INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND ANALYSIS

ISSN(print): 2643-9840, ISSN(online): 2643-9875

Volume 08 Issue 05 May 2025

DOI: 10.47191/ijmra/v8-i05-11, Impact Factor: 8.266

Page No. 2352-2365

# Information Communication Technology Proficiency and Quality Teaching among Teachers in Laguindingan District

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**ABSTRACT:** As technology advances, it becomes important in every area of our lives including education. Effective integration of Information and Communication Technology (ICT) in teaching and learning is significant. This study shows the ICT proficiency and quality of teaching among 200 elementary and secondary school teachers in Misamis Oriental during the 2023-2024 school year. The research aimed to describe teacher characteristics, assess their ICT proficiency and teaching quality, determine the relationship between ICT proficiency and teaching quality, and analyze differences in ICT proficiency based on teacher characteristics. The independent variables (ICT proficiency) were adapted from Domelita and Benavides's (2023) study on school heads' ICT proficiency using a researcher-created questionnaire. Dependent variables (teaching quality) were adapted from the classroom-Practice-Guide-3rd-edition-2020, also using a researcher-created questionnaire. Employing a descriptive correlational method with stratified sampling, the study analyzed data using descriptive statistics (percentage, frequency, mean, standard deviation) and Pearson Product Moment Correlation (r) to explore the relationship between ICT proficiency and teaching quality. The study found that most respondents were Teacher II with 6–10 years of experience, holding bachelor's degrees, and exhibiting a very positive attitude towards ICT. They demonstrated very high ICT proficiency, particularly with productivity tools, and high teaching quality, especially in intellectual aspects. ICT competency significantly impacted teaching quality beyond basic computer skills, although correlations differed based on teacher characteristics. The study concluded that ICT skills are crucial for improving public school teaching, advocating for comprehensive teacher training, and individualized professional development. School heads should provide ongoing support and resources to ensure the effective use of online learning platforms.

**KEYWORDS:** information communication technology, proficiency, quality of teaching

## I. INTRODUCTION

The increasing use of Information and Communication Technology (ICT) in education has made tremendous strides, even in the present curriculum implementation. Technology is becoming a necessary component of every aspect of our lives, including education, as it develops further. The potential for improving teaching and learning experiences in the classroom through the appropriate integration of ICT is considerable. As observed, some teachers forget to apply technology when it is essential to comprehend how ICT affects teachers' job happiness to guarantee that it is successfully implemented and used by public school teachers in the Laguindingan District.

High-quality education is contingent upon the growth of information technology in various contexts, including increasing student enthusiasm, improving foundational abilities, and expanding technology-related training for educators. When utilized appropriately, technology for information and communication acts as a tool for curriculum and subject reform, establishing a learner-centered atmosphere.

The perceived usefulness of technology relates to the conviction among users such as teachers that it will make their work or that of their learners easier, thus enhancing job performance (Muinde & Mbataru, 2019). Teachers' perceptions of insufficient ICT resources in schools, according to Murithi (2021), made it difficult to integrate technology when the new curriculum was being implemented. Most educators who responded said they had only gotten rudimentary computer literacy instruction. Despite feeling that using computers in the classroom was essential, educators had trouble incorporating technology into their teaching.

Information and Communication Technology proficiency among teachers has become essential to quality teaching and learning environments. The integration of ICT in education can greatly enhance the teaching and learning process, making it more

interactive, engaging, and efficient. ICT proficiency refers to a teacher's ability to appropriately use digital technology, communication tools, and/or networks to access, manage, integrate, evaluate, and create information to function in a knowledge society. This includes a minimum level of skills necessary to use a range of digital devices, applications, and digital sources of information.

Further, the relationship between ICT proficiency and quality teaching is significant. Teachers proficient in ICT can incorporate these tools into their teaching methodologies, enhancing their effectiveness and improving student learning outcomes. They can use digital resources to supplement traditional teaching methods, create interactive lessons, provide immediate feedback, and facilitate collaborative learning. However, it is important to note that ICT proficiency alone doesn't guarantee quality teaching. Teachers must also deeply understand their subject matter, have pedagogical knowledge, and have the ability to create an inclusive, supportive, and stimulating learning environment.

According to Arseven (2019), while there were very few options for information sharing, accessing, conserving, or transferring. These tasks were considerably more difficult until roughly a century ago, but because of technical advances. Books were the most often used medium for recording information until recently shared, but now it is simple to access electronic books online. Although educational endeavors were only conducted in classrooms and schools up until recently, now that web-based distance education systems are in place, there is no space restriction when it comes to working on educational activities at home. Academicians now have access to a research paper written by a different college professor, read it, and conduct a scientific conversation with the author from the opposite side of the world.

The learners in the Laguindingan District's public schools come from diverse backgrounds and actively engage in various academic and extracurricular activities. The district recognizes the importance of integrating Information and Communication Technology into its education system to enhance teaching and learning experiences. The study on the impact of ICT Proficiency and Quality Teaching of public-school teachers in Laguindingan District explores how technology influences teachers' overall positive impact in their profession.

As stipulated by Tire et al. (2019), the more positive and supportive attitude toward ICT use in everyday teaching could be explained, on the one hand, by the fact that teachers perceive the public's expectations that education and teachers use and integrate ICT into their everyday teaching, regardless of the study subject.

This is somewhat echoed by teachers who feel that ICT is being pushed on them. The inconsistency between attitudes, roles, and practices could also be explained, considering that teachers tend to have students do their homework with ICT rather than using devices in the classroom, thus putting the onus on the household to teach them the necessary ICT skills and competencies.

