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CONTENT AND PEDAGOGICAL COMPETENCY OF GRADE 7 AND 8 TEACHERS IN THE LEARNING AREAS OF TECHNOLOGY AND LIVELIHOOD EDUCATION (TLE)

Annamae B. Penetrante[1*], Ma. Erika Z. Nimo, PhD[2]

[*1-2]University of Saint Anthony City of Iriga

Corresponding Author: ***Annamae B. Penetrante*** *(University of Saint Anthony City of Iriga)*

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Abstract: This study examined the pedagogical content competency of Technology and Livelihood Education (TLE) teachers in Bula District, Division of Camarines Sur, and determined its relationship with selected demographic variables. Using a descriptive-correlational research design, data were collected from 45 TLE teachers and analyzed through weighted mean and Pearson's correlation.

Findings revealed that most respondents are mid-career teachers with 7–10 years of experience, predominantly holding bachelor's degrees and representing diverse TLE specializations. Although the majority have attended relevant training, advanced academic qualifications remain limited. Overall, teachers demonstrated a moderate level of content and pedagogical competency. Strengths were noted in teaching delivery, classroom management, and integration of work values, while weaknesses were evident in contextualization, integration of technology, and reflective practice.

The study further identified several challenges affecting competency, including limited exposure to updated industry practices, insufficient instructional resources, difficulty in applying learner-centered strategies, and weak institutional support. Correlational analysis showed that educational attainment and relevant training significantly influence teachers' competencies, while specialization has no significant effect. Teaching experience showed limited influence on selected competency areas. The null hypothesis was therefore rejected.

Based on these findings, a strategic intervention program was developed to address identified gaps. The program emphasizes industry alignment, technology integration, improved instructional planning, and learner-centered teaching approaches. It also highlights the importance of continuous professional development.

In conclusion, strengthening teacher competency requires sustained training, advanced education, and institutional support to ensure effective, relevant, and skills-based TLE instruction.

Keywords: *Competency Level, Content Pedagogy, Strategic Initiatives.*

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Chapter 1

THE PROBLEM

Introduction

Education is a fundamental driver of national development, providing individuals with the knowledge, skills, and values necessary for effective participation in society. In the Philippines, the Department of Education (DepEd) has implemented continuous reforms to enhance the quality of basic education, notably through the K to 12 Basic Education Curriculum. Technology and Livelihood Education (TLE) is a key element of this curriculum, aiming to cultivate technical skills, entrepreneurial competencies, and work values that are vital for lifelong learning and employability. At the junior high school level, especially in Grades 7 and 8, TLE serves as a foundational subject, introducing students to Information and Communications Technology (ICT), Family Consumer Science (FCS), Industrial Arts (IA), and Agri-Fishery Arts (AFA). These early stages are essential for building learners' competencies and preparing them for future areas of specialization.

The effectiveness of TLE instruction is largely determined by teachers' content and pedagogical competencies. Content competency refers to mastery of subject matter, technical expertise, and awareness of current industry practices. Pedagogical competency involves the ability to implement instructional strategies that foster meaningful, skills-based learning. Given the inherently hands-on and experiential nature of TLE, teachers must integrate conceptual theories with practical application to ensure that students acquire both foundational knowledge and relevant skills.

Despite its importance, TLE instruction encounters several challenges that affect the quality of teaching and learning. A primary concern is the gap between teachers' content knowledge and evolving industry standards. As workplace skills change rapidly due to technological advancements, many teachers have limited opportunities for industry exposure or updated training. As a result, instruction may not align with current practices, reducing the relevance of learning experiences and limiting students' preparedness for real-world applications.

Another significant challenge is the limited adoption of learner-centered and competency-based pedagogical approaches. TLE instruction is enhanced by strategies such as project-based learning, collaborative activities, and performance-based assessments. Nevertheless, some teachers persist in using traditional lecture methods, which are less effective in fostering practical skills and higher-order thinking. This misalignment between subject requirements and instructional methods can hinder the attainment of learning competencies.

In addition, many schools continue to experience inadequate resources and facilities. Effective TLE instruction requires access to tools, equipment, and materials that simulate real-world work environments. Resource shortages often restrict teachers' ability to conduct hands-on activities, resulting in a more theoretical approach to instruction. This constraint negatively impacts the development of students' technical skills.

The mismatch between teachers' specializations and their assigned teaching areas presents another significant challenge. Many TLE teachers lack formal training in the specific fields they are tasked to teach, resulting in gaps in content mastery and reduced instructional confidence. Furthermore, the evolving demands of the K to 12 curriculum, including the integration of 21st-century skills and the implementation of updated frameworks such as the MATATAG curriculum, necessitate ongoing adaptation and competency development. Limited support and insufficient professional development opportunities further impede teachers' capacity to fulfill these requirements.

These challenges underscore the urgent need to assess the content and pedagogical competencies of Grade 7 and 8 TLE teachers. Since these grade levels lay the foundation for students' technical and vocational skills, deficiencies in teacher competency can have long-term effects on learners' development and readiness for future career pathways. Systematic assessment of teachers' competencies is essential for identifying areas requiring improvement and ensuring effective curriculum implementation.

The significance of this study is anchored in established legal and policy frameworks within Philippine education. Republic Act No. 10533, the Enhanced Basic Education Act of 2013, mandates the implementation of a learner-centered and developmentally appropriate curriculum that addresses learners' needs and aligns with industry standards. The Act emphasizes the development of skills essential for employment and entrepreneurship, highlighting the critical role of TLE. It also underscores the necessity of employing appropriate pedagogical approaches, such as constructivist and inquiry-based learning, which require strong pedagogical competencies from teachers.

Additionally, Republic Act No. 7836, the Philippine Teachers Professionalization Act of 1994, requires teachers to maintain high standards of competence and professionalism, emphasizing the need for continuous improvement in both content knowledge and instructional skills. Similarly, Republic Act No. 10912, the Continuing Professional Development (CPD) Act of 2016, obligates teachers to engage in lifelong learning to remain responsive to evolving educational and industry demands.

The Philippine Professional Standards for Teachers (PPST) further provide a framework for teacher quality, emphasizing domains such as content knowledge, pedagogy, curriculum planning, and assessment. These standards reinforce the integration of subject mastery with effective teaching practices as fundamental to achieving quality education.

Given these challenges and legal requirements, strategic initiatives are needed to address gaps in teachers' competencies. Such initiatives may include targeted professional development programs, industry immersion experiences, mentoring and coaching systems, and the provision of adequate instructional resources. Providing teachers with up-to-date knowledge and innovative teaching strategies can enhance their ability to deliver effective and relevant instruction.

This present study primarily supports Quality Education (SDG 4) by emphasizing the improvement of teacher competence, instructional quality, and effective delivery of skills-based education, all of which are essential to achieving inclusive and equitable learning outcomes. By strengthening teachers' mastery of content and pedagogy, the study contributes to the development of learners' technical and vocational skills, which are aligned with industry standards and lifelong learning goals. In addition, it supports Decent Work and Economic Growth (SDG 8), as TLE equips students with practical competencies that enhance employability, entrepreneurship, and workforce readiness. Furthermore, the study relates to Industry, Innovation and Infrastructure (SDG 9) by promoting the integration of modern tools, technology, and innovative teaching strategies in education, preparing learners to adapt to evolving industry demands. Overall, the study contributes to the broader goal of sustainable development by ensuring that education systems produce competent, skilled, and adaptable individuals.

In summary, while TLE is vital for preparing learners for future careers, its effective implementation is constrained by challenges related to teacher competency, resource limitations, and evolving educational demands. These issues underscore the urgent need to assess and strengthen teachers' content and pedagogical competencies. Grounded in legal provisions and supported by strategic initiatives, this study aims to contribute to the continuous improvement of TLE instruction and the overall quality of education in the Philippines.

Theoretical Framework

The theoretical framework for the study unveiled the level of content pedagogical competency and significant relationship with the demographic profile of Bula District TLE as a basis in establishing strategic initiatives.

Pedagogical Content Knowledge Theory. (Mafa-Theledi, 2024) represents the blending of content and pedagogy into an understanding of how particular aspects of subject matter are organized, adapted, and represented for instruction. It goes beyond just knowing the content or just knowing general pedagogical strategies. It includes knowledge of what makes certain topics easy or difficult to learn, the preconceptions and misconceptions that students bring to learning, and effective strategies for teaching content. PCK is unique to the teaching profession and is distinct from the general pedagogical knowledge shared across disciplines and the

content knowledge of subject matter experts. It is the "special amalgam of content and pedagogy" that is the province of teachers.

The study is anchor in this theory that emphasizing that effective teaching in Technology and Livelihood Education (TLE) requires the integration of content mastery and pedagogical skills to make learning meaningful and accessible. It supports the study's focus on teachers' ability to understand technical subject matter, apply appropriate teaching strategies, address learners' difficulties, and contextualize lessons to real-life situations. Through this lens, the study evaluates how well TLE teachers transform their knowledge into effective instruction that enhances students' understanding, skills, and practical application.

The Theory of Teachers' Competence (Jentsch & König, 2022) is a multidimensional construct that includes both cognitive and affective-motivational facets. It encompasses different knowledge domains such as content knowledge (CK), pedagogical content knowledge (PCK), and general pedagogical knowledge (GPK). Also, both teacher education and professional development play a key role in shaping teacher competence, which in turn impacts instructional quality and student learning outcomes. Continued research in this area can inform policies and practices to support teacher development. The study is anchore in this theory because by presenting teacher competence as an integration of knowledge domains content knowledge (CK), pedagogical content knowledge (PCK), and general pedagogical knowledge (GPK) along with affective-motivational attributes. It supports the study's focus on evaluating TLE teachers' ability to combine technical expertise with appropriate teaching strategies in delivering skills-based and contextualized instruction. The theory also emphasizes the influence of teachers' attitudes, commitment, and motivation in effectively applying their knowledge, particularly in hands-on and real-world learning environments.

