacher. This is the reason why educators have become more innovative and creative in delivering their lessons and in doing their work effectively and efficiently. A growing number of educators are now revealing themselves in the technology that can support and help their performances. However, the teacher enhances their effectiveness considering that there's a need to engage their digital competence towards their work.

Methodology:

The purpose of this chapter is to provide a description of the research methodology that was utilized in this study. A description of the research design including the setting, theoretical basis, data collection procedures, and data analysis strategies are presented. The researcher used a descriptive-correlational design. Descriptive design was used to describe and interpret the data in the questionnaire, which is one of the primary sources of information intended to provide data concerning with teachers' profile, perception level in terms of digital competences, contextual knowledge, classroom engagement and instructional effectiveness. Correlational method on the other hand, was utilized to determine if there is an existing relationship between teachers' digital competences in classroom engagement and instructional effectiveness, contextual knowledge in classroom engagement and instructional effectiveness.

This study used quantitative approach in the research. The quantitative data analysis is the procedure for gathering and examining numerical information. Finding trends and averages, generating hypotheses, examining causality, and extrapolating findings to larger populations are all possible with it. [8]

The study included one hundred fifty (150) teachers in Tiaong I District. The schools were selected from Tiaong I District, Division of Quezon as the locale of the study.

This study made use of the survey questionnaire, as its main tool for gathering data. It consisted of 5 parts. Part I. Profile of the Respondents. Part II. Digital Competences. Part III. Contextual Knowledge. Part IV. Classroom Engagement. Part V. Instructional Effectiveness.

The researcher sought to find relationship between teachers' competences and contextual knowledge in classroom engagement and instructional effectiveness. The instrument is validated by seven experts which are teachers that is major in English, an ICT Coordinator of the district, an adviser of publications in elementary and high school, a master teacher, a school head and a teacher which is graduated as masters in English. After their language and content validation, their comments, suggestions and recommendation are utilized with the final refinement of the instruments.

Upon designing instruments, it is validated by the experts for further test of reliability upon which recommendations and suggestions used for the final draft of the instrument. The researcher prepared a letter asking permission from the District Supervisor to allow the conduct of the study among selected elementary teachers of Tiaong I District. The researcher sought approval from the Principals of the selected public elementary schools in Tiaong I District to allow her in conducting the study and distributing sets of questionnaires to the target respondents. Upon the approval, the researcher started with the distribution of the questionnaires on the schedule date through google form. The researcher conducted the distribution and the retrieval of the questionnaires by herself. Then, after a month of completion, the researcher was sought the help of the statistician regarding the analysis and interpretation of the results. After conducting of this research, the researcher determines the relationship of Digital Competences, Contextual Knowledge on Classroom Engagement and Instructional Effectiveness.

Several statistical tools were used to analyze and interpret the data that were gathered in the study. The weighted mean on the different variables were tallied, and tabulated. Simple descriptive statistics like frequency distribution, percent count, standard deviation, and mean were utilized to describe the perception of the respondents on the variables of the study. To determine the relationship of phases of digital competences in classroom engagement and instructional effectiveness, contextual knowledge in classroom engagement and instructional effectiveness- Pearson Product - Moment Correlation Coefficient were utilized.

Objective:

1. To know the digital competence of the teachers.
2. To know how the teacher contextual knowledge be described.
3. To know what extent is classroom engagement observed.
4. To know what extent is instructional effectiveness practiced.
5. To know if there is significant relationship between the teachers' digital competences and their classroom engagement and instructional effectiveness?
6. To know that does the perceived contextual knowledge significantly related to classroom engagement and instructional effectiveness?

Results

Table 1. Digital Competence of the Teachers as to Professional

Indicators	Mean	SD	VI
1. utilize digital technologies to make additional learning resources and information available to learners (and parents).	3.68	0.48	**HC**
2. use digital technologies to communicate with colleagues in the same organization and beyond.	3.47	0.5	**C**
3. contribute to collaboratively developing and improving organizational communication strategies with content to the organization's website or virtual learning environment.	3.51	0.5	**HC**
4. apply digital technologies to collaborate with other educators, to share and exchange knowledge, resources and experiences with colleagues and peers on a dedicated project or task as a source for one's own professional development.	3.45	0.54	**C**
5. employ the insight and resources, generated in the collaborative networks I belong to, to get feedback on and improve my competences, and to expand my repertoire of digital practices.	3.47	0.51	**C**
6. manipulate digital technologies to collaboratively develop educational resources and professional collaborative networks to explore and reflect on new pedagogic practices and methods.	3.55	0.51	**HC**
7. improve and enhance my digital skills, competence, pedagogical competence through experimentation and pear learning.	3.41	0.52	**C**
8. benchmark best practices to improve my own digital pedagogies and extensive digital competences.	3.43	0.54	**C**
9. experiment with and reflect on new pedagogical approaches, enabled by digital technologies.	3.43	0.55	**C**

10. participate in online training opportunities and contribute to improving them and guiding others in making appropriate choices by providing feedback	4.00	0.00	**HC**
Over-all	**3.54**	**0.52**	**HC**

Legend: *3.50–4.00- Highly Competent (HC), 2.50–3.49- Competent (C), 1.50-2.49- Moderately Competent (RC), 1.00–1.49- Not Competent at all (NC)*

Table 1 presents the mean scores and standard deviations for teachers' digital competence across a range of professional indicators. Teacher exhibit a notably high level of digital competence across many professional variables. The data revealed that they are "Highly competent" (M=3.54, SD=0.52) in utilizing digital technologies. Based on the data, this means that the respondents of the selected public elementary school in Tiaong I District demonstrate outstanding expertise in utilizing digital technology for many professional goals, such as creating instructional resources through Learning Resources Management and Development System "LRMDS" which design to support increase distribution and access to learning, teaching and professional development at the Region, use different kinds of software, facilitating effective communication with their fellow co teachers through online like the virtual learning environment, collaborations through SLAC sessions and focus group discussions (FGD) to improve and enhance their digital competences and participating in online training initiatives.

However, some indicators reveal that they are "Competent" on areas such as use digital technologies to communicate with colleagues, share and exchange knowledge, resources and experiences for one's own professional development, employ the insights and resources from a collaborative networks which teachers' belongs to get feedback and improve digital competences and to expand repertoire in digital practices through experimentation and peer learning, bench mark practices to improve own digital pedagogies and experiment with and reflect on new pedagogical approaches. This means that elementary teachers in Tiaong I District are competent in the said areas at the same time they are willing and interested in doing self – advancement, collaborate with others, do some experiment and reflect on new pedagogical approaches in line with their line of interests through the use of digital technologies. Integrating digital skills into their performance evaluations promotes continuous improvement of teaching and learning outcomes.

This finding appears that the teachers are well-equipped to successfully use technology into their teaching practices, given their high degree of digital competence [57], that implementing this could have a beneficial influence on classroom participation and the quality of teaching, in line with the study's goals of investigating the connection between digital skills, contextual understanding, classroom involvement, and teaching effectiveness. The results suggest that utilizing the digital talents of teachers has the potential to improve teaching and learning outcomes within the classroom setting. [9]

Table 2. Digital Competence of the Teachers as to Digital Resources

Indicators	**Mean**	**SD**	**VI**
1. Formulate appropriate search strategies to identify digital resources for teaching and learning.	3.60	0.49	**HC**
2. Select suitable digital resources for teaching and learning, considering the specific learning context and learning objective.	3.49	0.53	**C**
3. Evaluate the credibility and reliability of digital sources and resources.	3.46	0.51	**C**
4. Consider possible restrictions to the use or re-use of digital resources (e.g., copyright, file type, technical requirements, legal provisions, accessibility).	3.51	0.50	**HC**
5. Assess the usefulness of digital resources in addressing the learning objective, the competence levels of the concrete learner group as well as the pedagogic approach chosen.	3.53	0.51	**HC**
6. Use office software to design and modify e.g., worksheets and quizzes.	3.49	0.51	**C**
7. Create digital presentations for instructional purposes integrate some animations, links, multimedia or interactive elements.	3.48	0.50	**C**
8. Consider the specific learning objective, context, pedagogical approach, and learner group, when adapting or creating digital learning resources.	3.42	0.49	**C**
9. Use digital technologies to collaboratively develop educational resources and professional collaborative networks to explore and reflect on new pedagogic practices and methods.	3.48	0.50	**C**
10. Actively seek out best practices, courses or other advice to improve my own digital pedagogies and wider digital competences.	3.42	0.50	**C**
Overall	**3.49**	**0.51**	**C**