Overall, Laguindingan District's public schools, teachers, and students contribute to a vibrant educational community that values excellence and inclusivity to explore and widen its capability to deliver good and essential knowledge that every learner should have.

## II. METHODOLOGY

This study employed a descriptive survey method to investigate the relationship between teachers' Information and Communication Technology competency and Quality Teaching. This research design was chosen for its utility in achieving the study's objectives, specifically in determining the association between ICT Competency and quality teaching among the teachers in Laguindingan District.

A questionnaire is used to collect data since it provides a quantitative approach that produces facts, information, and numerical proof. One benefit of using a questionnaire is that it can effectively reach a large number of people, making the researcher's task of gathering data easier.

By utilizing these tools and methods, the study aims to gain a comprehensive understanding of the relationships between ICT skills and teachers' quality of teaching within the chosen educational institutions in the Laguidingan District. This research design allows for a systematic and structured exploration of these crucial aspects, potentially shedding light on their interplay.

The collected data underwent a comprehensive process, including data collection, tabulation, and analysis, utilizing the following statistical treatments:

For Problems 1, 2, and 3, the researcher employed descriptive statistical techniques such as percentage, frequency, mean, and standard deviations to describe the variable in the study.

Regression analysis was utilized to determine the significant effect of the respondents' ICT proficiency when grouped according to their characteristics. For Problem 5, the T-test and F-test were used to test the significant difference in the respondents' ICT proficiency when grouped according to their characteristics.

## III. RESULTS AND DISCUSSION

**Problem 1.** What are the characteristics of the respondents in terms of highest educational attainment, teaching experience, position, and attitude toward Information Communication Technology (ICT)?

Table 1 shows the respondents' frequency and percentage distribution regarding the highest educational attainment, with the highest frequency of 116 (58%) belonging to Bachelor's Degree. This means bachelor's degrees are the most prevalent educational level among the studied population, with a sizable portion holding one. This further means that a high percentage highlights the bachelor's degree as a fundamental qualification for the respondents. This implies that a bachelor's degree is widely considered a foundational qualification for entering the teaching profession. This implies further that pursuing a Bachelor's degree is a common pathway for aspiring teachers, reflecting the importance of a solid educational foundation in this profession. It is perceived that most of the respondents have finished their undergraduate degrees, underscoring the significance of a bachelor's degree in their educational history. This implies that earning a bachelor's degree is a valued accomplishment for the respondents and reveals that finishing an undergraduate degree is a shared accomplishment among them. The importance of this level of education within the group is highlighted by the fact that a sizable portion of respondents had bachelor's degrees. This suggests a considerable interest in pursuing advanced education beyond the bachelor's degree, although completion rates for these programs remain relatively lower.

**Table 1: Distribution of the Respondents' Highest Educational Attainment**

| Category | Frequency | Percentage |
|---|---|---|
| Doctorate Degree | 8 | 4.0 |
| With Doctorate Degree Units | 2 | 1.0 |
| Master's Degree | 16 | 8.0 |
| With Master's Degree Units | 58 | 29.0 |
| Bachelor's Degree | 116 | 58.0 |
| **Total** | **200** | **100.00** |

According to Fuente and Biñas (2020), teachers have a modest level of proficiency with information and communications technology across a range of skill areas. Interestingly, instructors' ICT competency is not significantly impacted by age, gender, maximum educational achievement, or teaching position. Nonetheless, there was a noticeable influence in the quantity of ICT-related training sessions and seminars, focusing on security, computer ethics, spreadsheets, and the fundamentals. Consequently, scholars propose that it be integrated into teachers' In-Service Training (INSET), emphasizing intermediate skill sets. Using this strategy, instructors' ICT proficiency was improved and boosted by implementing NICS-Advance.

On the other hand, 2 (1%) of those with a doctorate obtained the lowest frequency. This means that the majority of respondents have a different highest educational attainment, such as a bachelor's or master's degree. This means further that among the people surveyed, having a doctorate or receiving doctorate-level education is not very frequent. This implies that obtaining a doctorate or completing doctorate-level education is not a common occurrence among the surveyed population. As observed, the respondents may not have decided to pursue a doctorate often, possibly due to time commitment, financial constraints, or professional preferences. The study suggests a possible movement toward alternate professional development paths. It emphasizes the necessity of investigating the causes of the low PhD percentage and probable disparities in educational paths among the examined population.

According to Anub (2020), teachers of Practical Research are technically proficient but have complaints about the resources and facilities available in the schools. Their research proficiency is unaffected by their profile. There is no discernible variation in satisfaction regarding specialization, years of employment, semesters completed, or seminars attended. However, educational attainment has a significant impact on contentment. The study concludes that educational achievement influences research competency related to satisfaction with facilities and resources.

**Table 2: Distribution of the Respondents' Teaching Experience**

| Category | Frequency | Percentage |
|---|---|---|
| 21 years and above | 49 | 24.5 |
| 16 to 20 years | 27 | 13.5 |
| 11 to 15 years | 44 | 22.0 |
| 6 to 10 years | 80 | 40.0 |
| **Total** | **200** | **100.00** |

Table 2 shows the respondents' frequency and percentage distribution regarding Teaching Experience. Results show that the Highest Frequency of 80 (40%) belongs to 6 to 10 years. This means that most respondents in this survey have been teaching for between 6 and 10 years. This implies that most respondents are relatively early in their careers but have already accumulated a solid foundation of expertise. This further implies that respondents' teaching experiences vary widely, with a sizable portion having six to 10 years under their belt. As noticed, most respondents are relatively early in their careers but have already built a strong foundation of expertise. The respondents' teaching experiences vary significantly, with a considerable number having six to 10 years of experience. Most responders appear to have built a solid foundation of expertise while in their early careers. With a significant portion having six to ten years of experience, it is evident that the respondents had a wide range of teaching experiences. This points to educators who accumulated significant knowledge and skills while young. Utilizing this variety of teaching experiences is essential to improving instructional strategies and fostering professional growth within the education sector.