Furthermore, it highlights the critical role of teacher education and continuous professional development in enhancing competencies, improving instructional quality, and promoting better student learning outcomes. Overall, it provides a comprehensive framework for understanding how TLE teachers integrate knowledge, skills, and professional growth to facilitate meaningful and practical learning.

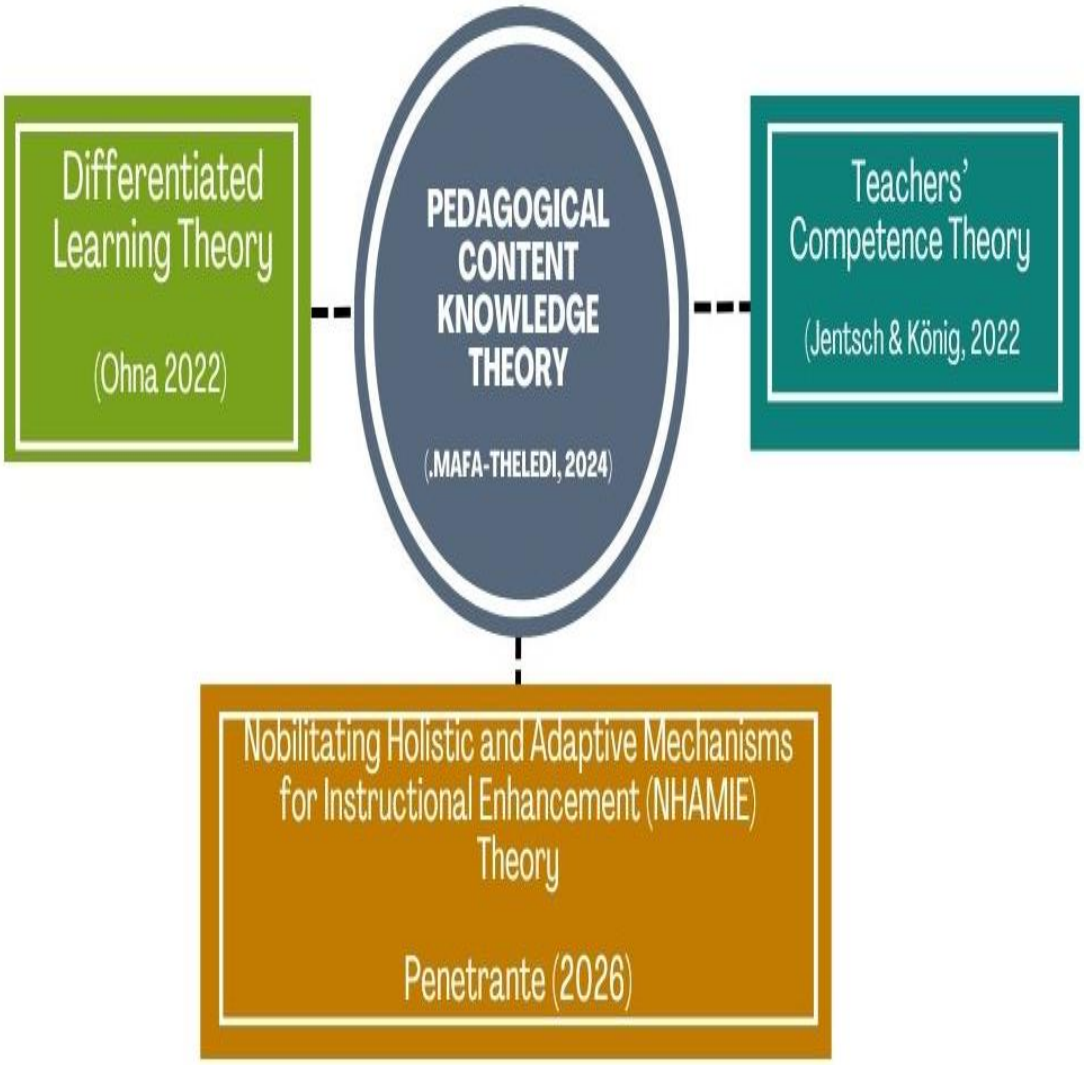

Figure 1

Theoretical Paradigm

Differentiated Learning Theory (Ohna, 2022) an instructional approach that adapts teaching to meet the diverse needs, abilities, interests, and learning styles of students. It involves using varied teaching methods, multiple forms of content delivery, flexible grouping, and offering students choices in how they learn and demonstrate understanding. Continuous assessment and

personalized feedback guide instruction, ensuring that each learner progresses according to their individual needs. Grounded in theories such as constructivism and multiple intelligences, differentiated learning promotes active engagement and meaningful learning experiences. Despite its benefits, it requires adequate teacher preparation, effective classroom management, and thoughtful assessment design.

In general, it aims to create an inclusive learning environment that maximizes each student's growth and potential. The study anchored to this theory by emphasizing that TLE teachers must adapt both content and instructional strategies to address learners' diverse needs, abilities, and learning styles. It supports the study's focus on pedagogical competency through the use of varied teaching approaches such as hands-on activities, demonstrations, flexible grouping, and contextualized tasks suited for skills-based learning. The theory also highlights the importance of presenting content in multiple ways, using real-life applications and simplified procedures to enhance understanding.

Furthermore, it underscores the role of continuous assessment and feedback in monitoring student progress and guiding skill development at an individualized pace. It also points to the need for teacher preparedness and ongoing professional development to effectively implement inclusive and responsive instruction. Overall, the theory provides a framework for evaluating how TLE teachers adjust their content and pedagogy to create meaningful, engaging, and competency-based learning experiences

The **Nobilitating Holistic and Adaptive Mechanisms for Instructional Enhancement (NHAMIE) Penetrante (2026)** is the researchers' theory that explains how teachers' instructional competence is continuously developed through an integrated and adaptive process of professional growth. It emphasizes that effective teaching, particularly in skills-based subjects like Technology and Livelihood Education (TLE), is not achieved through isolated knowledge acquisition but through the ongoing enhancement of both content mastery and pedagogical practice. NHAMIE Theory views teacher competence as multidimensional, involving technical expertise, instructional strategies, assessment skills, technology integration, and responsiveness to contextual demands. These competencies are strengthened through purposeful interventions such as training, mentoring, industry exposure, collaborative learning, and contextualized teaching strategies. A key principle of the theory is adaptability, which highlights the need for flexible and responsive instruction aligned with learners' needs, curriculum standards, available resources, and evolving industry requirements to ensure meaningful and relevant learning experiences.

Moreover, in relation to the study on TLE teachers' competencies, NHAMIE Theory serves as a guiding framework for understanding how identified gaps in content and pedagogy can be systematically addressed. The need for Competency assessment functions as the diagnostic stage, revealing strengths and areas for improvement such as limited technical skills, weak contextualization, or inadequate instructional strategies. Rather than treating these gaps as deficiencies. The researchers' theory reframes them as opportunities for growth through targeted and adaptive interventions. It supports the development of strategic initiatives such as capacity-building programs, ICT integration, contextualized lesson design, and industry-aligned training, all aimed at enhancing instructional quality. Aligned with the practical and competency-based nature of TLE, the theory effectively links assessment to action, ensuring that the evaluation of teachers' competencies leads to meaningful, sustainable, and context-responsive improvements in teaching practice and learner outcomes.

Conceptual Framework

The primary purpose of this research is assessing the content pedagogical competency and its significant relationship with the demographic profile of Technology and Livelihood Education (TLE) teachers in the Bula District to establish a strategi initiatives. The conceptual paradigm of the study illustrated in Figure 2 utilizes the system review of research, which includes input, process, and output.

The input of the study consists of all the essential information gathered to serve as the foundation for the research. This includes the profile of the respondents, paradigm that is constructed on the procedure, which shows the interplay of four important elements: the inputs, the process, the output, and feedback. Specifically, the TLE secondary teachers, detailing their length of service, educational attainment, specialization and relevant training. These demographic and professional variables help categorize the participants and explore patterns in leadership behavior. Along with this, the study also considers the level of content pedagogical competency. These inputs provide both the personal background necessary for a comprehensive analysis of instructional practices of teachers in educational institutions.

The output represents the immediate results of the research process. It includes empirical findings that detail the level content pedagogical competency that is practiced by secondary school teachers. These findings reveal both strengths and areas for improvement in instructional ability and provide insights into how personal and professional profiles influence the content pedagogical competencies of teachers. Based on these outcomes, the study proposes initiatives aimed at enhancing the competencies of TLE Teachers. These may take the form of targeted professional development programs, leadership training workshops, or recommendations for policy reforms, all tailored to support and strengthen ethical and practical leadership in schools in the Division of Camarines Sur.