Legend: *3.50–4.00- Highly Competent (HC), 2.50–3.49- Competent (C), 1.50-2.49- Moderately Competent (RC), 1.00–1.49- Not Competent at all (NC)*

Table 2 displays mean scores, standard deviations, and verbal interpretations to demonstrate the teachers' digital competence with regard to digital resources. The data reveal that digital competence of teacher as to digital resources is "Competent" (M=3.49, SD=0.51). This means that teachers are adequate in selecting suitable digital resources by evaluating their credibility and reliability. Teachers are free to use different software to deign and modify worksheets and quizzes like wizer.me in which build and create more interactive and engaging activities and worksheets. Also, teachers create digital presentations in power point or in using Canva that can integrate different animations considering the learning objectives, context and pedagogical approach. Digital competences are important in selecting digital resources for teaching and learning. The teachers must ensure the credibility and reliability of the resources in order to provide suitable resources to the students. Also, teachers seek best practices like benchmarking on the best practices and attending In Service Training (INSET) for teachers. This is one of the training of teachers in which there is collaboration, discussion and developing strategies for improvement, share wisdom and focus on how to improve learning experience for students.

However, some indicators reveal that they are "Highly Competent" on areas such as formulate appropriate strategies to identify digital resources for teaching and learning, consider possible restrictions to the use and re- use of digital resources and assess the usefulness of digital resources in addressing the learning objective, the competence levels of learners as well as instructional approach chosen. With this, DepEd in which they released a Learning Management Systems (LMSs) which contain item bank that provide digital resources, tools and functions like course management tools, online group chats and discussions to collaborate what kind of strategies is appropriate with digital resources, documents like learning materials, power points, video clips uploading, grading and course evaluations to support teaching and learning. Also, in time of pandemic teachers provided online platform called DepEd Commons and Open Educational Resources (OER) to support distance learning and it is still useful today. The concept of commons and OER is having a portal that automatically provide topic and materials that are suitable in specific grade level.

Furthermore, given the notable degree of digital proficiency exhibited by educators in relation to digital resources, it implies that they possess the requisite aptitudes and competencies to proficiently include digital resources into their instructional methodologies. By integrating digital resources, teachers can optimize classroom engagement and instructional efficacy by customizing education to suit individual learning contexts, objectives, and learner requirements [14]. Effective utilization of digital resources can potentially contribute to more engaging and effective teaching practices [52] ultimately benefiting student learning outcomes [38]

Table 3. Digital Competence of the Teachers as to Teaching and Learning

Indicators	Mean	SD	VI
1. Use available classroom technologies, e.g., digital whiteboards, projectors, PC's.	3.45	0.59	C
2. Consider how students can use digital technologies in collaborative activities or assignments.	3.52	0.55	HC
3. Organize and manage the integration of digital devices (e.g., classroom technologies, students', videos, interactive activities, devices) into the teaching and learning process.	3.46	0.56	C
4. Utilize digital technologies in teaching to increase methodological variation.	3.46	0.55	C
5. Set up, structure and manage content, contributions learning sessions or other interactions in a digital environment.	3.44	0.52	C
6. Evaluate the effectiveness of digitally enhanced teaching strategies and revise my strategies accordingly.	3.37	0.54	C
7. Experiment with and develop new formats and pedagogical methods for instruction.	3.37	0.61	C
8. Contact with learners and listen to their problems and questions with the use of digital technologies like digital communication channel.	3.32	0.62	C
9. Design and implement collaborative activities or projects, I encourage learners to use digital technologies to support their work, e.g., for internet search or to present their results, sourcing and exchanging information.	3.38	0.60	C
10.Apply digital technologies to allow learners to collect evidence and record progress, e.g., audio or video recordings, photos.	3.63	0.48	HC
Overall	**3.44**	**0.57**	**C**

Legend: *3.50–4.00- Highly Competent (HC), 2.50–3.49- Competent (C), 1.50-2.49- Moderately Competent (RC), 1.00–1.49- Not Competent at all (NC)*

Table 3 displays the digital competence of the teachers as to teaching and learning, as evidenced by the average scores and standard deviations. The findings indicate a "Competent" (M=3.44, SD=0.57) among variables. This means that majority of the teachers in Tiaong I District have the ability of using available digital technologies in their teaching and learning. Teachers organized and managed digital devices in order to be effective in teaching. Also, teachers provided a setup, structured and managed content of standardized lesson plan that they can use in teaching from the district and passed it through to the teachers in every school. They just need to modify it according to the needs of the learners and it is aligned with the Most Essential Learning

Competencies (MELC) and Budget of Work. DepEd have programs named DepEd Computerization Program (DCP), it is a nationwide initiative to provide public elementary schools with computers and other ICT Equipment to enhance teaching and learning process and meet the challenges of the digitalized century, the 21st Century. This really helps the teacher to integrate and use digital technologies in their teaching and learning processes. There is a minimal problem in which these ICT Equipment's is not enough on the numbers of students in a school. Teachers need to is deepen their knowledge and extend on how to facilitate, set up, manage to evaluate its effectiveness.

However, there are two indicators that is "Highly Competent" on areas such as considering how students can use digital technologies in collaborative activities and assignment and apply digital technologies to allow learners collect evidence and record progress like audio, video and photo recording. This means that teachers are always consider how students use digital technologies because many students do not have technologies and need to supervise in using it that's why consideration is very important. Teachers are teaching their students and familiarize them to the features of digital technologies before they use it on their own. Showing them how to use it like in TLE-ICT subject. By this, teachers teach students how to track their records while using google classroom, passing their work online. This will serve also as their evidences of their work. This will also help the learners to be more independent to monitor their progress in learning.

Taking advantage of teachers' digital skills could lead to more dynamic and effective teaching, which would eventually help students to learn. [4]

Table 4. Digital Competence of the Teachers as to Assessment

Indicators	**Mean**	**SD**	**VI**
1. Utilize digital assessment tools to monitor the learning process and obtain information on learners' progress.	3.42	0.57	C
2. Employ digital technologies to enhance summative assessment in tests, e.g., through computer/laptop-based tests, implementing audio or video (e.g., in language learning), using simulations or subject-specific digital technologies as test environments.	3.42	0.58	C
3.Use digital technologies to enhance formative assessment strategies, e.g., using classroom response systems, quizzes, games.	3.39	0.55	C
4. Reflect on the appropriateness digital assessment approaches and adapt strategies accordingly.	3.47	0.56	C
5. Use digital technologies to record, compare and synthesize data on learner progress.	3.44	0.56	C
6. Operate digital technologies to compile and grade an overview on learners' progress, which I use as a basis for offering feedback and advice on electronically submitted assignments.	3.40	0.53	C
7. Adapt my teaching and assessment practices, based on the data generated by the digital technologies I use.	3.39	0.57	C
8. Provide personal feedback and offer differentiated support to learners, based on the data generated by the digital technologies used.	3.42	0.58	C
9. Use digital technologies to enable learners and parents to remain updated on progress and make informed choices on future learning priorities, optional subjects or future studies.	3.36	0. 55	C
10. Reflect on, discuss, re-design and innovate teaching strategies in response to the digital evidence I find, as concerns learners' preferences and needs as well as the effectiveness of different teaching interventions and learning formats.	3.50	0.50	HC
Overall	**3.42**	**0.56**	**C**

Legend: *3.50–4.00- Highly Competent (HC), 2.50–3.49- Competent (C), 1.50-2.49- Moderately Competent (RC), 1.00–1.49- Not Competent at all (NC)*

Table 4 presents the digital competence of teachers in the domain of assessment, highlighting mean scores and standard deviations. The numerical results indicate a "Competent" (M = 3.42, SD = 0.56), among educators across various aspects of utilizing digital technologies for assessment purposes. However, there is one indicator which is "Highly Competent" in terms of reflecting, discussing, re- designing and innovating teaching strategies in response to the digital evidence found for the learners' preferences and needs as well as effectiveness of different teaching interventions and learning formats.