As stated in the study by Birgin et al. (2019), instead of using ICT for teaching, Turkish math teachers primarily use it for social media and communication, which highlights their lack of expertise and experience with educational ICT applications. The perceived ICT proficiency of math teachers was not significantly impacted by gender, while notable disparities depended on professional experience, teaching level, and involvement in computer-assisted instruction training. Moreover, a favorable association was found between educators' assessments of their ICT competence and their use of smart boards and computer-assisted instruction. To address these findings, it was suggested that mathematics educators hold in-service training sessions emphasizing software utilization and ICT integration into their teaching techniques.

On the other hand, the lowest frequency of 27 (13.5%) has 16 to 20 years of teaching experience. This means that only a few teachers have 16 to 2 years of teaching experience. It further means that fewer teachers with a moderate level of teaching experience are compared to other categories. It may imply that most teachers in the sample group either have more extensive teaching experience beyond 16 years or are relatively new to the profession with less than 2 years of experience. Understanding this distribution can provide insights into the diversity of teaching experience levels within the population being studied and may influence the interpretation of the data related to this variable. This indicates that, compared to other groups, fewer educators have a reasonable amount of expertise. It can mean that most of the sample group's teachers are either very new to the field, have less than two years of experience, or have much experience—more than sixteen years. Comprehending this distribution can impact how data about this variable are interpreted and offer insights into the range of teaching experience levels within the population under investigation. In examining the connection between instructors' years of experience and their ability to teach, the study finds that while there is some indication of a reduction in quality for beginning teachers (0–3 years), there is no evidence for teachers with 4-5 years of experience. Personalized assistance and research-based professional development could raise the standard of instruction (Graham et al., 2020).

**Table 3: Distribution of the Respondents' Position**

| Category | Frequency | Percentage |
|---|---|---|
| Master Teacher II | 49 | 24.5 |
| Master Teacher I | 27 | 13.5 |
| Teacher III | 44 | 22.0 |
| Teacher II | 80 | 40.0 |
| Teacher I | 49 | 24.5 |
| **Total** | **200** | **100.00** |

Table 3 shows the respondents' frequency and percentage distribution regarding position. The table displays the Highest Frequency of 80 (40%) in the teacher II position. This means that Teacher II is the most common position among the respondents. This further means that this position suggests this role is prevalent among the surveyed group. This implies that the dataset consists of 200 respondents distributed across various teaching positions, revealing critical insights into the composition of the teaching staff. This further implies a substantial presence of mid-level teachers within the dataset, indicating a robust base of experienced teaching staff members. This conclusion has consequences for educational institutions' professional development plans and staffing arrangements. It is observed that the dataset comprises 200 respondents from various teaching roles, providing valuable insights into the makeup of the teaching staff. It further implies a significant presence of mid-level teachers in the dataset, suggesting a solid foundation of experienced teaching professionals. This finding has implications for educational institutions'

professional development strategies and staffing decisions. Acknowledging and assisting mid-level teachers in retaining a diverse and productive teaching workforce is crucial, as this distribution is evident.

Espinosa and Pañares (2023) reveals that most participants were female Millennials in the Teacher role, holding bachelor's degrees, having taught for one to ten years, and attending one to three ICT seminars. Teachers do exceptionally well in the NICS standards "Office and Teaching Productivity tool." Age, education, teaching position, and seminars attended are the only factors that significantly correlate with ICT proficiency; gender and duration of service do not. By NICS recommendations, educators are encouraged to incorporate ICT training within INSET and use mentorship to improve fundamental computer skills during LAC sessions.

In contrast, 27 (13.5%) were Master Teacher 1 obtained the Lowest Frequency. This means that in the sample group, there are fewer people with this teaching qualification. The response distribution indicates that most participants belong to different teacher ranks or classifications, with Master Teacher 1 being less common. Comprehending this distribution can show how various teacher positions and levels are distributed within the population under investigation, setting the stage for delving into the duties and obligations related to each category. It is seen that very few people have this particular teaching credential in the sample group. The distribution of responses indicates that most participants are probably in various teacher ranks or classifications, with Master Teacher 1 being less common. Comprehending this distribution provides insight into the distribution of various teacher positions and levels among the population under investigation, setting the stage for investigating the duties and obligations linked to each category. Learning needs are frequently unfulfilled for those seeking advancement outside of leadership positions and those with family responsibilities (Booth et al., 2021).

The study by Tarraya (2023) emphasizes how excessive workloads negatively affect public school teachers' effectiveness and efficiency, affecting the standard of instruction. This is directly related to what Master Teacher 1 is expected to do, as they are crucial in providing other teachers with guidance and support. In addition to mentoring their peers through subject and skill challenges, Master Teachers 1 are expected to provide echo seminars for their peers and support principals with teacher observation. However, Master Teacher 1 is more challenging to carry out these crucial responsibilities when overworked. As a result, a knock-on effect generally affects the school's professional growth and teaching standards.

**Problem 2.** How do the respondents assess their Information Communication Technology (ICT) proficiency based on basic computer operations, productivity tools, internet browsing, email management, and online platforms?