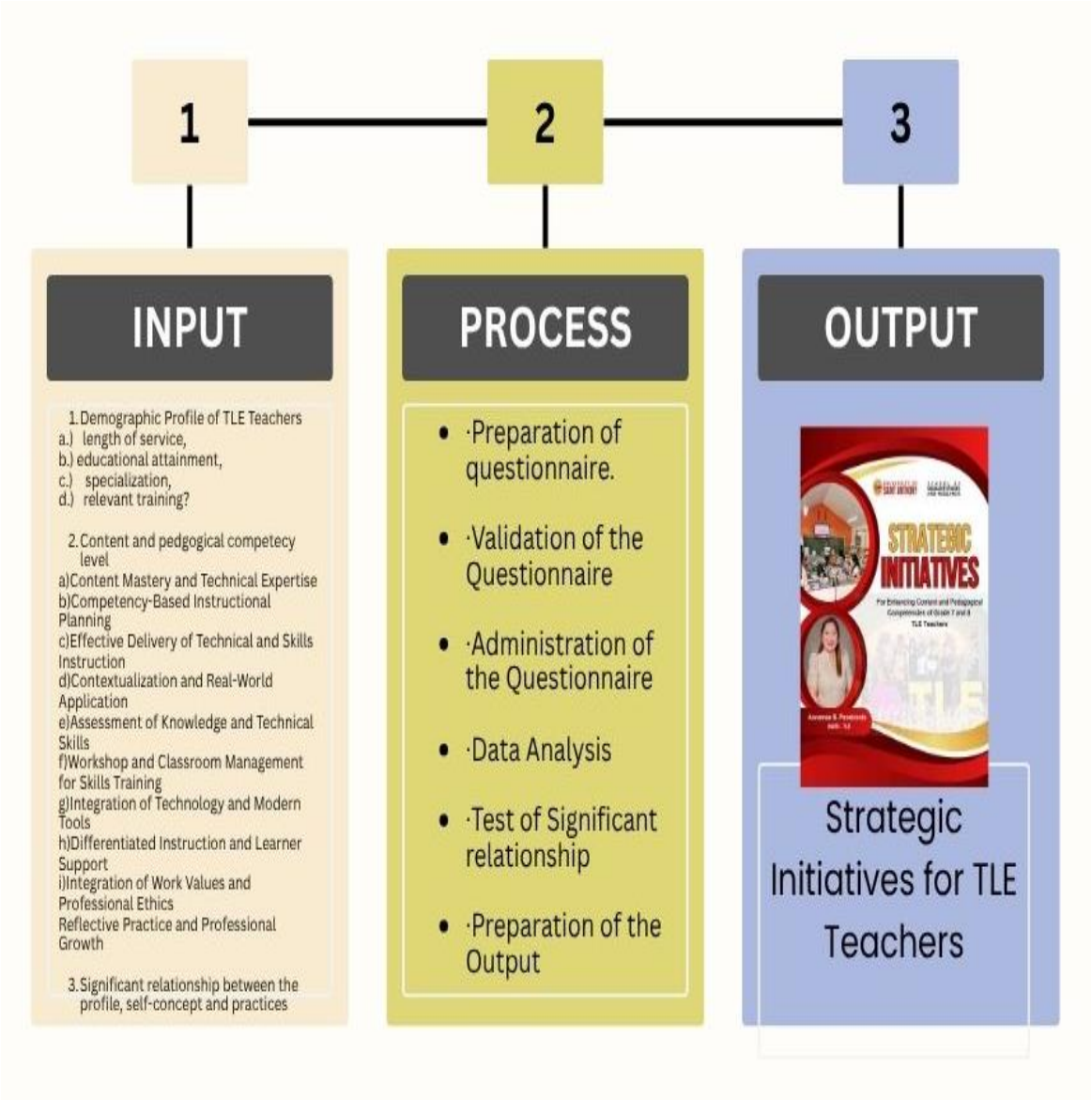

Figure 2

Conceptual Framework

The feedback phase focuses on the application and use of the research findings to generate positive change. It involves taking the output such as the proposed initiatives and using it to develop programs, strategies, or policies that will improve the self-concept and leadership practices of TLE Teachers. Feedback mechanisms also serve to monitor the effectiveness of these initiatives, encouraging continuous reflection, refinement, and improvement. Ultimately, the feedback loop ensures that the research contributes not only to academic knowledge but also to practical and sustainable enhancements in instructional ability, benefiting both teachers, school leaders and the broader learning environment

Statement of the Problem

This study aims to investigate the status of TLE teachers in Bula District. Specifically, this research aims to answer the following questions:

1. What is the demographic profile of the TLE teachers in Bula District in terms of:
    a.) length of service,
    b.) educational attainment,
    c.) specialization,
    d.) relevant training?
2. What is the level of content and pedagogical competencies of TLE teachers along with:
    a.) Content Mastery and Technical Expertise
    b.) Competency-Based Instructional Planning
    c.) Effective Delivery of Technical and Skills Instruction
    d.) Contextualization and Real-World Application
    e.) Assessment of Knowledge and Technical Skills
    f.) Workshop and Classroom Management for Skills Training
    g.) Integration of Technology and Modern Tools
    h.) Differentiated Instruction and Learner Support
    i.) Integration of Work Values and Professional Ethics
    j.) Reflective Practice and Professional Growth
3. Is there a significant relationship between demographic profile and content pedagogical competency level of teachers
4. What challenges encountered of technology and livelihood education teachers?
5. What strategic initiatives could be established based from the findings of the study?

Assumptions

This study adheres to the following assumptions:

1. There are varied, accurately, described and measured. demographic profile of Technology and Livelihood Education (TLE) teachers in Bula District, in terms of length of service, educational attainment, specialization, and relevant training, varies among respondents and may influence their teaching practices and professional competencies.
2. The content and pedagogical competency of TLE teachers can be assessed across the identified domains.
3. There are teachers experience challenges related to content pedagogical aspect.
4. There is a strategic initiative that can be establishes based from the findings of the study.

Null Hypothesis

There is no significant relationship between the demographic profile and teachers' content and pedagogy competency level.

Significance of the Problem

The findings of this study will have a direct impact on the following:

Learners. This will improve the learning experience of the learners in TLE. The study will pave the way for targeted interventions. This ultimately ensures that TLE teachers are better equipped to deliver hands-on, relevant, and high-quality instruction, leading to better acquisition of essential livelihood skills, entrepreneurial competencies, and improved readiness for post-secondary pathways.

TLE Teachers/Coordinators. This study provides a formal platform for TLE teachers and coordinators in Bula District to express their lived experiences, concerns, and needs regarding the issue and challenges in the aspect of their content and pedagogical competency. This validates their role as central figures in curriculum implementation and ensuring the transfer of quality education to learners.

Parents/ Stakeholders. The study will inform parents and community stakeholders about the practical needs and issues affecting their children's TLE education, particularly the need for specialized materials and equipment. This knowledge encourages more informed and proactive collaboration with the school, leading to better support for school projects and resource generation efforts.

School Heads. The results will provide School Heads with concrete data on the gaps, challenges, issues and opportunities within their TLE departments. This information is crucial for data-driven decision-making concerning budget allocation, procurement of necessary tools and equipment, and scheduling for teacher support. The study helps School Heads in developing more relevant supervisory and mentoring programs for TLE teachers, fostering an environment where curriculum innovation and effective teaching practices are supported and replicated.

Department of Education. Assessing content and pedagogical competency enables the department to ensure that teachers deliver high-quality, standards-aligned instruction that improves student learning outcomes. It also provides a basis for targeted professional development and policy decisions to address competency gaps and strengthen overall teaching effectiveness.

Researchers. This study of assessing content and pedagogical competency provides empirical evidence on teachers' strengths and gaps, serving as a basis for developing targeted interventions and recommendations. It also contributes to the body of knowledge by linking teacher competencies with instructional effectiveness and student outcomes, supporting data-driven improvements in education.

Scope and Delimitation

The purpose of this study is to assess the competency level and it significant relationship to their demographic profile of Technology and Livelihood Education (TLE) teachers in the Bula District. This study aims to provide a comprehensive understanding of the factors influencing the effective delivery of quality education of the TLE Teachers in the district.

The respondents are the TLE Teachers in Public Secondary Schools in Bula District 1, 2 and 3. Balaogan High School, Bula National High School, Caorasan High School, Casugad High School, Fabrica High School, Felipe P. Panton High School (formerly Inoyonan High School), Itangon High School, La Victoria High School, Ombao Polpog High School, Palsong High School, and San Ramon High School. Therefore, the findings may not be applicable to other schools or regions with differing educational contexts, resources, or challenges.

Definition of Terms

For a better understanding of the present study, the following terms are defined either conceptually or operationally:

Content and Pedagogical Competency. This term is defined as a unique form of knowledge for teaching that integrates subject matter knowledge with an understanding of how to represent and formulate that subject in ways that make it comprehensible to learners. It encompasses knowledge of potential student learning difficulties and students' prior knowledge of specific concepts. This concept emphasizes the importance of teachers being able to adapt their teaching strategies to meet the diverse interests and abilities of their student Gumayao et al. (2021) In this study content and pedagogical competency of teachers is assessed to examined and formulate suitable initiatives for school leaders.

Instructional Initiatives. This term is a critical component of the learning process, emphasizing its dual nature in both students and lecturers (Ardhyantama, et al., 2025). In this study, results and findings of teachers' content pedagogical level aid in formulating appropriate initiatives to enhance their competency level as a teacher.

Level. This term refers to a position on a real scale of quality or someone's ability compared to other people (Dictionary). The TLE Teachers will assess their level of content and pedagogical competency to examine and formulate suitable initiatives for school leaders.

Professional Development. Referring to the sustained, systemic process of learning and training designed to enhance the knowledge, skills, competencies, and attitudes of TLE teachers to effectively implement the demands of the new curriculum. It is not a single event, but a comprehensive set of activities aimed at continuous improvement.