This data means that teachers in Tiaong I District uses various digital assessment tools to monitor students' progress and evaluate learning outcomes. DepEd launches the Professional Development Program on assessment and emerging literacies with focus on Program for International Student Assessment (PISA). According to the Department of Education (2021), the assessment PD aims to improve teachers' assessment strategies, methods and content knowledge in Math, Science and Reading to assist them in integrating emerging literacies as determined by international assessments into their teaching methods. This PD used by the teachers on how they asses their students using digital tools.

Also, teachers need to be more equipped and proficient, have more skills and practices in utilizing and administering digital assessment to support learners. The DepEd worked in collaborations with different assessment experts and partners in the development of PD. Also, attending LAC Sessions is one of the programs that helps the teachers to improve their teaching and learning as well as it offers topics in ICT on how to have an easier and effective

methods of assessment. On the other side, teachers were highly competent on reflecting, discussing, re-designing and innovating teaching strategies as concerns learner's preferences and needs. With this, utilizing digital technologies in assessment of teachers use to analyze and quick check for the understanding and monitor students' progress to have an effective different intervention and learning formats. Also, teachers can create more responsive, effective and engaging learning assessment that better meet the diverse needs and preference of learners.

Hence, the utilization of instructors' digital proficiency in evaluation holds the potential to generate educational experiences [22] that are more significant and influential for pupils.

Table 5. Digital Competence of the Teachers as to Empowering Learners

Indicators	Mean	SD	VI
1. Provide equitable access to appropriate digital technologies and resources, e.g., ensuring that all students have access to the digital technologies used.	3.33	0.61	C
2. Select and employ digital pedagogical strategies which respond to learners' digital context, e.g., contextual constraints to their technology use (e.g., availability), competences, expectations, attitudes, misconceptions and misuses.	3.34	0.60	C
3. Employ digital technologies and strategies, e.g., assistive technologies, designed for learners in need of special support (e.g., learners with physical or mental constraints; learners with learning disorders).	3.34	0.59	C
4. Apply design principles to enhance the accessibility of resources and digital environments utilized in educational setting.	3.32	0.56	C
5. Monitor and reflect on the suitability of the measures implemented using digital technologies to improve accessibility and adapt strategies accordingly.	3.37	0.52	C
6. Allow for different learning pathways, levels and speeds when designing, selecting and implementing digital learning activities.	3.38	0.55	C
7. Use digital technologies to visualize and explain new concepts in a motivating and engaging way, e.g., by employing animations or videos.	3.39	0.55	C
8. Employ digital learning environments or activities which are motivating and engaging, e.g., games, quizzes.	3.37	0.57	C
9. Use digital technologies to allow learners to actively engage with the subject matter at hand, e.g., using different senses, manipulating virtual objects, varying the problem set up to enquire into its structure, etc.	3.33	0.56	C
10. Reflect on how suitable the different digital technologies used are in increasing learners' active learning, and to adapt strategies and choices accordingly.	3.36	0.55	C
Overall	**3.35**	**0.57**	**C**

Legend: *3.50–4.00- Highly Competent (HC), 2.50–3.49- Competent (C), 1.50-2.49- Moderately Competent (RC), 1.00–1.49- Not Competent at all (NC)*

Table 5 displays the digital competence of teachers in empowering learners, with mean scores and standard deviations provided. The result reveal that teachers is "Competent" (M=3.35, SD= 0.57) in all areas of indicator. This means that in Tiaong I District teachers have the digital ability to empowering learners to actively engage and influence them in using appropriate digital technologies and resources. However, to meet the needs identified by the commonly used ratings, specific interventions are necessary. Respondents need to have a strong digital skill to navigate the digital platforms, tools and resources effectively to empower learners. One of the interventions needed is incorporate creative digital tools like multimedia creation software, games and videos in class to motivate learners to express themselves, experiment new ideas and to be more active and engage in class. These interventions should focus on selecting and implementing digital teaching strategies that are responsive to the diverse digital contexts and needs of learners. Additionally, this would contribute to the improvement of teachers' overall digital skills and enable learners to be more empowered through the use of digital tools. This will achieve by attending seminars, feedback and collaboration from the experts.

The shown proficiency of teachers in utilizing digital tools to empower students implies that teachers possess the necessary competences and capabilities to proficiently utilize digital technology in augmenting learners' involvement and expanding educational achievements. This particular skill possesses the capacity to foster inclusive educational settings, address the varied requirements of students, and enable dynamic learning encounters [6].

Table 6. Digital Competence of the Teachers as to facilitating learners' digital competence

Indicators	Mean	SD	VI
1. Articulate information needs, to search for data, information and content in digital environments, to access them and to navigate between them.	3.38	0.57	C

2. Analyze, compare and critically evaluate the credibility and reliability of sources of data, information and digital content.	3.39	0.58	C
3. Organize, store and retrieve data, information and content in digital environments.	3.39	0.57	C
4. Interact through a variety of digital technologies.	3.44	0.55	C
5. Understand appropriate digital communication means for a given context.	3.44	0.60	C
6. Share data, information and digital content with others through appropriate digital technologies.	3.42	0.59	C
7. Seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.	3.39	0.59	C
8. Create, manage and protect one or multiple digital identities and one's own reputation.	3.36	0.58	C
9. Express themselves through digital means.	3.48	0.55	C
10. Understand safety and security measures and protect personal data and privacy in digital environments	3.34	0.55	C
Overall	**3.40**	**0.57**	**C**

Legend: *3.50–4.00- Highly Competent (HC), 2.50–3.49- Competent (C), 1.50-2.49- Moderately Competent (RC), 1.00–1.49- Not Competent at all (NC)*

Table 6 shows the digital competence of teachers as to facilitating learners' digital competence. The data reveal that teachers are "Competent" (M=3.40, SD=0.57) in all indicators. It implies that teachers are competent in facilitating learners' digital competence by being a role models and skilled enough in demonstrating effective use of digital tools and platforms. Teachers in Tiaong I District needs to be more digitally competent to help the learners improve their digital competences. The subject of Information and Communication Technology (ICT) is in the intermediate level, wherein, learners have more interaction and practices like sharing of data, information and digital content with others in using digital technology with the help of digitally competent teachers. This means that if the teacher is digitally competent the more that they facilitate well the learners in their digital competences because they have enough skills and experiences like in the subject of TLE-ICT.

This result is aligned with the study in which teachers that are digitally competent should help their learners to develop their digital competences as well so they can manage risk and use digital tools in a responsible and safe manner. [13]

Table 7. Contextual Knowledge of the Teachers described as to Behavioral Beliefs as to Attitude

Indicators	**Mean**	**SD**	**VI**
1. integrating technology inside the classroom will foster student engagement, help students develop technology skills that aid their learning, provide students with more resources to enhance learning, and help students learn class material.	3.60	0.49	HP
2. incorporating technology into the classroom will benefit students and provide them with learning resources aligned with instruction.	3.53	0.50	HP
3. naturalize technologytakes extra time in classroom instruction, but it is worthwhile.	3.43	0.54	P
4. potential technological glitches will prevent the integration of technology in classroom instruction.	3.46	0.50	P
5. assimilating technology into classroom instruction is compatible with the way I will teach.	3.54	0.50	HP
6. merging digital technology is valuable and pleasant	3.54	0.50	HP
7. incorporating technology into classroom instruction is helpful and beneficial.	3.52	0.51	HP
8. accommodating technology is rewarding and fulfilling in classroom instruction.	3.51	0.50	HP
9. unifying technology in classroom instruction is interesting and meaningful.	3.56	0.50	HP
10. blending technology is educational and entertaining in classroom instruction.	3.66	0.48	HP
Overall	**3.54**	**0.50**	**HP**

Legend: *3.50–4.00- Highly Practiced, 2.50–3.49- Practiced, 1.50-2.49- Moderately Practiced, 1.00–1.49- Not Practiced at all (NP)*

Table 7 shows the contextual knowledge of teachers described in terms of behavioral beliefs towards integrating technology in the classroom. These scores indicate a "Highly Practiced" among indicators regarding the integration of technology in classroom instruction specifically, teachers express strong positive attitudes towards incorporating technology into instruction. However, there is "Practiced" among these indicators such as limited time and technical issues.