**Table 4: Summary of the Respondents' Level of Assessment of Information Communication Technology Proficiency**

| Variables | Mean | SD | Interpretation |
|---|---|---|---|
| Basin Computer Operations | 3.87 | 0.32 | Very High |
| Productivity Tools | 3.89 | 0.29 | Very High |
| Internet Browsing | 3.87 | 0.33 | Very High |
| Email Management | 3.84 | 0.35 | Very High |
| Online Learning Platforms | 3.71 | 0.44 | Very High |
| **Overall** | **3.84** | **0.35** | **Very High** |

***Legend***: *3.26-4.00 At All Times/Very High 1.76 – 2.50 Sometimes/ Low*
*2.51-3.25 Most of the Time/High 1.00-1.75 Never/Very Low*

Table 4 shows the summary of the respondents' level of information communication technology proficiency with an overall mean of 3.84 (SD=0.35), interpreted as Very High. This means that the respondents possess a strong level of proficiency in information communication technology. This means that there is a relatively small variation in ICT proficiency among the respondents, further supporting the conclusion that the overall proficiency level is very high. This implies possessing an advanced level of competency in utilizing information communication technology. This further implies that by leveraging ICT effectively, teachers can create dynamic learning environments, streamline administrative tasks, improve communication, and ultimately enhance the overall educational experience for both educators and students in the Laguindingan District. As observed, teachers consistently excel in utilizing ICT for classroom management tasks, showcasing a high degree of confidence and competence in integrating technology to enhance teaching practices. This high level of proficiency implies that teachers in the district are adept at leveraging ICT tools effectively to organize information, communicate with students, produce high-quality educational materials, and improve overall teaching and learning experiences, and are well prepared to use technology in their teaching techniques. This could materialize in a variety of ways, including leveraging online learning platforms to deliver courses, producing interactive presentations with multimedia elements, or utilizing instructional software to increase student participation. The

teacher could leverage their ICT skills to design a virtual field trip for their students, allowing them to explore a historical site or a natural environment remotely. They could also use online collaboration tools to facilitate group projects, enabling students to work together on assignments from different locations. This demonstrates how teachers can leverage their ICT proficiency to create engaging and effective learning experiences for their students.

Supporting the findings that teachers have a high level of proficiency in classroom management practices using ICT, recent studies highlight the importance of these skills in educational settings. The study conducted by Shah (2022) reveals that technology proficiency is essential for teachers to effectively integrate technology into classroom settings, enhancing communication, organization, and productivity while improving learning outcomes. Proficiency in using technological tools allows teachers to select and implement the most suitable resources to support teaching and learning. By incorporating technology into education, teachers can develop 21st-century skills in students, preparing them for a technology-driven world and fostering innovation and creativity in teaching practices. Additionally, technology proficiency streamlines teaching processes, leading to increased efficiency, more time for planning and creativity, and, ultimately, better educational experiences for both teachers and students.

Furthermore, the variable, productivity tools, obtained the highest mean score of 3.89 (SD=0.29), which is interpreted as Very High. This means that respondents are highly confident in using productivity tools for classroom management. This implies that the confidence in using productivity tools signifies a positive shift towards technology-driven classroom management. This implies further improved workflows, communication, and instructional delivery. This strong endorsement reflects teachers' recognition of the value of these tools in their daily work. As observed, teachers recognize the value of these tools in streamlining their workflow, improving communication, and ultimately enhancing the learning experience for their students. This trend highlights the growing importance of digital literacy and the integration of technology in modern education. Teachers had great confidence in adopting productivity technologies for classroom management, with little difference in proficiency.

This finding aligns with several studies emphasizing the importance of proficiency in using productivity tools in classroom management. For example, Boryga (2024) found that teachers who are proficient in using productivity tools are more likely to handle administrative tasks and communicate with students efficiently. Teachers spend roughly 11 hours daily on non-school activities such as lesson planning, administrative work, emailing, and assessing student performance. With AI breakthroughs, time-saving tools for these activities are critical. Educators have identified several tools to boost efficiency that aid in lesson planning, assessment creation, administrative job management, and improved communication with students and families. This list focuses on resources that educators may not be familiar with and offers suggestions for how they might save time and effort.

Similarly, the work of Fabriz et al. (2021) supports the idea that proficiency in this area is foundational for maintaining smooth operation and communication in classroom settings. The pandemic has led to various online teaching and learning settings, with some courses offering both synchronous and asynchronous methods. Students in synchronous settings report more peer-centered activities and satisfaction with online learning, while teachers perceive fewer differences. Students in synchronous settings support their psychological needs and have higher technology acceptance, resulting in more favorable outcomes. This highlights the need for improved online teaching and learning environments post-pandemic.

Further, it shows that the higher the productivity tools, the lower the online learning platforms on the teacher's level of assessment of information communication technology proficiency. Access to more productivity tools may help teachers feel more competent and confident in their ICT capabilities. This may cause them to view online learning platforms as less necessary for improving their ICT abilities. As noted, productivity tools frequently have more simplified and intuitive user interfaces, which makes them simpler to use and learn. This simplicity of use could make teachers feel more assured of their skills, even if they do not fully comprehend the underlying technology. The United Nations' Sustainable Development, in the 2030 agenda, emphasizes quality education, with digital technologies playing a crucial role in detecting emissions, preventing damage, and reducing greenhouse gas emissions. The pandemic has further institutionalized digital technologies in education, making them knowledge providers, co-creators, mentors, and assessors. Students now use software and tools for presentations and projects, and E-books increase research interest. This paper discusses the importance of digital technologies in education and their applications and challenges (Haleem et al., 2022).