Profile of the Respondents. This term includes age, race, ethnicity, gender, marital status, income, education, and employment and is crucial for identifying respondents, satisfying variables, and determining research methodology. In this study, demographic profiling is essential for the researcher to understand certain background features of the participants better and formulate suitable initiatives for school leaders.

Evidence-Based Recommendations. Refers to the final, prescriptive output of this study that is directly anchored to and supported by the specific data gathered from the Bula District TLE teachers. It is the call-to-action that educational leaders, curriculum planners, and professional development providers (like the Schools Division Office or NEAP) should implement to address the identified challenges and leverage the opportunities.

Review of Related Literature

This review of related literature aims to synthesize existing studies and theoretical perspectives that inform the understanding of TLE teachers' competencies. It seeks to identify key factors influencing effective teaching in TLE, explore prevailing issues and gaps, and provide a foundation for improving instructional practices and professional development initiatives. By doing so, the review supports the development of more responsive and competency-based educational programs that can better prepare learners for practical and lifelong skills.

Teachers Content and Pedagogical competency is crucial in the teaching and learning process, there is a significant influence of the level of teacher pedagogical content knowledge and competence in practical skills on the academic performance of students. It was revealed in a study that teachers' competence in practical skills has a positive effect on students' understanding of concepts and students' performance in a subject matter. In light of these results, the study recommends that educators should improve their pedagogical content knowledge and practical skills competence to improve students' performance in a subject area. Furthermore, teacher training programs should prioritize the development of robust content knowledge and practical skills in the field of their subject major they are teaching **(Onipede et al. 2025)**

Empirical research indicates that teacher quality plays a crucial role in improving students' academic achievement. However, studies on educational production functions may have limited conclusions because they often fail to fully explain the nature and impact of teachers' knowledge not only in terms of its effect on student learning but also in identifying which types of teacher knowledge are most essential for enhancing outcomes. Teachers are expected to continually process, evaluate, and update knowledge relevant to their professional practice. This article, therefore, reviews related literature on teachers' pedagogical content knowledge and its role in improving students' academic performance **(Jacob et al. 2020)**

Professional examines how continuous professional development (CPD) affects teaching quality and student outcomes. It identifies five major themes: the value of student perceptions in evaluating teaching effectiveness, the role of CPD in improving teacher learning, the influence of leadership on teacher performance, the importance of assessment and evaluation in promoting creativity, and the benefits of collaboration and professional learning communities. The findings indicate that well-implemented CPD supported by strong leadership and collaborative practices can greatly enhance teaching quality and educational outcomes. At the same time, the study acknowledges challenges such as limited resources and the need for more innovative assessment approaches. Overall, it underscores the need for educational reforms that prioritize continuous professional development, effective leadership, and collaborative environments to address the changing demands of modern education **(Ambon et.al 2024).**

Moreover, such professional growth opportunities enable educators to respond effectively to the evolving demands of education, leading to better classroom management and assessment practices. The strong relationship between professional development and teaching performance has been widely recognized worldwide, highlighting the importance of continuous training in achieving instructional excellence **(Miller & Johnston, 2022).**

Researcher **(Sayson-Sumugat, 2025)** proved that assessment skills and pedagogical approaches are significant determinants of teaching competence and these factors are crucial for enhancing teaching competence, suggesting that effective teaching practices can significantly impact student behavior and learning outcomes. It emphasizes the importance of ongoing professional development for teachers to improve their assessment strategies and pedagogical techniques, ultimately supporting the goal of providing inclusive and quality education for all learners.

In the of **(Ampatua & Basmayor, 2025)** revealed that teachers demonstrated strong competencies in content knowledge and pedagogy, showing mastery of subject matter, use of varied strategies connected to real-life contexts, and the ability to adapt instruction, maintain supportive classrooms, and apply diverse assessments. This resulted in high performance in numeracy and literacy, with most teachers rated "Outstanding" or "Very Satisfactory," indicating effective and responsive instruction.

However, a notable gap was identified in technological integration, as its use remained limited and required further enhancement. Statistical analysis showed that content knowledge and technological proficiency had a significant positive relationship with teaching outcomes, while pedagogical knowledge did not show a significant effect. It was concluded in this study the need for continuous professional development, particularly through targeted programs that strengthen teachers' technological skills and integration in instruction.

The study of **Bawar (2019)** emphasized that adequate instructional facilities, equipment, and materials foster a deeper appreciation of TLE among both students and teachers. Academic achievement is intimately tied to the availability of these instructional resources and is equally influenced by the attitudes, interests, and motivations of students and teachers. Consequently, the failure to meet required competencies often stems from inadequate facilities, leading to compromised academic achievement.

The study found significant relationships among senior high school teachers' pedagogical competencies, demographic profile, and teaching challenges in entrepreneurship education. Results suggest that teachers' demographic characteristics may be related to their level of pedagogical competence. A significant inverse relationship was also identified between teaching competencies and challenges, indicating that higher competence is associated with fewer difficulties in teaching. Additionally, the study explored the link between demographic profile and challenges encountered, highlighting the interconnected influence of teachers' background, competencies, and the issues they face in delivering entrepreneurship education **(Rogel & Reginalde, 2024).**

In the aspect of demographic profile and its relationship with the teachers' competency younger teachers demonstrated stronger technological proficiency, whereas more experienced teachers excelled in pedagogy and content. Higher competence in technology integration was also linked to better student critical thinking outcomes (**V.Merino,** 2025). Same with the study of **(Villareal & Homillano, 2024)** found a significant negative correlation between the number of years in teaching and technological knowledge, indicating that longer teaching tenure may lead to lower technological proficiency among agriculture teachers. No significant relationships were observed between demographic factors and pedagogical or content knowledge. This suggests that demographic characteristics do not significantly enhance teachers' pedagogical or content knowledge in agricultural education.

In addition, a study finding revealed that the faculty complied with the minimum educational qualifications required by the Commission on Higher Education and were rated as very satisfactory in terms of their competencies. A significant difference was observed among the teaching competencies. Moreover, a positive correlation was found between teaching competencies and educational attainment, indicating that higher educational attainment contributes to improved teaching competencies **(Bulilan, 2022).**

It is empirical evidence, that in TLE subject instructional materials are always insufficient for the teachers and learners during classroom and hands-on activity. This problem was proven in the study of **Tan (2021**) on Technology and Livelihood Education (TLE) instruction in secondary schools within the Northern Samar Division. The findings highlighted significant shortages in instructional materials, tools, and equipment. Many schools lacked essential facilities necessary for effective TLE instruction, which impeded the delivery of hands-on learning experiences crucial to the subject. The study also emphasized the need for professional development among TLE teachers, noting that the lack of training and seminars hindered their ability to effectively impart knowledge and adapt to evolving educational demands.

Also, **Tingzon & Buyok (2022)** identified the struggles faced by teachers tasked with teaching TLE subjects outside their specialized field, compounded by the scarcity of resources and equipment. The research findings shed light on the various problems, challenges, and opportunities faced by teachers in the teaching of TLE. The identified problems revolve around human, pedagogical, and material aspects, including limited resources, practical activity constraints, and the financial backgrounds of students.

However, in the study of **Aljhes et. al. (2025)** that effective delivery of technical and skills instruction is multifaceted, involving the availability of resources, the experience of instructors, student attitudes, and organizational strategies. By addressing these factors, educational institutions can enhance the quality of technical education and better prepare students for their future careers in the workforce. In, addition it was stressed in findings the essential role of contextualization and real-world application in improving the effectiveness of education. By making learning more relevant and meaningful, educators can promote deeper understanding and enhance skill development, thereby better preparing students for success in both their personal and professional endeavors.

On the aspect of contextualization as part of the competency the study of **Alumia (2025)** focused on the implementation of a contextualized teaching and learning approach where the researcher also utilized a descriptive-correlational design, surveying teachers to assess the integration, efficiency, and effectiveness of this teaching method, which connects academic content to real-world applications. Findings indicated a very high level of integration and efficiency, with significant improvements in student engagement and academic performance. The study also highlighted strong correlations among the three assessed areas, suggesting that enhancing teacher training and resource allocation could further optimize learning outcomes. Recommendations for future research include exploring the long-term impacts of this approach on education policy and student learning.

On other side, a study about differentiated instruction as a proactive and learner-centered approach that modifies teaching methods, content, and assessment to accommodate students' diverse backgrounds, abilities, interests, and learning styles was conducted. The research underscores the need for an inclusive and responsive classroom where teachers adjust pacing, materials, and tasks to meet individual needs, and apply flexible grouping to encourage collaboration and peer learning. Continuous assessment is emphasized as a vital process for tracking student progress and guiding instructional adjustments based on identified strengths and weaknesses. Through personalized learning experiences, differentiated instruction helps minimize learning gaps and enhances students' engagement, motivation, and academic performance. However, its success depends largely on teachers' competence, requiring continuous professional development to effectively plan, implement, and evaluate differentiated strategies. **(Goyibovaa 2025)**

Another competency that a teacher must possess is competency-based instructional planning, it is an approach that focuses on designing instruction around clearly defined competencies that learners must demonstrate, emphasizing the integration of knowledge, skills, and attitudes aligned with real-world and industry demands. It also involves setting competency-based objectives, selecting relevant content, utilizing learner-centered and task-driven teaching strategies, and applying both formative and summative assessments to ensure the achievement of desired outcomes. This study's' findings of **Hao (2024)** suggest that this approach enhances students' knowledge mastery, practical skills, and overall learning outcomes by making instruction more meaningful and application oriented. However, it also highlights the need for continuous alignment of curriculum, teaching methods, and assessment with evolving industry standards. Thus, it is recommended that educators adopt dynamic and flexible instructional planning, incorporate experiential and project-based learning, and continuously update their practices through professional development to effectively support competency development.