The respondents are highly practiced because teachers have positive attitude in integrating technology into their instruction. They have skills that will make benefits their students and make their works easier. Also, integrating technology, teacher can make the learning more interactive and engaging for students, capturing their interest and increasing motivation to participate lessons. This highlights the significance of continuous professional growth to fully utilize the educational advantages of technology. Although it takes time to integrate technology in their instruction because of the various and scarcity of digital resources, there are good outcomes because teachers make the learners attentive and focused when it comes to technology. Teachers are exposed in technology, availability of resources, opportunities provided to use technology in the classroom. Also, teachers use technology inside the classroom because learners nowadays are more interested and catching their attention in terms of technology.

Further, understanding the nuances of these attitudes and their impact on teaching practices and student outcomes would provide valuable insights for educational policy and practice [15]. Moreover, identifying any potential gaps or challenges in translating these positive attitudes into effective instructional strategies could inform targeted professional development initiatives [41] to support teachers in maximizing the benefits of technology integration.

Table 8. Contextual Knowledge of the Teachers described as to Normative Beliefs as to Subjective Norms

Indicators	**Mean**	**SD**	**VI**
1. integrating technology into classroom instruction is expected by the students.	3.48	0.53	P
2. incorporating technology into classroom instruction will be looked forward to by the students.	3.45	0.54	P
3. blending technology into classroom instruction will be expected by the school heads and the veteran's teacher.	3.47	0.54	P
4. assimilating technology in classroom instruction will be expected by the district leaders and other school leaders.	3.43	0.52	P
5. organizing technology in classroom instruction will be anticipated by parents.	3.50	0.51	HP
6. the use of technology inside the classroom will be predicted by the teacher, whose ideas are valued.	3.41	0.53	P
7. conforming technology will be easy and will be completely up to me.	3.50	0.51	HP
8. determining how to integrate technology into classroom instruction.	3.48	0.53	P
9. the use of technology as I see fit and consistently.	3.52	0.53	HP
10.a skill is needed to integrate technology into classroom instruction.	3.47	0.50	P
Overall	**3.47**	**0.52**	**P**

Legend: *3.50–4.00- Highly Practiced, 2.50–3.49- Practiced, 1.50-2.49- Moderately Practiced, 1.00–1.49- Not Practiced at all (NP)*

Table 8 shows the contextual knowledge of teachers described in terms of normative beliefs, particularly subjective norms, regarding the integration of technology into classroom instruction. The table presents "Practiced" (M=3.47, SD=0.52) among all indicators. However, some indicators are highly practiced such as organizing technology in classroom instruction look forward by the parents, will be easy and completely up to teachers and fit and consistently.

This means that teachers in Tiaong I District have high expectations and enthusiasm from various stakeholders, including students, school administrators, experienced educators, district supervisor, parents, and even themselves, regarding the integration of technology in educational environments. Before the school year starts, district in elementary level provides In Service training in order to remind teachers about the appropriate instruction including integration of technology. Students nowadays are exposed in technology in which can help learners to encourage participation of students so, district supervisor give training about it. At the schools, principals call for a meeting with their teacher to refresh teachers' different strategies and techniques including the integration of technology which might give easier for them to teach. At the beginning of the classes, adviser call a Homeroom PTA Meeting. In this meeting included how the school year will run. Teachers gives insight about different strategies and innovations that helps learners to achieve their goal with the help of technology because they are really exposed to them. Teacher introduce how technology will help their child in learning and with this, parent, students, principals, stakeholders and even co teachers expect integration of technology in classroom instruction.

The investigation of how normative ideas influence teachers' decisions and behaviors toward the integration of technology can provide valuable insights for developing targeted interventions. [57] and professional development initiatives [33] that aim to improve teaching methods and student outcomes in the context of the digital environment.

Table 9. Contextual Knowledge of the Teachers described as to Control Beliefs as to Perceived Behavioral Control

Indicators	**Mean**	**SD**	**VI**
1. Funding and support from others at school will affect the ability to integrate technology into classroom instruction.	3.48	0.56	P

2. Acquiring professional development (e.g., workshops, online resources, instructional coaches) will affect the ability to incorporate technology in classroom instruction.	3.49	0.54	P
3. Accessing technology (computer technology and software/apps) will support and affect the ability to blend technology into classroom instruction.	3.36	0.57	P
4. Obtaining mobile devices for students' use will affect their ability to integrate technology into classroom instruction.	3.46	0.54	P
5. Associating positive attitudes towards technology with a greater willingness to integrate it into instruction.	3.40	0.53	P
6. Integrating technology will be easy and completely up to me.	3.39	0.52	P
7. Incorporating technology is entirely up to me and how much I use it in my teaching.	3.45	0.54	P
8. Finding methods to integrate technology into instruction in the classroom is important.	3.44	0.55	P
9. Organizing technology into classroom instruction needs to be easy and confident enough.	3.46	0.54	P
10. Enhancing professional development opportunities will be technological skills in using technology to support classroom instruction.	3.50	0.54	HP
Overall	3.44	0.54	**P**

Legend: *3.50–4.00- Highly Practiced, 2.50–3.49- Practiced, 1.50-2.49- Moderately Practiced, 1.00–1.49- Not Practiced at all (NP)*

Table 9 shows the contextual knowledge of teachers described in terms of control beliefs, specifically perceived behavioral control, regarding the integration of technology into classroom instruction. The table provides, teachers are "Practiced" (M=3.44, SD= 0.54) in all indicators. However, there is one indicator which is highly practiced in terms of enhancing professional development opportunities about technological skills in using technology to support classroom instruction.

It implies with the allocation of maintenance and other operating expenses (MOOE) that can be spent on activities and necessities like electricity and water that supports the program and help to maintain a safe and healthy environment. However, the shortage of the school is not included in the utilization of the MOOE unless when the vacation of the student arrived. With these shortage, Principals and teachers thinking about the possible solution with this. Regarding on this, every year or every other year, schools plan activities or programs in which this activity will help the school about the shortage in every part of the schools. Some schools do not enough digital resources that can help with their instruction like TV. Many teachers believed that integrating technology into classroom instruction will be effective and much easier for the students. Because, MOOE is not enough, in order to achieve this objective, schools need a support and funds from others. One of this is fund raising through pageant and other activities. With the help of this, each activity has a project goal that need to achieve. In accordance to the project goal, this support from others will affect the ability to integrate technology like TV in classroom instruction.

Aside from this, teachers in Tiaong I needs to find methods to integrate technology into instruction. Requiring CPD units in renewing the license of every teacher in which teachers need to attend seminars which may help the teachers to develop and improve the professional practices particularly in line with the topics of digital competences. This highlights the necessity for additional support and training to empower teachers and elevate their confidence levels, ultimately leading to a "Highly Practiced" in some indicator.

The average scores of believed suggest that teachers acknowledge the significant influence of multiple factors, such as financial support, support systems, opportunities for professional development, technological availability and favorable attitudes towards technology, on their ability to integrate technology in educational environments. This highlights the importance of recognizing perceived behavioral control when understanding instructors' decisions and actions regarding the integration of technology [28]. Moreover, prioritizing the enhancement of professional development opportunities specifically tailored to bolster technical skills can equip teachers with supplementary resources to proficiently employ technology in fostering student learning in the era of digitalization.

Improving the efficiency of teaching skills, it can provide educators with more tools to effectively utilize technology in promoting student learning in the digital age. [53]

Table 10. Classroom Engagement observed as to Cognitive Engagement

Indicators	**Mean**	**SD**	**VI**
1. prepare my lessons that aligned with the learning objectives.	3.62	0.49	HO
2. use the method of critical thinking to encourage students to think analytically and solve problems.	3.64	0.48	HO
3. evaluate and adjust teaching methods and improvement.	3.62	0.50	HO
4. engage in discussion, answer questions and guiding activities.	3.60	0.51	HO

5. learn by staying myself informed about educational trends and incorporating new knowledge.	3.64	0.48	HO
6. adjust teaching strategies based on students' needs and feedback.	3.69	0.46	HO
7. assess students' progress to inform instructional decisions.	3.66	0.48	HO
8. ensure lessons align with curriculum goals and standard.	3.58	0.50	HO
9. use inquiry-based teaching that encourage curiosity and exploration in the learning process.	3.60	0.49	HO
10. provide constructive feedback to guide students' cognitive development.	3.72	0.45	HO
Overall	**3.64**	**0.48**	**HO**

Legend: *3.50–4.00- Highly Observed, 2.50–3.49- Observed, 1.50-2.49- Moderately Observed, 1.00–1.49- Not Observed at all (NO)*

Table 10. indicate a pervasive commitment among teachers to cognitive engagement in their instructional practices. The data reveal that teachers is "Highly Observed" (M=3.64, SD=0.48) in all of the indicators.