On the contrary, the variable online learning platforms obtained the lowest mean of 3.71 (SD=0.44), interpreted as Very High. This means that teachers and students highly value the benefits of online learning platforms. This means that there is generally a positive and consistent experience with these platforms, with minimal variation in opinions. This implies that respondents generally feel proficient in using online learning platforms. As observed, there is slightly more variability and a somewhat lower level of solid agreement than other indicators. These platforms offer a dynamic and interactive learning experience that goes beyond traditional classroom settings, enabling students to collaborate, communicate, and learn from each other in a virtual environment. Moreover, online platforms facilitate seamless progress tracking for teachers and students,

allowing for personalized feedback and tailored support to enhance the learning journey. Respondents generally feel comfortable using online learning platforms. However, there is some variation in perceptions of their abilities, implying varied levels of experience or expertise. This emphasizes the importance of targeted treatments to reduce inequities and increase proficiency. Training programs and support efforts tailored to address students' different needs can result in more effective virtual learning experiences (Llego, 2021).

**Problem 3.** What is the respondents' level of quality teaching in terms of intellectual and learning environments?

Table 5 summarizes the level of the teacher's quality of teaching with an overall mean of 3.86 (SD=0.34) and interpreted as Very High. This means that teachers consistently implement effective quality teaching. This further shows that this set of teachers has excellent levels of teaching quality. This is apparent in their regular use of good teaching approaches, which creates a favorable learning environment for students. However, the moderate variety in replies suggests that while most teachers are skilled, there are variations in how they implement these methods. As observed, teachers consistently implement effective quality teaching. This also reveals moderate heterogeneity in replies, implying that while most teachers regularly use these strategies, there are disparities in the extent to which individual teachers do. Schools can assist teachers in developing their techniques, resulting in a more productive learning environment. Recognizing and honoring teachers' dedication is critical for professional development and advancement. Supporting the findings from 2019 to 2023, various studies have highlighted the importance of effective quality teaching.

**Table 5: Summary of the Respondents' Level of Quality Teaching**

| Variables | Mean | SD | Interpretation |
|---|---|---|---|
| Intellectual | 3.88 | 0.31 | Very High |
| Learning Environment | 3.83 | 0.36 | Very High |
| **Overall** | **3.86** | **0.34** | **Very High** |

*Legend: 3.26-4.00 At All Times /Very High* *1.76 – 2.50 Sometimes/ Low*
*2.51-3.25 Most of the Time /High* *1.00-1.75 Never/ Very Low*

Teaching quality in five high-achieving countries is based on a comprehensive knowledge base, focusing on content, pedagogy, and learners to meet diverse social, emotional, and academic needs. This quality is rooted in ongoing teacher research and inquiry, ensuring a comprehensive approach to professional practice (Debalos & Oco, 2025).

According to the study by Popal et al (2024), the educational process is based on active interactions between the teacher, the student, and the learning environment. However, it is the teacher who influences both parties and is professionally exposed to a variety of obstacles, including increased workload. Because of the evolution of teaching-learning and education in general, this educational challenge has become a primary focus of educational scholars since the latter half of the twentieth century. This paper was approached utilizing Apple's original thesis of workload intensification as well as Ballet and Kelchtermans' three improvements: there are various sources of intensification, the intensification impact is mediated, and the intensification impact is differentiated. The study aims to better understand the nature of intensification and its underlying impact on a teacher's teaching quality.

Another study used an online poll of 417 Indonesian teachers to investigate how they altered teaching and learning strategies during the pandemic outbreak. The findings demonstrated improved management, efficiency, and quality, implying increased teaching efficacy. Method compatibility, participant training, material quality, and efficacy were all important factors in improving the effectiveness of teaching methods during this difficult time (Tondeur et al., 2023).

Moreover, the variable intellectual obtained the highest mean of 3.88 (SD=0.31) interpreted as Very High. This indicates that teachers frequently engage in intellectual activities and incorporate intellectual elements into quality teaching. This further suggests that this practice is consistently applied among the respondents, indicating a shared emphasis on intellectual engagement in quality teaching. It is seen that teachers frequently engage in intellectual activities and incorporate intellectual elements into their quality teaching. The consistent application of this practice among the respondents highlights a shared emphasis on intellectual engagement in quality teaching, fostering a dynamic and intellectually stimulating learning environment for students. It implies that teachers actively engage in intellectual activities and incorporate them into their quality teaching procedures, creating a stimulating learning environment. This technique improves educational quality, sparks curiosity, and develops a culture of lifelong learning and intellectual progress. Encouraging teachers to incorporate intellectual components into

their teaching approaches improves academic achievements and fosters students' enthusiasm for learning and intellectual curiosity.

Teachers with high levels of intelligence can find it difficult to explain their expertise to the students, which could result in fewer successful learning results. As observed, the learning requirements of students may not align with the teaching approach of highly intelligent teachers. Lack of access to technology and adequate training caused the difference in teachers' digital skills. Highly intelligent teachers could use abstract ideas and sophisticated thinking, which could be difficult for students needing more specific examples, practical exercises, and specialized training. This misalignment may result in the teacher's intellectual prowess not translating into worthwhile educational opportunities for the students. This study investigated students' academic engagement, motivation levels, and the connection between academic engagement and motivation. The findings indicated a strong relationship between academic engagement and motivation and high levels of both internal and extrinsic drive. According to the study, learning facilitators should provide ongoing direction and inspiration to help students stay motivated and succeed academically (Idulsa et al., 2024).

However, the variable, learning environment obtained the lowest mean of 3.83 (SD=0.36) interpreted as Very High. Teachers may face more challenges maintaining a high-quality learning environment than engaging in intellectual activities. This further means a moderate variability in responses, meaning some teachers might experience more difficulties in this area than others. This implies that teachers encounter more obstacles in sustaining a high-quality learning environment than intellectual activities, underlining the importance of targeted support and resources. However, it manifested the ability to measure the learner's learning environment. As noticed, sustaining a high-quality learning environment presents more problems for teachers than engaging in intellectual pursuits. The moderate diversity in replies indicates that some teachers may have more difficulty with this component than others. This conclusion emphasizes the necessity of establishing a suitable and supportive environment for student success and engagement. Investing in resources, professional development, and methods can enhance the overall learning environment, boosting student growth, engagement, and academic success.