Technical Vocational Education and Training (TVET) is essential for developing skills and competencies needed for employment and socioeconomic growth. A study assessed the teaching competencies of technical-vocational educators and their impact on instructional effectiveness and student performance using a mixed-methods approach. Results revealed that while teachers demonstrated strong technical expertise and adaptability to industry trends, they faced challenges in pedagogical practices such as student-centered teaching, assessment strategies, and

continuous professional development. The study also emphasized the need to balance technical skills with effective teaching methods to enhance learning outcomes. It also highlighted the importance of institutional support through structured training and competency-based programs. Consequently, schools are encouraged to implement targeted professional development initiatives to improve pedagogy and align instruction with both industry demands and effective teaching practices, with future research focusing on the long-term impact of these interventions **(Mendoza 2025)**

It is also vital that the significant influence of teachers' work ethics on students, schools, and the wider community. In a study's' findings show that teachers with strong work ethics demonstrate more positive behavior and attitudes toward their profession, colleagues, and students. Key aspects such as responsibility to the profession, professional competence, accountability to students and the school community, and ethical use of technology were significantly linked to teachers' behavior and attitudes. The study concludes that work ethics play a vital role in professional development, classroom management, and ethical conduct, recommending that teachers pursue professional development plans that reinforce strong work ethics to support their growth and effectiveness **(Osias 2024)**

Additionally, a teacher must have a knowledge about classroom management which was emphasized in the study of **Olawoyin (2019),** that effective classroom management is essential for providing skilled manpower, technical knowledge, and vocational competencies. Key strategies include establishing routines, handling disruptive behavior, careful lesson planning and delivery, and modeling appropriate teacher behaviors. By applying these strategies, teachers can create a supportive learning environment, maximize instructional time, and improve students' attainment of educational goals.

Conversely, in a study of **Bobbey (2025)** despite efforts to equip technical vocational students with the practical skills needed to teach foundational concepts in technical education and support the country's technological development, many students at the basic education level remain inadequately transformed. This study aimed to assess factors influencing the effective delivery of technical skills practical lessons. Findings revealed a lack of practical work facilities, limited student experience with hands-on tasks, and influential factors such as teachers' practical experience, teaching experience, and age. The study concluded that improving practical work organization requires providing adequate resources, highlighting the importance of practical activities to students, and organizing educational field trips to relevant firms.

In a local study, **Luna (2024)** which examined the assessment and reporting competency of Senior High School teachers in Goa District, Philippines, using a survey based on the Philippine Professional Standards for Teachers with 45 participants. Results indicated that teachers demonstrated a Moderately High Level of Competency across all areas, including designing and implementing assessment strategies, monitoring and evaluating learner progress, providing feedback, communicating with stakeholders, using assessment data to improve teaching, and adhering to ethical assessment practices. Significant differences in competency were observed based on educational attainment and employment status, but not by age, sex, civil status, number of trainings attended, or length of service. The study recommends that teachers pursue professional development, such as master's or doctoral programs, to further enhance their assessment and reporting skills.

Assessing teachers' competency in content and pedagogy is crucial because it directly influences teaching quality and student learning outcomes. Strong content knowledge ensures accurate and thorough instruction, while pedagogical skills enable teachers to plan lessons, select appropriate strategies, and adapt to diverse learner needs. Competent teachers can provide inclusive, practical, and engaging learning experiences, identify areas for professional growth, and ultimately enhance student achievement and readiness for further education or employment. In essence, evaluating these competencies ensures that teachers are both knowledgeable and effective in delivering that knowledge.

Synthesis of the State-of-the- Art

The reviewed literature consistently underscores that teachers' content and pedagogical competencies are fundamental determinants of effective teaching and improved student learning outcomes. Studies affirm that strong pedagogical content knowledge (PCK) and practical skills significantly influence students' academic performance and conceptual understanding, highlighting the need for teachers to continuously enhance both domains (Onipede et al., 2025). Supporting this, empirical evidence emphasizes that teacher quality is a critical factor in student achievement, although gaps remain in identifying which specific types of teacher knowledge most strongly impact learning outcomes (Jacob et al., 2020).

Moreover, continuous professional development (CPD) emerges as a vital mechanism for strengthening teaching competencies. Research indicates that CPD supported by leadership, collaboration, and reflective practices enhances instructional quality, classroom management, and assessment practices (Ambon et al., 2024; Miller & Johnston, 2022). Similarly, assessment skills and pedagogical approaches are identified as key contributors to teaching competence and student success, reinforcing the need for sustained teacher training (Sayson-Sumugat, 2025). While teachers generally demonstrate strong content and pedagogical competencies, gaps in technology integration persist, with studies showing that technological proficiency, alongside content knowledge, significantly influences teaching outcomes (Ampatua & Basmayor, 2025).

The literature also reveals that contextual and external factors such as availability of instructional resources, teacher demographics, and teaching challenges significantly affect competency and instructional effectiveness. Insufficient tools, equipment, and facilities hinder the delivery of hands-on learning, particularly in TLE and TVET contexts (Bawar, 2019; Tan, 2021; Tingzon & Buyok, 2022). Furthermore, demographic variables such as teaching experience and age show varying relationships with competencies, particularly in technology integration (Merino, 2025; Villareal & Homillano, 2024), while higher teaching competence is associated with fewer instructional challenges (Rogel & Reginalde, 2024).

In terms of instructional practices, the integration of contextualization, differentiated instruction, and competency-based planning is emphasized as essential in addressing diverse learner needs and improving engagement and performance (Alumia, 2025; Goyibovaa, 2025; Hao, 2024). However, challenges remain in balancing technical expertise with effective pedagogy, particularly

in TVET education, where both domains must be aligned with industry demands (Mendoza, 2025). Additionally, factors such as teachers' work ethics and classroom management skills further contribute to instructional effectiveness and student development (Osias, 2024; Olawoyin, 2019).

In summary, the synthesis reveals that while teachers generally demonstrate adequate competencies, persistent gaps exist in technology integration, resource availability, and continuous professional growth. These findings highlight the need for targeted interventions, including strengthened CPD programs, improved resource allocation, and enhanced alignment of teaching practices with real-world and industry demands, to further improve teaching quality and student outcomes.

Research Gap

Notwithstanding the extensive body of literature highlighting the importance of teachers' content and pedagogical competencies in improving student learning outcomes, several research gaps remain evident. While many studies confirm the significant influence of pedagogical content knowledge and practical skills on academic performance, there is limited clarity on which specific components of teacher knowledge most strongly impact student achievement across different subject areas and contexts. Existing research often treats competencies as general constructs, leaving a gap in identifying the relative contribution of content knowledge, pedagogy, and technological proficiency, particularly in TLE and TVET settings.

Moreover, although continuous professional development (CPD) is widely recognized as essential for enhancing teaching quality, there is insufficient localized and empirical evidence on how specific CPD programs directly improve teachers' content and pedagogical competencies and translate into measurable student outcomes. There is also a lack of studies examining the long-term effectiveness of these interventions, especially in resource-constrained public-school settings.

Another gap lies in the integration of technology in teaching. While studies reveal its significant relationship with teaching outcomes, many teachers still demonstrate low technological proficiency. However, limited research explores how technology integration can be effectively combined with pedagogical and content knowledge (TPACK) in practical classroom settings, particularly in TLE where hands-on skills are essential.

Furthermore, although several studies examine demographic variables such as age, teaching experience, and educational attainment, findings remain inconsistent regarding their influence on teacher competencies. There is a need for more in-depth and context-specific investigations to determine how these factors interact with teaching performance and instructional challenges.

Additionally, issues related to insufficient instructional materials, lack of facilities, and teachers teaching outside their specialization are frequently identified, yet there is a scarcity of studies that comprehensively examine how these constraints directly affect the development and application of teachers' competencies in real classroom practice. Similarly, while contextualization, differentiated instruction, and competency-based approaches are recognized as effective strategies, limited research integrates these approaches with teachers' competency levels and their actual impact on student performance.

Finally, most studies focus on general teaching competencies, with fewer research efforts specifically addressing the combined influence of content, pedagogy, technology, resources, and contextual factors in a single framework. Hence, there is a need for a more holistic and context-driven investigation that examines teachers' content and pedagogical competencies, their relationship with profile variables, and their implications for instructional effectiveness, particularly in TLE education within specific local settings.

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Research Methodology

This chapter presents and describes the methodology of the research study, which includes the research design, sampling technique, the respondents, data-gathering instruments, study procedures, and the statistical tools that will be used in the study.

Research Design

This study will assess the content pedagogical competency level of Technology and Livelihood Education (TLE) Teachers in Bula District, Division of Camarines Sur. It will use of descriptive-correlational method. The descriptive method is a non-experimental research design used to accurately and systematically describe the characteristics of a population, phenomenon, perception or situation.

On the other hand, correlational method will be used to identify the significant relationship between demographic profile in terms of length of service and the content and pedagogical competency level of teachers

Respondents. The respondents are the TLE Teachers in Public Secondary Schools in Bula District 1, 2 and 3. Balaogan High School, Bula National High School, Caorasan High School, Casugad High School, Fabrica High School, Felipe P. Panton High School (formerly Inoyonan High School), Sto. Nino Integrated School, La Victoria High School, Ombao Polpog High School, Palsong National High School, and San Ramon High School.

Data Gathering Tools. The researcher administers survey questionnaire as a tool to collect necessary data in the research process. The structured survey questionnaire will use to collect quantitative data regarding the profile, and assessment of the content and pedagogical competency level of TLE teachers.