The classroom engagement indicators show highly observed (HO) rating, reflecting effective teaching practices. This means that teachers in public elementary teachers are skilled enough in terms or classroom engagement as to cognitive engagement. They all know their roles of being a teacher on how to use their teaching strategies and methods because there is evaluation of teacher through Classroom Observation. All of this engagement of teacher in their work is for the welfare of the learners which stimulates curiosity, fosters participation, and encouragement to become their learners more active. While overall engagement is high, there's room for improvement in areas like inquiry-based teaching and providing constructive feedback for teachers. There are trainings regarding cognitive engagement of teachers, having a reminder in group chats about the things that they need to do and accomplish and technical assistance in classroom observation.

This also indicates a comprehensive involvement of teachers in diverse facets of teaching. They are engaged in various activities such as preparing lessons aligned with objectives, promoting critical thinking, continuously evaluating and adjusting teaching methods, actively participating in discussions and activities, staying updated on educational trends, adapting strategies based on student needs and feedback, assessing student progress, aligning lessons with curriculum goals, promoting inquiry-based learning, and offering constructive feedback to support student cognitive development. Such high levels of cognitive engagement are essential for fostering effective classroom instruction and student learning [30]. As for Kelly et al. (2023), teachers that prioritize cognitive engagement create dynamic and effective learning environments that help kids succeed in school.

Table 11. Classroom Engagement observed as to Emotional Engagement

Indicators	**Mean**	**SD**	**VI**
1. understand and responds to students' emotion with compassion.	3.64	0.50	HO
2. maintain an optimistic and encouraging attitude.	3.70	0.47	HO
3. establishstrong respectful relationships with students.	3.68	0.48	HO
4. demonstrate genuine concern for students' well- being.	3.68	0.50	HO
5. motivate students through positive reinforcement.	3.66	0.50	HO
6. am attentive to students' emotional needs and concern.	3.62	0.50	HO
7. address conflicts in a fair and emphatic manner.	3.63	0.54	HO
8. use humor to create a positive and enjoyable classroom atmosphere.	3.64	0.49	HO
9. develops belief in students that education is the main stream of life and defines role of the students according to their abilities and aptitude.	3.62	0.50	HO
10. input energy to create active and encouraging relationships with students' experience higher levels of well-being, and have less emotional burnout and stress.	3.61	0.50	HO
Overall	**3.65**	**0.50**	**HO**

Legend: *3.50–4.00- Highly Observed, 2.50–3.49- Observed, 1.50-2.49- Moderately Observed, 1.00–1.49- Not Observed*

Table 11. shows the classroom engagement observed as to emotional engagement. The data present that teacher is "Highly Observed" in all of the variables. This suggests a high level of emotional engagement observed among teachers in their interactions with students.

According to Article 3: Section 7 of the Code of Ethics for Professional teacher that every teacher shall maintain harmonious and pleasant personal and official relations with other professionals, with government officials, and with the people individually. This means that teachers are known for their empathetic and nurturing approach to education. Teachers have the quality of relationship with the student by having empathy and respect for the students.

Giving advice, encouragement and motivation to the learners indicates the teacher's effort to support students' self-esteem and confidence. Teachers also prioritizes the student well-being and mental health in handling challenging situations, conflicts and moments of stress and frustration by regulating the emotions and respond calmly. Findings suggest also that emotionally invested at work involves both mentally and physically invested in their work.

Teachers' high emotional engagement emphasizes the importance of positive teacher-student connections [51]. Such engagement is crucial for creating a nurturing classroom environment where students feel understood, supported, and motivated to learn. These findings highlight the need for educators to prioritize empathy, optimism, and genuine concern for student well-being in their teaching practices. Nurturing emotional engagement in the classroom can lead to enhanced student well-being [69], reduced emotional burnout [46], and ultimately, improved learning outcomes [1]

Table 12. Classroom Engagement observed as to Social Engagement

Indicators	Mean	SD	VI
1. facilitate group activities that encourage social interaction.	3.58	0.51	HO
2. effective convey information and encourage students' discussion.	3.66	0.47	HO
3. promote teamwork and shared learning experiences.	3.60	0.53	HB
4. encourage open dialogues and diverse perspectives.	3.62	0.51	HO
5. facilitate an environment where students support each other.	3.64	0.51	HO
6. establish a sense of community within the classroom.	3.67	0.49	HO
7. ensure all students to feel valued and included.	3.62	0.51	HO
8. am aware to students' social needs and dynamics.	3.64	0.48	HO
9. incorporate activities that involve social interaction and cooperation.	3.66	0.47	HO
10. Instill the importance of collaborative work among pupils.	3.59	0.52	HO
Overall	**3.63**	**0.50**	**HO**

Legend: *3.50–4.00- Highly Observed, 2.50–3.49- Observed, 1.50-2.49- Moderately Observed, 1.00–1.49- Not Observed*

Table 12 shows classroom engagement observed as to social engagement. The table present that teacher is "Highly Observed" (M=3.63, SD= 0.50) in all indicators. This suggests a generally high level of social engagement observed among teachers in their instructional practices.

According to the high outcome of the respondents, this means that teachers in public elementary school promote collaborative learning activities to the students. In the K-12 program, one of the pedagogies promoted is teachers use collaborative and constructivism approach in classroom where student interact with one another. It allows them to work together in order to have teamwork. In the field of elementary teachers, mostly they teach the student with a manipulative, in which engaging students visually and physically involved, the more the chance of learners in social interaction, the more that the information will retain into them. Also, socially engaged teachers prioritizes the development of a strong community in which the students feel that they are valued, respected and connected to one another. Group activities given by the teacher also promotes shared learning experiences, support one another and cooperation.

The findings also indicate that teachers are actively engaged in fostering social interaction, collaboration, and a sense of community within the classroom. This high level of social engagement is crucial for creating inclusive and supportive learning environments where students feel valued and included [20]. By promoting teamwork, open dialogues, and activities that encourage social interaction and cooperation, teachers can enhance student engagement and facilitate deeper learning experiences. Additionally, the importance of instilling the value of collaborative work among students highlights the potential for developing essential teamwork skills that are vital for success in both academic and real-world settings [21]. These results underscore the significance of prioritizing social engagement as a key component of effective classroom instruction, ultimately contributing to enhanced student learning outcomes and overall classroom effectiveness.

Table 13. Level of Instructional Effectiveness as to Instructional Planning Skills

Indicators	Mean	SD	VI
1. prepare a comprehensive, organized, and well thought-of learning plan that includes varied instructional techniques and class activities.	3.51	0.54	HP
2. incorporate the use of different resources, technology or instructional materials to facilitate learning.	3.54	0.51	HP
3. create opportunities for maximum participation of students.	3.53	0.53	HP
4. provide appropriate assessment tools as indicated in the learning plan.	3.50	0.53	HP

5. identify opportunities to integrate content from multiple subject areas or disciplines to enhance learning experiences.	3.50	0.53	HP
6. articulate specific learning objectives aligned with curriculum standards or educational goals.	3.51	0.54	HP
7. plan strategies to accommodate diverse learning needs, including variations in students' readiness, interests, and learning styles.	3.53	0.55	HP
8. utilize a variety of effective teaching methods and techniques suited to the lesson objectives and students' needs	3.50	0.54	HP
9. willed and open for feedback to revise lesson plans based on student needs and classroom dynamics.	3.52	0.56	HP
10.seek input from colleagues, mentors, and students to refine instructional practices and improve future planning.	3.51	0.51	HP
Overall	**3.51**	**0.53**	**HP**

Legend: *3.50–4.00- Highly Proficient, 2.50–3.49- Proficient, 1.50-2.49- Moderately Proficient, 1.00–1.49- Not Proficient at all (NP)*

Table 13 depicts the level of instructional effectiveness as to instructional planning skills. This shows that the teachers are perceived to be "Highly Proficient" (M=3.51, SD=0.53) in instructional planning skills in order to be proficient in instructional level of effectiveness in this domain. In the field of public elementary schools, teachers are allowed to be flexible in instructional planning. They are highly proficient in preparing and organizing lesson plans, teachers are opened to utilize different kind of strategies and techniques and activities for the different learners with different needs. This plan is aligned with the MELC or Most Essential Learning Competencies to guide the curriculum and instruction in public school. Also, to facilitate learning, respondents include the use of different resources specifically with technology. Having technology in instruction, teachers think that students have the opportunities in participating classes because they are aware and interested in technology nowadays.