To elaborate on these findings, another study found that teachers who face challenges maintaining a high-quality learning environment often benefit from additional support and resources. Self-regulated learning is a prominent method in second language teaching, with metacognitive strategies being the most well-researched. The three most common kinds of teacher support are in-class instruction, guidance in authentic contexts, and instruction-plus guidance. These tactics are helpful in both academic and affective dimensions, assisting students in identifying errors, decreasing procrastination, and increasing control. Teachers should provide detailed training, track progress, and provide technology support to help students learn independently (Zhang & Zou, 2022).

**Problem 4.** Is there a significant effect on respondents' ICT proficiency and quality teaching?

Table 6 explores the significant effect of respondents' ICT proficiency on quality teaching, particularly focusing on intellectual quality, quality learning environment, and overall quality teaching. The statistical significance of these effects is measured using T-values and P-values. Overall, the respondents' ICT proficiency and quality teaching of productivity tools, internet browsing, email management, and online platforms showed a significant effect, as indicated by the t-value and p-value less than 0.05 alpha level, which led to the rejection of the null hypothesis. This means that teachers with higher ICT proficiency tend to create intellectually stimulating learning environments that promote critical thinking, creativity, and engagement among students. By effectively utilizing digital tools and online resources, teachers can enhance the intellectual quality of their lessons, encouraging deeper understanding and knowledge retention. Additionally, a technologically adept teacher can establish a dynamic and interactive learning atmosphere that fosters collaboration, communication, and active participation, ultimately enriching the overall quality of teaching. Furthermore, integrating ICT skills into teaching practices not only benefits educators but also empowers students by providing them with innovative learning experiences. Teachers who leverage ICT proficiency in their instructional strategies can tailor lessons to cater to diverse learning styles, adapt to the digital preferences of contemporary learners, and facilitate a more personalized and effective educational journey. By embracing technology in education, teachers can create a more inclusive and engaging learning environment that meets the evolving needs and expectations of 21st-century students.

**Table 6: Regression Analysis on the Significant Effect of the Respondents' ICT Proficiency in Quality Teaching**

| ICT proficiency | Quality Teaching | | | Overall |
|---|---|---|---|---|
| | Intellectual | Quality | Learning | *T-value* |
| | *T-value* | Environment | | *P-value* |
| | *P-value* | *T-value* | | |

| | | *P-value* | |
|---|---|---|---|
| Basic Computer Operations | 1.23 | 1.01 | 1.11 |
| | .081 | .091 | .086 |
| | NS | NS | NS |
| Productivity Tools | 2.71 | 2.92 | 2.88 |
| | .000* | .000* | .000* |
| | S | S | S |
| Internet Browsing | 3.75 | 3.79 | 3.77 |
| | .000* | .000* | .000* |
| | S | S | S |
| Email Management | 2.92 | 2.91 | 2.91 |
| | .000* | .000* | .000* |
| | S | S | S |
| Online Learning Platforms | 3.56 | 3.79 | 3.65 |
| | .000* | .000* | .000* |
| | S | S | S |

*Legend: *Significant at p<0.05 alpha level S – Significant NS – Not Significant*

The teachers' ICT proficiency and quality teaching of productivity tools, internet browsing, email management, and online platforms significantly affected quality teaching in terms of intellectual and quality teaching except the basic computer operations. This implies that although basic computer operations use is crucial, the ability of teachers to use online resources, productivity tools, email management, and internet browsing has a greater influence on the caliber of their instruction. Beyond conventional approaches, these abilities enable educators to design dynamic and captivating learning experiences that promote intellectual growth and raise the standard of education. As observed, teachers adept at utilizing these technologies can effectively integrate them into their lessons, creating interactive activities, accessing a wealth of online resources, and facilitating communication and collaboration among students. This, in turn, leads to more stimulating and effective learning experiences, as students are exposed to a broader range of learning opportunities and are better prepared for the digital world they will encounter beyond the classroom. Digital technologies have significantly impacted education, leading to the adoption of ICT integration strategies. However, teaching and learning quality issues persist, particularly during the pandemic. Many schools lack experience and have low digital capacity, leading to learning gaps and inequalities. This has prompted a need for schools to enhance their digital capacity and prepare for successful digital transformation. A literature review reveals that ICT integration affects students' performance, school-related aspects, and stakeholders. Factors interconnected with digital transformation play a vital role in achieving effective and efficient change (Timotheou et al., 2022).

Moreover, integrating Information, Communication, and Technology is crucial for global development, with Malaysia's Ministry of Education integrating technology into the national curriculum. A study analyzing 101 teachers from 10 public secondary schools in Kuala Lumpur found that ICT integration is effective for both teachers and students. Teachers' preparedness with ICT tools and facilities is key to success, and professional development training programs enhance students' learning. Future studies should consider strategic planning and policymaking aspects of ICT integration (Shah, 2022).

Proficiency in ICT, particularly in productivity tools, significantly affected all dimensions of quality teaching. This means there is a significant positive correlation between ICT competency and academic quality and between learning environment quality and overall teaching quality. This further means that educational institutions should provide continuous professional development opportunities for teachers to keep their ICT skills updated and relevant to the evolving educational technologies. This implies that integrating ICT proficiency into the curriculum is essential for preparing future teachers to utilize technology in their teaching practices effectively. Continual professional development opportunities are crucial for keeping teachers' ICT skills current and aligned with the ever-changing landscape of educational technologies. This approach ensures that educators are equipped to leverage technology in innovative ways, enhancing the learning experience for students. By observing the impact of integrating ICT into teaching practices, educational institutions can witness firsthand how technology can improve engagement, collaboration, and student achievement.