Survey Questionnaire. The survey questionnaire will be formulated by the researcher to assess the content pedagogical competency of TLE Teachers. The questionnaire is divided into 2 parts. Part 1 pertains to the demographic profile of the TLE Teachers of Public Secondary Schools of Bula District. Part II assesses the competency level (ten) indicators of content pedagogical competency as a basis for establishing a strategic initiative for teachers.

Preparation of the Questionnaire. A thorough review of related literature and studies was consulted to create a structured questionnaire. The researcher will create an aligned questionnaire on the specific objectives of the study. The Likert scale will be used to answer questions to have consistency in the measurement of attitudes, perceptions, and experiences of the respondents. A draft will also be submitted to the research adviser for critique and feedback. In addition the survey will be treated using the statistical tool with Cronbach Alpha to also test the consistency of answers during the dry run and the conduct of study.

Validation of the Questionnaire. To ensure the validity and reliability of the questionnaire, the researcher will conduct a dry run to be administered in schools in Pili District. The researcher will gather and analyze data gathered and acknowledge feedback to improve its content and revise other corrections. Consequently, a consultation with the adviser and panel of researchers will be conducted.

Administration and Retrieval. Permission through letters will be addressed to the Schools Division Superintendent (SDS), Camarines Sur, Public School District Supervisor (PSDS), school head/teachers of Bula Districts, and teachers and Dean of USANT Graduate Studies and Research. After the approval, printing and distribution of questionnaires were distributed to respondents. Gathered data will be tabulated, organized, analyzed, and interpreted quantitatively. The researcher will be using statistical tools to treat the data that will be gathered. However, in the far-flung areas of Buhi District, a google forms was sent to the respondents for them to be able to participate in the study.

Ethical Consideration. The researcher will adhere to the highest ethical standards throughout the study to ensure the protection of the rights and welfare of the respondents/participants through informed consent, confidentiality and anonymity of respondents, and data security.

Statistical Treatment. The data gathered will be tabulated, organized, analyzed, and interpreted using the statistical tools/procedures described below. The descriptive method was used with the questionnaire as the main data gathering instrument which was validated and administered to T.L.E. teachers. The data gathered from the responses of the teachers will be analyzed and interpreted using frequency counts, percentage, ranking, and weighted mean.

Likert Scale. A survey methodology will be used to measure attitudes, opinions, or behaviors of respondents toward the challenges faced in the new curriculum. The 5-point Likert scale is the most accurate of the Likert Scale representing respondents' real judgement.

Likert Scale	Verbal Interpretation	Range
1	Very High	(4:21-5:00),
2	High	(3:41-4:20),
3	Moderately	(2.61-3.40),
4	Low	(1.81-2.60),
5	Very Low	(1:00-1.80)

Mean/Weighted Mean. Used to complete the weight of the responses in the questionnaire which include, determining the population bases from demographic profile and determining the level of content and pedagogical competency of TLE Teachers in Bula District

The formula is:

$$\bar{X} = \frac{\sum X}{N}$$

Where: $\bar{X}$ = sample mean

$\sum X$ = sum of the sample observation

N = the sample size

Percentage. It was used to determine the magnitude of the responses to the questionnaire.

$$P = \frac{F}{N} x100$$

Where: P=Percentage

F=Frequency

N= total number of respondents.

Pearson's Product- Moment of Correlation Coefficient ®. This was a statistical measure used to analyze and understand relationships between, the demographic profile and content and pedagogical competency level of TLE Teachers

$$\mathbf{r = [n(\Sigma xy) - \Sigma x \Sigma y] / \sqrt{[n(\Sigma x^2) - (\Sigma x)^2][n(\Sigma y^2) - (\Sigma y)^2]}}$$

Where: n - is the number of data points (paired x and y values).

Σx - is the sum of all x values.

Σy - is the sum of all y values.

Σxy - is the sum of the products of corresponding x and y values.

Σx^2 - is the sum of the squares of the x values.

Σy^2 - is the sum of the squares of the y values.

$\sqrt{}$ - indicates the square root

These statistical tools will play a crucial role in the research process. They will allow the researcher to organize and interpret the data in a meaningful way, providing valuable insights into the research topic. By using these tools effectively, the researcher will be able to draw solid conclusions from the data and provide comprehensive analysis of the findings to establish a strategic intervention.

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Chapter 3

CONTENT AND PEDAGOGICAL COMPETENCY OF GRADE 7 AND 8 TEACHERS IN THE LEARNING AREAS OF TECHNOLOGY AND LIVELIHOOD EDUCATION (TLE)

This chapter presents the results and discusses the data gathered considering the research problems and hypotheses for this study. The information follows the sequence of the statement of problems presented in Chapter I.

The Profile of Technology and Livelihood Education Teachers

Technology and Livelihood Education (TLE) teachers play a vital role in preparing learners with hands-on skills and competencies essential for real-life applications and workforce readiness. Examining their personal, educational, and professional profiles provides a view of their teaching proficiency and capacity to deliver quality instruction. Hence, this study examines the profile of TLE teachers as a basis for developing strategic interventions for their content and pedagogy.

In this section shows the demographic profile of the respondents, revealing important characteristics regarding their length of service, educational attainment, specialization, and relevant training, providing background information for their content and pedagogical competencies.

Tables 1A shows that there were forty-five (45) respondents. The largest group consists of teachers with 7–10 years of service (19 or 42.22%), indicating most are in their mid-career stage. This is followed by those with 1–3 years (9 or 20.00%) and 4–6 years (9 or 20.00%) of experience, while 6 teachers (13.33%) have more than 10 years of service, and only 2 teachers (4.44%) have less than one year of experience.

Table 1A: Length of Service

Profile	Category	Frequency	Percentage
Length Of Service	Less than 1 year	2	4.44
	1-3 years	9	20.00
	4-6 years	9	20.00
	7-10 years	19	42.22
	More than 10 years	6	13.33
	Total	**45**	**100.0**

Most of the teachers in the study are in the middle of their careers, with the largest group having 7–10 years of experience (42.22%). Those with 1–3 years and 4–6 years of service each make up 20%, while fewer teachers have more than 10 years (13.33%) or less than one year of experience (4.44%).

This shows that the group is mostly composed of moderately experienced teachers who already have solid teaching and classroom management skills. Their presence helps ensure stable and consistent instruction. However, the smaller number of highly experienced teachers may mean fewer mentors for advanced guidance. At the same time, the presence of newer teachers highlights the need for continuous mentoring and support.

Generally, the mix of experience levels suggests a balanced workforce, but it also points to the importance of professional development that supports both growing teachers and those who are still building their skills.

Tables 1B shows that in terms of educational attainment, the data show that 35 teachers (77.78%) are bachelor's degree holders, 9 teachers (20.00%) have earned a master's degree, and only 1 teacher (2.22%) holds a Doctorate degree.

Table 1B: **Educational Attainment**

Profile	Category	Frequency	Percentage
Educational Attainment	Bachelor's Degree	35	77.78
	Master's Degree	9	20.00
	Doctorate Degree	1	2.22
	Total	**45**	**100.0**

Most of the teachers in the study hold a bachelor's degree (77.78%), while a smaller number have a master's degree (20.00%), and only one has a doctorate (2.22%).

This suggests that while most teachers meet the basic qualification for teaching, only a few have pursued advanced studies. The limited number of graduate and doctoral degree holders may mean fewer opportunities for higher-level expertise, research-based teaching, and instructional leadership within the group.

Overall, it shows some level of professional growth among teachers, but it also highlights the importance of encouraging further graduate studies to strengthen teaching quality, innovation, and leadership in the school system.

Table 1C shows that in terms of specialization, the respondents come from varied fields, with the highest representation in Food and Consumer Services (FCS) (17 or 37.78%), followed by Information and Communication Technology (ICT) (13 or 28.89%), Agriculture and Fishery Arts (AFA) (10 or 22.22%), and Industrial Arts (IA) (5 or 11.11%).

Table 1C: Specialization

Profile	Category	Frequency	Percentage
Specialization	AFA	10	22.22
	ICT	13	28.89
	FCS	17	37.78
	IA	5	11.11
	Total	**45**	**100.0**

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Most of the teachers are specialized in Food and Consumer Services (37.78%), followed by ICT (28.89%), Agricultural and Fishery Arts (22.22%), and Industrial Arts (11.11%).

This suggests that the group is mainly composed of teachers with expertise in FCS and ICT, showing a strong emphasis on service-based and technology-related TVL areas. In contrast, fewer teachers specialize in Industrial Arts, indicating it is less represented compared to the other strands. In general, the distribution shows a fairly balanced TVL coverage, but it also points to the need for continued support and development in less-represented areas like Industrial Arts to ensure equal strength across all specializations.

Table 1D shows that in terms of relevant training, the vast majority of the respondents, 41 teachers (91.11%), reported having attended relevant training, while only 4 teachers (8.89%) have not.

Table 1D: Relevant Training

Profile	Category	Frequency	Percentage
Relevant Training	YES	41	91.11
	NO	4	8.89
	Total	**45**	**100**

Most of the teachers (91.11%) have attended relevant training, while only a few (8.89%) have not.

This shows that teachers are generally well-equipped through continuous professional development, which helps improve their teaching skills and confidence in the classroom. It also reflects the school's strong support for training and lifelong learning.

However, the small number of untrained teachers suggests that there is still room to ensure that all educators are given equal access to training opportunities. Overall, the results point to a positive culture of professional growth that supports better teaching and learning outcomes.