For instance, integrating content by the teacher from multiple subjects could be enhanced given the diverse student backgrounds. Seeking input from colleagues and students highlights a commitment to improvement, emphasizing the need for ongoing professional development tailored to address specific areas of growth.

The findings suggest that teachers have a strong repertoire of instructional planning abilities, such as the capacity to create thorough learning plans, include various resources and technology, and cater to the unique requirements of students. Mastery of this skill is crucial for fostering student involvement and enabling significant educational encounters [44]. Moreover, the willingness of teachers to receive feedback and work together indicates a dedication to ongoing enhancement [54] resulting in improved teaching methods and superior student achievements. Hence, allocating resources towards professional development initiatives that specifically target the enhancement of instructional planning abilities can effectively contribute to the improvement of teaching quality and the overall learning experiences of students [36].

Table 14. Level of Instructional Effectiveness as to Instructional Skills

Indicators	Mean	SD	VI
1. motivate students	3.71	0.46	HP
2. communicate proficiently in English or Filipino (as medium of instruction)	3.67	0.47	HP
3. display enthusiasm in teaching	3.66	0.47	HP
4. present the lesson in clear, concise and logical manner	3.68	0.47	HP
5. ask hots and metacognitive questions to encourage students to think and to teach students how to learn.	3.60	0.50	HP
6. use of different teaching methods and learning experiences to address multiple intelligences of the students	3.66	0.49	HP
7. give immediate positive comments and feedback	3.64	0.49	HP
8. summarize the lesson comprehensively using appropriate methods	3.64	0.48	HP
9. utilize indicated assessment tools in the learning plan	3.64	0.48	HP
10.provide opportunities for students to show evidence of learning like performance tasks, asking and answering questions, etc.	3.66	0.49	HP
Overall	**3.66**	**0.48**	**HP**

Legend: *3.50–4.00- Highly Proficient, 2.50–3.49- Proficient, 1.50-2.49- Moderately Proficient, 1.00–1.49- Not Proficient at all (NP)*

Table 14. presents the level of instructional effectiveness as evaluated based on instructional skills. The data reveal that teachers are "Highly Proficient" (M=3.66, SD= 0.48) in instructional skills in order to be proficient in the level of instructional in this domain.

This is in line with the ratings of the respondents in IPCRF in their demographic profile in which 85% of them are very satisfactory or highly proficient. In which, teachers are skilled enough to motivate the students in their learnings. Teachers uses different kinds of techniques and strategies to facilitate

learning, develop critical and creative thinking as well as higher order thinking skills of the students. They also applied knowledge of content within and across curriculum teaching areas with different methods. Managing learner behavior constructively by applying positive and non-violent discipline to ensure learner centered environment. Giving them positive feedbacks to boost them to be independent and have a room for improvement to achieve their goals. Ensuring learners active participation in each lesson and allowing them to express their ideas and opinions. Lastly is giving them the chance and equal opportunities to value diversity.

Achieving educational goals, encouraging student engagement, and providing meaningful learning experiences all depend on these high levels of instructional skills in the level of instructional effectiveness. Furthermore, the efficacy of instruction is further increased by the regular use of assessment instruments and chances for students to demonstrate their understanding [3]. Consequently, funding programs for professional development that uphold these teaching abilities can help to improve teaching strategies [71] and raise student learning objectives [26]

Table 15. Level of Instructional Effectiveness as to Knowledge of the Subject Area

Indicators	Mean	SD	VI
1. Demonstrate mastery through concepts and principles in the assigned subject	3.67	0.47	HP
2. Integrate the subject matter with other subjects	3.68	0.47	HP
3. Include relevant current topics and issues related to the lesson/topic taught.	3.60	0.50	HP
4. Am able to make connections between different concepts and subfields within the discipline.	3.59	0.51	HP
5. Possess proficiency in the fundamental skills and techniques associated with the subject matter.	3.62	0.50	HP
6. Provide clear explanations and guidance to help students navigate increasingly complex topics.	3.57	0.51	HP
7. Challenge students to evaluate evidence, consider multiple perspectives, and draw well-reasoned conclusions.	3.56	0.51	HP
8. Participate in professional development opportunities, conferences, and collaborative networks related to the subject area.	3.59	0.52	HP
9. Adjust instructional strategies and approaches based on students' interests, abilities, and learning styles.	3.56	0.50	HP
10. Use a variety of assessment methods to gauge student learning and adjust instruction accordingly.	3.63	0.48	HP
Overall	**3.61**	**0.50**	**HP**

Legend: *3.50–4.00- Highly Proficient, 2.50–3.49- Proficient, 1.50-2.49- Moderately Proficient, 1.00–1.49- Not Proficient at all (NP)*

Table 15 illustrates the level of instructional effectiveness concerning knowledge of the subject area. The data indicates that, teachers are "Highly Proficient" (M=3.61, SD= 0.50) in knowledge of the subject area in order to be proficient in instructional in this domain.

This means that respondents display high proficiency in knowledge of the subject area. In public schools, there is Classroom Observation (CO) in which teachers need to demonstrates mastery of the content and integration in the other subject. Teachers also include the current topic and issues to relate the students in the topic and to promote active involvement in the lesson. Additionally, they use different strategies and techniques and create instructional materials that enhance learner achievement in which learner-centered strategies is highlighted. Daily Lesson Logs (DLLs) is developed differentiated, developmentally appropriate learning experiences to address learners' gender, needs strengths, interests and experiences.

The results indicate that teachers possess a solid grasp of the subject matter, integrating it across disciplines, including current topics, and drawing connections between concepts within the field. They also show skill in fundamental techniques, offer clear explanations, and encourage critical thinking. Furthermore, their involvement in professional development demonstrates a dedication to growth, and adapting teaching methods to meet student needs enhances effectiveness [60]. Thus, nurturing teachers' subject matter expertise through ongoing development efforts can improve teaching quality [27] and student learning outcomes [66].

Table 16. Level of Instructional Effectiveness as to Rapport with the Student

Indicators	Mean	SD	VI
1. show respect for students' ideas and opinions	3.70	0.47	HP
2. use appropriate language and speaks in anon-threatening manner.	3.64	0.51	HP
3. have time in counseling the students to speak up with their minds.	3.66	0.47	HP
4. engage with students through announcements, discussions, and feedback on assignments.	3.61	0.50	HP
5. customize digital interactions to address individual student needs and preferences.	3.59	0.52	HP

6. incorporate interactive elements into online lessons, such as polls, quizzes or multimedia content, to engage students and promote participation.	3.58	0.52	HP
7. support students in navigating digital tools and platforms, providing tutorials or resources as needed.	3.55	0.54	HP
8. ensure that digital materials and resources are accessible to all students, including those with diverse learning needs or disabilities.	3.58	0.51	HP
9. acknowledge and celebrates student achievements and milestones in the digital space, such as through virtual awards, shout-outs, or recognition ceremonies.	3.62	0.50	HP
10. maintain regular communication and interaction with students throughout the duration of the course, fostering a sense of continuity and connection through the use of digital technologies.	3.72	0.45	HP
Overall	**3.63**	**0.50**	**HP**

Legend: *3.50–4.00- Highly Proficient, 2.50–3.49- Proficient, 1.50-2.49- Moderately Proficient, 1.00–1.49- Not Proficient at all (NP)*

Table 16 presents the level of instructional effectiveness regarding rapport with students. The result indicates that teachers are "Highly Proficient" (M=3.63, SD=0.50) rapport with the students in order to be proficient in instructional in this domain.