Several studies support these observations. For example, Gibson's (2020) study reveals that teachers proficient in productivity tools are better equipped to create engaging lesson plans and manage administrative tasks, resulting in improved teaching practices and student learning outcomes.

Furthermore, the study conducted by Jeon et al. (2022) highlighted that productivity tools play a crucial role in helping teachers organize their classrooms and establish a structured learning environment. By utilizing productivity tools, teachers can effectively manage various aspects of classroom organization, such as lesson planning, resource allocation, student assessment tracking, and communication with students and parents. These tools enable educators to maintain a systematic approach to classroom management, ensuring that learning materials are easily accessible, lessons are well-structured, and administrative tasks are efficiently handled. As a result, using productivity tools contributes to creating an organized and conducive learning environment that promotes student engagement, fosters academic success, and enhances the overall teaching and learning experience within the classroom setting.

In line with this, internet browsing significantly affected all dimensions of quality teaching. This means that the study shows a strong positive correlation between intellectual quality, a high-quality learning environment, and overall high-quality teaching. This further means that policymakers should recognize the importance of ICT proficiency in quality teaching and allocate resources to support ICT training for teachers. By investing in ICT infrastructure and providing access to necessary tools and platforms, schools can create an environment that supports the effective use of technology in teaching. This implies that policymakers need to acknowledge the significance of ICT proficiency in quality teaching and allocate resources to support ICT training for teachers. By investing in ICT infrastructure and ensuring access to necessary tools and platforms, schools can establish an environment that facilitates the effective integration of technology in teaching practices. This support enables educators to enhance their instructional methods, engage students more effectively, and prepare them for the digital world they will encounter beyond the classroom. Policymakers play a crucial role in fostering a culture of innovation and technology integration in education, ultimately benefiting teachers and students in the learning process. Research has shown that internet browsing skills are crucial for modern teaching practices.

The research conducted by Appiah-Okyere (2024) demonstrated that teachers proficient in internet browsing can access a vast array of online resources and integrate them into their teaching practices. By effectively navigating the internet, educators can discover a wealth of educational materials, such as academic articles, multimedia content, interactive simulations, and educational websites, that can enrich their lesson plans and classroom instruction. This access to diverse online resources enables teachers to incorporate up-to-date information and varied perspectives and engage multimedia elements into their lessons, fostering a more dynamic and intellectually stimulating learning environment for students. Furthermore, integrating online resources into teaching practices can enhance the quality of instruction, promote critical thinking skills, encourage active student participation, and create a more engaging and immersive educational experience that supports student learning and academic growth.

Moreover, email management significantly affected all dimensions of quality teaching. This implies that the study shows a strong positive correlation between intellectual quality, a high-quality learning environment, and overall high-quality teaching. This further implies that results indicate that proficiency in email management contributes to better intellectual teaching practices and a higher-quality learning environment. However, it does not significantly affect overall teaching quality. As perceived, email management proficiency demonstrates significant positive correlations with intellectual aspects, the quality of the learning environment, and overall quality teaching. This suggests that being skilled in managing emails contributes to improved intellectual teaching practices and a better learning environment. While email management proficiency positively impacts intellectual aspects and the learning environment, it does not significantly influence overall teaching quality. These findings underscore the importance of effective email management skills in enhancing teaching practices and creating a conducive learning environment, emphasizing the need for educators to prioritize efficient email handling to support their instructional efforts.

Starks and Reich's research (2023) indicates that teachers who excel in email management can communicate more efficiently with students and parents. This proficiency allows teachers to communicate clearly and promptly, address concerns, and provide necessary updates on coursework and classroom activities. By enhancing communication through effective email management, educators can foster stronger relationships with students and parents, leading to improved engagement, support, and overall intellectual teaching practices in the educational setting.

Furthermore, online learning platforms have a significant effect observed across all dimensions of quality teaching. This means that proficiency in online learning platforms is associated with better intellectual teaching practices and a higher-quality learning environment. This further means that it does not significantly influence overall teaching quality. As evident, proficiency in online learning platforms exhibits significant positive correlations with intellectual aspects, the quality of the learning environment, and overall quality teaching. This implies that proficiency in online learning platforms is linked to improved

intellectual teaching practices and a higher-quality learning environment. While proficiency in online learning platforms positively impacts intellectual aspects and the learning environment, it does not notably affect overall teaching quality. These findings emphasize the importance of mastering online learning tools to enhance teaching practices and create an enriching learning environment, highlighting the role of technology in supporting effective educational practices.

Supporting these findings, several studies highlight the impact of online learning platform proficiency on teaching quality. According to Chen et al. (2021), teachers who demonstrate proficiency in online learning platforms can design more interactive and engaging lessons for their students. This proficiency enables educators to incorporate multimedia elements, interactive quizzes, and collaborative activities into their lessons, fostering a dynamic and participatory learning environment. By leveraging online learning platforms effectively, teachers can cater to diverse learning styles, encourage student interaction, and promote active engagement in the educational content. Ultimately, this leads to enhanced intellectual teaching practices that stimulate critical thinking, creativity, and knowledge retention among students.