This suggests most respondents have considerable teaching experience, which may contribute to their instructional effectiveness. Regarding educational attainment, while most teachers meet the minimum requirement, only a small proportion have completed advanced studies, indicating a need for further academic development to enhance their professional competencies.

The diversity in specialization shows a wide range of expertise among teachers, which may enrich the delivery of technical and vocational education. Most teachers are also actively engaged in professional development, indicating their commitment to improving educational practices.

In summary, the findings imply that while respondents are generally experienced and well-trained, there is an opportunity to increase higher educational attainment to further strengthen their content and pedagogical competencies

The Content and Pedagogical Competency Level of Technology and Livelihood Education Teachers

Effective teaching in Technology and Livelihood Education (TLE) relies on teachers knowing their subject well and using the right teaching methods. Strong content knowledge and teaching skills help students learn deeply and build practical abilities. This study evaluates TLE teachers' content and teaching skills to guide future improvements.

Table 2A shows that teachers are moderately competent in knowing their TLE specialization, explaining technical ideas clearly, and answering students' questions accurately, with a weighted mean of 2.87. However, their ability to connect lessons to current industry practices is low, with a mean of 2.24. Overall, the average for content mastery and technical skills is 2.64, which is considered moderately competent.

Table 2A: **Content Mastery and Technical Expertise**

Indicators	**WM**	**VI**	**Rank**
1. Demonstrates thorough knowledge of TLE specialization areas.	2.87	Moderate	1
2. Explains technical concepts clearly and accurately.	2.87	Moderate	1
3. Connects theory with practical applications.	2.69	Moderate	3
4. Uses appropriate technical terminology correctly.	2.47	Low	4
5. Integrates updated industry practices and standards.	2.24	Low	5
6. Answers learners' questions with clarity and accuracy.	2.87	Moderate	1
7. Updates lessons based on emerging trends and technologies.	2.47	Low	4
8. Aligns content with competency standards of the Department of Education.	2.80	Moderately	2
Average Weighted Mean	**2.64**	**Moderate**	

Legend: Vey High (4:21-5:00), High (3:41-4:20), Moderate (2.61-3.40), Low (1.81-2.60), Very Low (1:00-1.80)

The findings show that improving teaching quality and professional development in TLE is important. Teachers usually have moderate skills in content and technical areas, which helps them explain lessons and answer questions well. Still, there is a gap between classroom teaching and current industry practices. This means lessons often lack real-world connections and up-to-date standards, which are needed to prepare students for the workplace.

This gap can make lessons less relevant and leave students less prepared for job requirements. The data shows a need for targeted professional development, such as industry training, ongoing skill updates, and better partnerships with industry. Improving these areas is key to making TLE teaching more effective and keeping it aligned with workforce needs.

The moderate results show that teachers are still developing their skills, as Mendoza (2025) also found that teachers often focus on content mastery and technical knowledge, which helps students gain useful job skills. However, technical skills alone are not enough. Many teachers struggle to use student-centered methods and make lessons engaging. Effective teaching requires a balance of technical know-how and competent teaching methods, along with ongoing professional development to improve both teaching and student results.

Table 2B shows that teachers are moderately competent at organizing lessons in a logical and clear way. They also have moderate skills in selecting the right tools, materials, and resources, with a weighted mean of 3.20. However, their overall skill in competency-based instructional planning is low, with a mean of 2.11. The average for Competency-Based Instructional Planning is 2.78, which is considered moderately competent.

These results also show that TLE teachers need to improve their planning, especially in selecting and using resources. Not being skilled in choosing the right tools and materials can make lessons less engaging and less connected to real-life skills, which are important in TLE. This gap can also limit hands-on learning for students. Targeted training should help teachers find and use better resources, including industry tools and technology. Schools also need to provide enough materials and up-to-date resources.

Table 2B: **Competency-Based Instructional Planning**

Indicators	**WM**	**VI**	**Rank**
1. Prepares lesson plans aligned with MATATAG Curriculum and competencies.	3.13	Moderate	3
2. Formulates measurable, skill-based learning objectives.	2.73	Moderate	6
3. Aligns activities with intended learning outcomes.	3.18	Moderate	2
4. Selects appropriate tools, materials, and resources.	2.11	Low	8
5. Integrates safety considerations in planning.	3.00	Low	4
6. Designs differentiated learning tasks.	2.33	Low	7
7. Includes remediation and enrichment strategies.	2.96	Moderate	5
8. Organizes lessons flow logically and coherently.	3.20	Moderate	1
Average Weighted Mean	**2.78**	**Moderate**	

The results correspond with the study by Hao (2024), which states that several related concepts align with competency-based education principles, including the importance of formulating clear competency goals, aligning curriculum goals with professional standards, and employing task-driven and project-based teaching strategies. Also, it was stressed that effective competency-based instructional planning can greatly improve student learning results by concentrating on hands-on application and coordinating academic practices with market requirements.

Table 2C shows that teachers' competency in facilitating hands-on and experiential activities has a weighted mean of 3.58, which is considered high, while applying problem-solving and inquiry-based strategies has a weighted mean of 2.18, which is considered low. The average weighted mean level of effective delivery of technical and skills instruction is 3.00, with a moderately competent verbal interpretation.

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Table 2C: **Effective Delivery of Technical and Skills Instruction**

Indicators	**WM**	**VI**	**Rank**
1. Demonstrates procedures step-by-step before practice.	2.96	Moderate	6
2. Breaks complex tasks into manageable steps.	2.76	Moderate	7
3. Uses modeling and guided practice effectively.	3.02	Moderate	5
4. Facilitates hands-on and experiential activities.	3.58	High	1
5. Encourages active learner participation.	3.40	Moderate	2
6. Applies problem-solving and inquiry-based strategies.	2.18	Low	8
7. Provides immediate corrective feedback during tasks.	3.13	Moderate	4
8. Ensures mastery before progressing to new skills.	3.33	Moderate	3
Average Weighted Mean	**3.00**	**Moderate**	

Based on the findings it could be infer that TLE teachers are good at leading hands-on learning, which means they are strong in teaching practical skills. However, they are less skilled at using problem-solving and inquiry-based methods, which help students think critically and learn independently. So, while teachers do well with activities, they are not as strong at encouraging deeper thinking. The moderate rating shows there is an imbalance between practical teaching and higher-level teaching methods.

The results imply that while TLE lessons are hands-on, they may not help students build strong analytical and problem-solving skills. This could make it harder for students to use what they learn in real situations. A focus teachers- centered training should help teachers integrate inquiry and problem-solving methods to their lessons. Building these skills will create more well-rounded teaching that supports both technical and modern learning goals.

The above findings correspond with Williams Brobbey's (2022) study, which found that effective delivery of technical and skills instruction is varied, involving the availability of resources, instructors' experience, students' attitudes, and organizational strategies. By addressing these factors, educational institutions may improve the quality of technical education and better prepare learners for future careers.

Table 2D shows that teachers' competency in promoting workforce readiness and employability skills has a weighted mean of 2.62, which is moderately competent, while integrating entrepreneurial and income-generating concepts has a weighted mean of 2.29, which is low. The average weighted mean of the level of contextualization and real-world application is 2.44, with a low verbal interpretation.

Table 2D: **Contextualization and Real-World Application**

Indicators	**WM**	**VI**	**Rank**
1. Relates lessons to local livelihood opportunities.	2.58	Low	3
2. Uses real-life examples and practical scenarios.	2.49	Low	4
3. Integrates entrepreneurial and income-generating concepts.	2.29	Low	8
4. Uses locally available and sustainable materials.	2.40	Low	6
5. Connects competencies to community needs.	2.60	Low	2
6. Encourages application of skills beyond the classroom.	2.33	Low	7
7.Discusses industry relevance of lessons.	2.42	Low	5
8.Promotes workforce readiness and employability skills.	2.62	Moderate	1
Average Weighted Mean	**2.44**	**Low**	

Based on the table presented, shows that TLE teachers are moderately skilled at helping students get ready for work and learn job skills. However, they are less skilled at teaching entrepreneurship and income-generating ideas, which means students may not learn enough about self-employment and innovation. Overall, teachers have limited ability to connect lessons to real-world situations, especially when it comes to encouraging an entrepreneurial mindset.

These results imply that while teachers help students build basic job skills, they need to do more to teach entrepreneurship and income-generating ideas. This can be improved through targeted training, industry experience, and updating the curriculum to focus on real-world use, entrepreneurship, and innovation. By improving teachers' skills in making lessons relevant, TLE programs can better prepare students for different careers and help them develop practical skills for today's economy.

Conversely, the low rating of contextualization and real-life scenarios was emphasized in the study of Alumia (2025), that embedding lessons in relevant settings allows students to better connect with and apply their knowledge. This promotes deeper learning and improves students' ability to transfer skills and knowledge to real-life situations. Also, the key role of contextualization and real-life application is in improving the effectiveness of education. By initiating learning that is relevant and engaging, educators can nurture deeper understanding and skill development, eventually preparing students for success in their personal and professional lives.

Table 2E shows that teachers' competency in using performance-based assessments has a weighted mean of 3.00, which is moderately competent, while encouraging self- and peer-assessment has a weighted mean of 2.33, which is low. The average weighted mean level of assessment for knowledge and technical skills is 2.74, with a moderate verbal interpretation.

The research shows that TLE teachers are moderately skilled at using performance-based assessments, meaning they can usually assess students' technical skills and practical work well. This is important for competency-based education. However, they are less skilled at encouraging students to assess themselves or each other, which limits reflection, critical thinking, and teamwork. Overall, while teachers can assess technical skills, they do not focus enough on participatory and reflective assessment methods.