The highly proficient (HP) ratings in instructional effectiveness regarding rapport with students indicate a supportive and engaging learning environment. This means that teachers demonstrate proficiency in digital interaction and communication, enhancing strategies to address diverse student needs and preferences is essential. Teachers also promote positive and supportive learning environment in which student feel that they are valued, respected and emotionally safe. This positive environment that created by the teacher enhances students' motivation to speak up with their minds and confidently interact with other, having regular communication through the use of digital technologies. To promote participation, teacher integrate interactive elements like in ICT subject, the topic is about audio and video conferencing. With the scarcity of digital resources in school, teachers developed a plan in which those students without resources in joining the conferencing through google meet suggested that they go to their classmate which is near to them with internet and mobile phones. In this strategy of the teacher, there are no learners are left behind. They feel that they are included and valued because teacher finds way in order to join them in the conferencing even though they don't have available resources. Moreover, in order to celebrate the achievements of the learners in everyday lesson and in quarterly grades, teachers provide positive feedback by giving awards. They posted it in the group chats and in face book to appreciate their efforts in their achievements.

The results indicate that teachers establish extreme connections with students by valuing their perspectives, employing suitable communication, and involving them in diverse interactions, whether face-to-face or online. Additionally, their initiatives to tailor digital engagements, assist students with technology, and recognize student accomplishments all contribute to cultivating a favorable learning atmosphere. Sustaining consistent communication and engagement via digital platforms additionally reinforces the feeling of connection and progression in learning [12]. Thus, emphasizing the cultivation of rapport-building abilities and proficient utilization of digital resources can elevate instructional efficacy [56]

Table 17. Level of Instructional Effectiveness as to Classroom management skills

Indicators	**Mean**	**SD**	**VI**
1. ensure a suitable learning environment at all times.	3.72	0.45	HP
2. carry out routine procedures effectively.	3.69	0.48	HP
3. promote positive discipline in the class at all times.	3.70	0.49	HP
4. manage time through meaningful activities/interaction	3.72	0.45	HP
5. set up effectively and organizes digital learning platforms or learning management systems (LMS) for easy navigation and access to resources.	3.66	0.49	HP
6. communicate clear guidelines and expectations for online behavior, participation, and academic integrity.	3.67	0.49	HP
7. encourage active engagement and monitors participation levels.	3.66	0.53	HP
8. structure collaborative activities and group projects effectively, assigning roles and responsibilities as needed.	3.64	0.51	HP
9. provide students with opportunities to submit assignments and gives feedback in a timely manner.	3.64	0.51	HP
10. structure lessons and activities to optimize instructional time and minimize distractions.	3.65	0.51	HP
Overall	**3.67**	**0.49**	**HP**

Legend: 3.50–4.00- Highly Proficient, 2.50–3.49- Proficient, 1.50-2.49- Moderately Proficient, 1.00–1.49- Not Proficient

Table 17 shows a comprehensive assessment of instructional effectiveness concerning classroom management skills. The result in each indicator pertains that the teacher are "Highly Proficient" (M=3.67, SD=0.49) of effectiveness across all dimensions. This indicates that teachers excel in various aspects of classroom management, including ensuring a suitable learning environment, carrying out routine procedures effectively, promoting positive discipline, and managing time through meaningful activities and interactions.

The highly proficient (HP) ratings in instructional effectiveness regarding classroom management skills highlight a conducive learning environment. Teacher's classroom management skill is in the nature of them because before they enter the field, they have the learnings and skills on how to manage the classroom in order to engage the learners and improve their learnings. Through, quarterly classroom observation (CO) teachers always reminded to managed classroom structure to engage learners, individually or in groups, in meaningful exploration, discovery and hands-on activities within a range of physical learning environments. Also, teacher promotes positive discipline in class at all times, this is included in the homeroom guidance topic of the learners that integrated in the ESP subject. Also, DepEd organized DepEd Learning Management System (LMS) that enables materials, resources and tools that allow the students to accessed at any time. They can use this whenever they need resources to expand and improve their learnings.

While elementary public-school teachers demonstrate highly proficient in structuring lessons and managing time effectively, further strategies to optimize student engagement and streamline digital learning platforms are necessary. These findings underscore the ongoing need for tailored professional development to bolster classroom management skills and ensure optimal instructional effectiveness.

The findings suggest that teachers demonstrate strong capabilities in managing the classroom environment, which is vital for facilitating successful teaching and learning experiences. These high levels of instructional effectiveness imply that students are likely to experience well-structured and engaging learning environments (M.D.C et al., 2019), leading to enhanced academic outcomes and overall satisfaction with the learning process [39]. Moreover, it underscores the importance of investing in training and support for instructors to continuously enhance their classroom management skills and promote positive learning experiences.

Table 18. Relationship Between Digital Competence and Classroom Engagement

Digital Competences	**Classroom Engagement**		
	Cognitive Engagement	**Emotional Engagement**	**Social Engagement**
Professional	0.120	0.169	0.117
Digital Resources	0.543**	0.501**	0.531**
Teaching and Learning	0.494**	0.568**	0.613**
Assessment	0.577**	0.533**	0.602**
Empowering Learners	0.523**	0.457**	0.542**
Facilitating Learners' Digital Competence	0.545**	0.466**	0.565**

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

As presented in Table 18, it shows that digital competences of the teacher are related to classroom engagement. This implies that when the teacher uses digital resources, they provide varied experiences to the students in teaching and learning to promote engagement inside the classroom. When the teachers are digitally competent in the use of digital tools in assessment, these make the teachers work much easier so, teachers give timely feedback in the assessment. In terms of professional, this is not directly related to classroom engagement because the professional ability aside from teaching and school work, teacher may also apply it on their other working experiences not only in teaching. They can also use their ability in submitting papers, communicating and meeting with their principals, supervisors and also colleagues.

Teachers are experts in doing lesson plans that are aligned with the curriculum goals and standard, encouraging students' curiosity, adjusting strategies in order to informed about educational trends, assess students' progress, providing constructive feedback to guide students' cognitive development. Teachers are resourceful and they used their abilities from different trainings in terms of engaging themselves in their work.

This finding fits with other research that has focused on how digital competence affects education in many ways. Some researchers, like [32], say that teachers need to be well-versed in ICT in order for integration to work well. Other researchers say that connections between teachers and students are important for involvement [2]. For all-around professional development to address the many aspects of digital literacy [19]. Agree and stress the importance of developing both technical and soft skills. [17]

Also, these findings underscore the importance of Digital Competences in promoting Classroom Engagement. Teachers equipped with strong Digital Competences are better positioned to foster cognitive, emotional, and social engagement among students [13]. Additionally, as education increasingly integrates technology, teachers must continually refine their digital skills to maximize student engagement and learning outcomes [58]. By recognizing and addressing the relationship between Digital Competences and Classroom Engagement, educational institutions can prioritize professional development initiatives that empower educators to leverage digital tools effectively, ultimately enriching the educational experience for students.

Table 19. Relationship Between Digital Competence and Instructional Effectiveness

Digital Competences	Instructional Effectiveness				
	Instructional Planning Skills	Instructional Skills	Knowledge of the Subject area	Rapport with the Students	Classroom Management
Professional	0.128	0.091	0.121	0.125	0.134
Digital Resources	0.563**	0.542**	0.503**	0.535**	0.525**
Teaching and Learning	0.613**	0.531**	0.540**	0.564**	0.539**
Assessment	0.624**	0.575**	0.564**	0.541**	0.589**
Empowering Learners	0.607**	0.573**	0.505**	0.564**	0.538**
Facilitating Learners' Digital Competence	0.630**	0.554**	0.517**	0.545**	0.531**

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

Table 19 shows the correlation coefficients between digital competences are significantly related to instructional effectiveness. However, among the digital competences, professional is not directly correlated.

It means that teachers are digitally competent in planning, designing and implementing of instructional activities. Teachers are incorporating and integrating digital technologies into their instruction so that, teachers do not require to make instructional resources because they are assisted enough. Teachers are employing digital learning environment to promote motivation and engagement of the learners so that, effective instruction may occur and also this builds rapport with the students. Teachers are digitally competent in digital technology pedagogical strategies in assessment in which when doing an assessment much easier and faster. In terms of professional, teachers' digital competences can use in different aspects of life. This can also help in raising their children, niece and nephew by guiding them growing. Also, this can help on applying work out of teaching, they have understanding of digital technologies and it is advantage to a person. Even if teachers are digitally competent, they may also face challenges in accessing appropriate technology resources to implement them effectively. Professional is not directly correlated because even though teachers do not have much ability in utilizing technology to provide learning resources for learners and parent, communication and collaboration with the other colleagues to receive feedback and insights and having many high calibrated trainings, they can effectively teach their students.