Similarly, Stojan et al. (2021) reveal that online learning platforms empower teachers to create a flexible and accessible learning environment for their students. By utilizing these platforms, educators can offer learning materials, assignments, and resources that students can access anytime and anywhere, promoting a self-paced and personalized learning experience. Additionally, online platforms facilitate communication between teachers and students, allowing for seamless interaction and support outside traditional classroom hours. This flexibility and accessibility enhance student engagement, cater to individual learning needs, and promote a more inclusive and adaptable educational experience.

The findings of Wang and Kim (2023) as well as Debalos and Oco (2025), the overall influence of online learning platforms on teaching quality could be constrained if not accompanied by other ICT skills. While online learning platforms offer valuable tools for instruction, the full potential may not be realized without a broader range of ICT competencies. Teachers with a comprehensive skill set in various ICT tools and technologies can maximize the effectiveness of online platforms, creating more engaging and interactive learning experiences for students. Therefore, a holistic approach to ICT skill development is crucial to fully leverage the benefits of online learning platforms in enhancing teaching quality.

On the contrary, basic computer operations manifested as insignificant, as indicated by the t-value and p-value of more than 0.05 alpha level, which led to the acceptance of the null hypothesis. This means there is a crucial gap in the ICT skills of teachers. This further means that while basic computer operations are important, the lack of significance in this area suggests that teachers lack the more advanced skills needed for effective teaching in today's digital world. This implies an increasing reliance on technology in education. The study's recommendation to emphasize proficiency in productivity tools, internet browsing, email management, and online learning platforms is essential for improving the quality of education. As observed, these skills are not just tools for teachers to use in their classrooms but also essential for professional development, collaboration, and access to a vast range of resources. This finding also raises questions about the ICT training received by teachers during their college days. It is possible that the curriculum did not adequately prepare them for the demands of teaching in a digital environment. This suggests a need for reevaluating teacher training programs to ensure that they equip future educators with the necessary ICT skills to engage with technology in the classroom effectively.

By focusing on these specific ICT skills, training programs can empower teachers to create more engaging and effective learning experiences for their students, ultimately leading to improved intellectual quality, better learning environments, and enhanced teaching quality. The non-significant effects of basic computer operations on quality teaching imply that foundational ICT skills alone are insufficient to enhance teaching quality. Therefore, teacher training programs should go beyond basic computer literacy and focus on more advanced ICT skills significantly impacting teaching quality. There is a need for a focus shift in teacher training programs. While basic computer literacy is required, it is insufficient to ensure successful technology integration in the classroom. As observed, a teacher who is adept in fundamental computer activities such as file opening and email usage. However, it fails to properly manage student data or construct interesting lectures using advanced productivity tools such as spreadsheets or presentation software. To improve teaching quality, training programs should focus on increasing instructors' skills in online learning platforms, internet browsing, email management, and productivity tools. This will allow teachers to use technology to create dynamic learning settings, access valuable resources, and effectively connect with students and parents.

As observed, it is interesting to see the emphasis on the significance of teachers being proficient in productivity tools, internet browsing, email management, and online learning platforms. This emphasis on improving ICT skills will undoubtedly result in higher teaching quality and better learning environments for students. Educational institutions can improve their instruction's intellectual quality by going beyond basic computer literacy and training teachers in more advanced ICT skills. This method appears to imply that teachers with a wider range of ICT abilities are better prepared to provide high-quality education. Supporting these findings, several studies have emphasized the importance of basic computer skills in teaching quality.

Li (2024) reveals that the use of technology in early childhood education has increased, and music for language learning has become popular in China. However, research on the impacts of combining music and technology in Chinese nurseries is scarce. To evaluate the impact of music and technology on student involvement, this study took an interpretive practice-based approach and used collaborative action research methods. Key findings include that technology, music, and teacher assistance all help increase student involvement. Teachers' experiences, teaching approaches, emotional patterns, and pedagogical ideas all have an impact on involvement.

Thomas (2023) also highlighted that basic computer skills enable teachers to efficiently manage classroom resources and communicate effectively with students. The study used the Unified Theory of Acceptance and Use of Technology (UTAUT) to analyze factors affecting K-8 teachers' use of an LMS. The study found that perceived benefits and ease of use significantly impacted attitudes towards using the LMS. School site support and social influence also impacted attitudes. Teachers in grades 5-8 found the LMS more beneficial and easier to use than those in grades K- 4. The study suggests that administration plays a crucial role in staff success.

## IV. CONCLUSIONS

The following conclusions are hereby drawn from the study:

The study highlights the importance of ICT skills in improving public school teaching quality. Teachers' proficiency in using productivity tools can boost their confidence and competence with technology. Effective teaching often involves intellectual engagement and the integration of intellectual concepts. This integration enhances the overall quality of instruction. Therefore, fostering ICT skills is important for elevating teaching standards in public schools. On the other hand, online learning platforms are less important for enhancing teachers' ICT skills. A supportive and high-quality learning environment is more important for student success. Student engagement is directly linked to the quality of their learning environment. Therefore, focusing on creating a positive learning atmosphere is paramount. This outweighs the reliance on online platforms for teacher ICT development in this context.

## V. RECOMMENDATIONS

Based on the result of the study, the following are recommended:

1. Teachers should be encouraged to embrace continuous professional development, embrace personal promotion of position, and enhance positive attitude towards information communication technology.
2. For the school head to provide continuing support and resources to all teachers through the use of online learning platforms so that they have the skills and expertise they need to use them effectively in the classroom.
3. Teachers should enhance the learning environment to improve its quality in delivering quality learning, as this area poses more solutions towards intellectual activity.
4. Teachers should enhance the functionalities of various online learning platforms during the SLAC Seminar to strengthen their skills in assessment, communication, and resource management within digital learning environments.
5. The school head should conduct LAC session activities to help teachers enrich their skills and talents toward ICT Proficiency.

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