Existing studies stress the necessity of comprehensive professional development programs to address various dimensions of digital competence and advocate for a nuanced approach to teacher training, encompassing both technical and soft skills [2] [32] [19] [17]. Thus, the result suggests that while administrative and technical competences are crucial, they may not directly influence instructional effectiveness to the same extent as other dimensions of digital competence. This suggests that teachers equipped with robust digital competences are more likely to excel in instructional planning, delivery, subject matter expertise, rapport-building with students, and classroom management (Starkey et al., 2022). Therefore, investing in digital skills development for educators can play a crucial role in enhancing instructional effectiveness (Ben Youssef et al., 2022) and ultimately improving student learning outcomes.

Table 20. Relationship Between Contextual Knowledge and Classroom Engagement

Contextual Knowledge	Classroom Engagement		
	Cognitive Engagement	Emotional Engagement	Social Engagement
Behavior Beliefs such as Attitude	0.687**	0.597**	0.654**
Normative Beliefs such as Subjective Norms	0.669**	0.625**	0.690**
Control Beliefs such as Perceived Behavioral control	0.639**	0.611**	0.663**

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

Table 20 presents that contextual knowledge is significantly related to classroom engagement. It implies that teachers believed in having awareness of technology integration is important in their classroom engagement. Teachers believed that contextual knowledge allows them to understand diverse background, experiences and cultures of their students to create inclusive learning environment. Also, having contextual knowledge, teachers build good relationship with their students by demonstrating an understanding about student's background, interest and experiences where they can establish trust, connection, mutual respect where students feel valued and engaged.

The importance of teacher readiness and professional growth for enhancing educational quality [32]. They highlight that effective technology integration, guided by teachers' competence and beliefs, can boost classroom engagement and learning outcomes. Additionally, emphasize how teacher performance and professionalism are pivotal in fostering meaningful teacher-student connections and driving classroom engagement [2]. They note that teachers' beliefs and attitudes, integral parts of their contextual knowledge, significantly influence classroom dynamics and student engagement.

These insights here reinforce the need to consider teachers' beliefs alongside technical skills in educational programs [17]. advocate for a comprehensive approach to teacher development, emphasizing the importance of both technical proficiency and soft skills like collaboration. This holistic approach fosters supportive learning environments, enhancing student engagement and achievement.

Thus, these findings suggest a strong positive relationship between Contextual Knowledge and Classroom Engagement across various dimensions. Teachers with a deeper understanding of behavior beliefs such as attitude, normative beliefs such as subjective norms, and control beliefs such us perceived behavioral control are more likely to foster engaged classroom environments that promote active participation and interaction among students [65].

Table 21. Relationship Between Contextual Knowledge and Instructional Effectiveness

Contextual Knowledge	**Instructional Effectiveness**				
	Instructional Planning Skills	**Instructional Skills**	**Knowledge of the Subject area**	**Rapport with the Students**	**Classroom Management**
Behavior Beliefs such as Attitude	0.605**	0.582**	0.562**	0.562**	0.540**
Normative Beliefs such as Subjective Norms	0.661**	0.651**	0.649**	0.628**	0.577**
Control Beliefs such as Perceived Behavioral control	0.613**	0.578**	0.617**	0.558**	0.536**

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

Table 21 indicates that contextual knowledge significantly related to instructional effectiveness. Teachers believed that having contextual knowledge in integrating technology can create comprehensive and organized plan and skills in order to be effective in their instruction. Also, it can create opportunities in every student a maximum participation and integration of the content to enhance learning experiences. Respondents demonstrate contextual awareness have the ability to adapt their instructional approaches in accordance with students' individual experiences, effectively tackle

possible barriers to student involvement, and cultivate a supportive and inclusive classroom atmosphere that promotes a sense of worth and empowerment for all students. Additional to this, teachers aware and have knowledge on how to creates belongingness and valued students. They create learning experiences to meet student's needs, foster engagement and meaningful learning outcomes.

In addition, educators who possess contextual knowledge have the ability to establish educational settings that are supportive and inclusive, so promoting collaboration, analytical reasoning, and reciprocal regard among students [25]. The aforementioned methodology, which is grounded on cultural responsiveness and active student engagement, fosters inclusivity within the educational setting, valuing and embracing diversity as a valuable asset (Kieran et al., 2019).

Teacher contextual knowledge leads students to express what's on their mind. With this, Kubanyiova (2020) suggests that students are encouraged to embrace ambiguity and actively participate in their educational journey. As a result, this increased feeling of control and engagement boosts student drive, self-assurance, and academic achievement.

Conclusion

Digital Competences, Contextual Knowledge, Classroom Engagement, and Instructional Effectiveness are examined in this study. The study examined the digital abilities, contextual awareness, classroom interaction, training efficacy, and their linkages. The insights will be used to create an Educational Instructional Plan for Public Elementary Schools.

The study's demographic analysis showed that Claro M. Recto Memorial Central School had the most respondents, followed by Ayusan Elementary School and Tiaong East Elementary School. The majority of participants were 31–40, married, female, and had a Master's degree. Teacher III was the most frequent title, with 6–10 years of experience. Most respondents scored "Very Satisfactory" on the IPCRF. Understanding these demographics may reveal links between digital skills, contextual knowledge, classroom participation, and instructional efficacy.

Moreover, showcase teachers with great digital skills in several educational areas. The persons are proficient in using digital technology for communication, cooperation, resource management, educational activities, assessment methodologies, learner empowerment, and digital competency enhancement. Our findings show that instructors' digital skills boost classroom engagement and efficiency.

The studies also thoroughly examined instructors' contextual knowledge of technology in the classroom. Positive attitudes, stakeholder expectations, and recognition of variables affecting technology integration were found. Contextual knowledge is crucial to classroom engagement and education.

Teachers are active in the classroom in cognitive, emotional, and social ways, according to the research. Regarding cognitive engagement, teachers are committed to different instructional methods that promote critical thinking, vary teaching methods, and align lessons with curriculum objectives. Teachers' empathy, optimism, and genuine concern for their students foster good teacher-student relationships and a helpful classroom atmosphere. By facilitating group activities, encouraging cooperation, and building community, teachers can create inclusive and participatory learning environments. These studies underscore classroom engagement's complexity and diversity, emphasizing its importance in boosting instructional efficacy and student learning outcomes.

The teacher-respondents perceived themselves as digitally competent as to digital resources, teaching and learning, assessment, empowering learners and facilitating learners' digital competence except professional which is highly competent. The teacher described themselves as highly practicing behavioral beliefs, practicing normative beliefs and control beliefs as to their contextual knowledge. The classroom engagement is highly observed in terms of cognitive, emotional and social engagement. The instructional effectiveness is highly practiced as to instructional planning skills, instructional skills, knowledge of the subject area, rapport with the students and classroom management skills. There is significant relationship between digital competences of teachers and their perception in classroom engagement and instructional effectiveness except for digital competence as to professional. The perceived contextual knowledge is significantly related to classroom engagement and instructional effectiveness.

Since the study reveal that there is significant relationship between teachers' digital competences, contextual knowledge, classroom engagement and instructional effectiveness therefore the null hypothesis is partially support.

Since the study revealed that teachers are competent but not highly competent in terms of their digital competences it is may then consider to continuous providing training and programs to further improve their skills in utilizing digital technologies into their instruction. Since contextual knowledge is observed to be practiced by the teachers, the Division Management Office of the schools may consider to provide opportunities related to integrating technology in their instruction. Since the classroom management is highly observed, the organization may be considered to continuously providing trainings and opportunities, provide additional digital resources and materials for classroom engagement. Since the instructional effectiveness is highly practice, educational institutions may consider to provide support and resources for teachers to enhance their instructional planning skills, instructional skills, subject area knowledge, rapport with students, and classroom management skills.

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