Table 2E: **Assessment of Knowledge and Technical Skills**

Indicators	WM	VI	Rank
1. Uses performance-based assessments (demonstrations, outputs).	3.00	Moderate	
2. Develops rubrics aligned with competency standards.	2.91	Moderate	
3. Assesses both theoretical knowledge and practical skills.	2.84	Moderate	
4. Provides timely and constructive feedback.	2.60	Low	
5. Evaluates outputs objectively and consistently.	2.82	Moderate	
6. Encourages self- and peer-assessment.	2.33	Low	
7. Maintains systematic records of performance.	2.64	Moderate	
8. Uses assessment results to improve instruction.	2.80	Moderate	
Average Weighted Mean	**2.74**	**Moderate**	

These findings suggest that training should help teachers improve their assessment skills, especially by using self- and peer-assessment alongside performance-based methods. This will help teachers not only assess technical skills but also support students' critical thinking, independence, and teamwork, making TLE teaching more effective overall.

The result links and similar to the study findings of Lina (2024) that teachers perceived themselves as moderately highly competent. Also, it was suggested that while teachers demonstrate moderate to high competency in various aspects of assessment and reporting, they still need to continuously improve their knowledge and skills through professional development programs, especially in areas like collaborating with colleagues to share assessment methods and leading colleagues in using assessment data effectively.

Table 2F shows that teachers' competency in supervising learners to prevent accidents has a weighted mean of 3.40, which is moderately competent, while implementing tool storage and inventory systems is low with a weighted mean of 2.20. The average weighted mean for the level of workshop and classroom management in skills training is 3.06, denoting a moderately competent verbal interpretation.

The findings reveal that TLE teachers are moderately skilled at managing workshops and classrooms, especially in keeping students safe and preventing accidents. This means they can create a safe learning space and use their knowledge in practice. However, they are less skilled at organizing and tracking tools and materials, suggesting they may not always keep the workshop well-organized. While teachers focus on safety, they may need better systems for resource management.

These results imply that training should help teachers improve both classroom management and how they organize resources. Programs could include lessons on inventory management, tool storage, and organizing workshops, along with ongoing safety training. The goal is to help teachers keep students safe and also maintain a well-organized and efficient learning space, which will improve skills-based teaching in TLE.

Table 2F: **Workshop and Classroom Management for Skills Training**

Indicators	WM	VI	Rank
1. Establishes and enforces safety procedures.	2.96	Moderate	5
2. Demonstrates proper handling of tools and equipment.	2.80	Moderate	6
3. Maintain cleanliness and organization of workspaces.	3.38	Moderate	2
4. Supervises learners to prevent accidents.	3.40	Moderate	1
5. Promotes responsible use of materials.	3.38	Moderate	2
6. Manages time effectively during practical tasks.	3.33	Moderate	3
7. Implements tool storage and inventory systems.	2.20	Low	7
8. Creates a productive and orderly learning environment.	3.11	Moderate	4
Average Weighted Mean	**3.06**	**Moderate**	

Herein, the results link with the study of (Olawoyin, 2019), which states that the effectiveness of teaching largely depends on how well the classroom is managed. To improve classroom management, teachers in vocational and technical education should apply strategies such as establishing clear routines and procedures, addressing disruptive and off-task behavior, using appropriate lesson strategies and delivery methods, and demonstrating positive teacher behavior. Consequently, it is recommended that

stakeholders in Vocational and Technical Education promote awareness through orientation or training programs to equip teachers with effective classroom management practices, thereby supporting the attainment of educational goals.

Table 2G shows that teachers' competency in utilizing digital platforms for assessment and monitoring obtain a weighted mean of 2.62 is moderately competent, while introducing modern tools and industry technologies and using ICT tools to enhance instruction are low with a weighted mean of 2.20. The average weighted mean for the competency level in integrating technology and modern tools is 2.37, with a low verbal interpretation.

Table 2G: **Integration of Technology and Modern Tools**

Indicators	WM	VI	Rank
1. Uses ICT tools to enhance instruction.	2.20	Low	6
2. Integrates multimedia resources for better understanding.	2.24	Low	5
3. Introducing modern tools and industry technologies.	2.20	Low	6
4. Guides learners in safe and responsible technology use.	2.40	Moderate	4
5. Encourages innovative and creative outputs.	2.44	Low	3
6. Utilizes digital platforms for assessment and monitoring.	2.62	Moderate	1
7. Adapts to emerging educational technologies.	2.47	Low	2
8. Promotes digital literacy relevant to TLE.	2.47	Low	2
Average Weighted Mean	**2.37**	**Low**	

Based on the findings we could infer that teachers are moderately skilled at using digital platforms for assessment and monitoring, so they can handle basic technology tasks for checking student progress. However, they are less skilled at bringing in new tools and using ICT to improve teaching, which means they have trouble fully using technology in their lessons. Hence, the overall average shows there is a need to improve how teachers use technology in more meaningful and up-to-date ways.

The above findings imply that there is a strong need for ongoing training in advanced ICT use and modern tools for teaching. Training should cover more than just basic computer skills and focus on using technology for teaching, like interactive lessons and simulations that match industry needs. Schools should also provide updated technology, technical help, and mentoring. Improving teachers' skills in these areas will make lessons more engaging and help students build the tech skills they need for future jobs.

The slightly competency of teachers as a gap in content pedagogical competency of teachers linked with the study of Gbadegbe et al. (2023) where it was stressed the importance of integration of technology into Technical and Vocational Education and Training (TVET) using the TPACK framework. It finds that teachers' mastery of technological tools greatly influences their ability to integrate technology, which in turn shapes more effective teaching approaches and enhances students' practical skill development. Additionally, technology is significantly linked to teachers' technical knowledge and skills, improving their subject expertise. The study emphasizes the importance of providing adequate infrastructure, equipment, and training to support teachers in effectively using technology to deliver high-quality TVET instruction.

Table 2H shows that teachers' competency in extending remediation for struggling learners has a weighted mean of 3.31, which is moderately competent, while encouraging peer mentoring and collaboration has a weighted mean of 2.60, which is low. The average weighted mean of the competency level in Differentiated Instruction and Learner Support is 2.84, with a low verbal interpretation.

Table 2H: **Differentiated Instruction and Learner Support**

Indicators	WM	VI	Rank
1. Adapts instruction based on learners' skill levels.	2.98	Moderate	
2. Provides scaffolded support during tasks.	2.78	Moderate	
3. Designs varied activities for different learning styles.	2.64	Moderate	
4. Extends remediation for struggling learners.	3.31	Moderate	
5. Provides enrichment for advanced learners.	2.93	Moderate	
6. Encourages peer mentoring and collaboration.	2.60	Low	
7. Uses flexible grouping strategies.	2.62	Moderate	
8. Promotes inclusive participation in all activities.	2.98	Moderate	
Average Weighted Mean	**2.84**	**Moderate**	

The findings show that teachers are moderately good at helping students who need extra support, so they can address learning gaps. However, they are less skilled at encouraging students to work together and help each other, which means collaborative learning is not used much. While teachers can help individual students, they do not make the most of peer learning, and overall, teamwork is not a strong part of their teaching.

These results imply a need to strengthen teachers' capacity in facilitating peer mentoring and collaborative learning environments. Professional development programs show that teachers need more training in leading peer mentoring and group learning. Training should include methods such as group work, peer tutoring, and team problem-solving. Schools could also set up formal peer support systems and encourage teamwork in class. Building these skills will make learning more interactive and help students develop social and teamwork abilities. It allows teachers to address diverse learner needs and adapt instruction to various learning styles, aligning with the goals of the MATATAG curriculum. However, its implementation is challenged by limited resources, large class sizes, insufficient planning time, and a lack of professional development, underscoring the need for stronger institutional support.

The findings confirms the study of Goyibovaa (2025) emphasized differentiated instruction as an approach that adapts teaching strategies, content, and assessment to meet learners' diverse needs. It promotes an inclusive classroom by recognizing differences in students' abilities, interests, and backgrounds, while encouraging flexible grouping and varied instructional methods. Continuous assessment guides instruction, helping address learning gaps and enhance engagement and performance. Hence, effective implementation relies on teachers' skills and ongoing professional development.

Table 2I shows that teachers' competency in promoting safety consciousness and risk awareness weighted mean of 3.56 is moderately competent, and in developing professional behavior and work ethics weighted mean of 2.96 is also moderately competent. The average weighted mean of the competency level in integration of work values and professional ethics is 2.84, with moderately competent verbal interpretation.

The findings show that teachers are moderately skilled at teaching safety and risk awareness, which means they work to keep learning environments safe. They are also moderately good at promoting professional behavior and work ethics, helping students learn proper conduct. While teachers include work values and ethics in their lessons, there is still room to make these lessons more consistent and practical for real-life situations.

Table 2I: **Integration of Work Values and Professional Ethics**

Indicators	**WM**	**VI**	**Rank**
1. Promotes discipline and responsibility in tasks.	3.36	Moderate	3
2. Encourages teamwork and collaboration.	3.33	Moderate	4
3. Instills productivity and quality workmanship.	3.27	Moderate	5
4. Emphasizes honesty and integrity in outputs.	3.49	Moderate	2
5. Teaches respect for tools, materials, and workplace rules.	3.27	Moderate	5
6.Encourages environmental responsibility.	3.49	Moderate	2
7. Promotes safety consciousness and risk awareness.	3.56	Moderate	1
8. Develops professional behavior and work ethics.	2.96	Moderate	6
Average Weighted Mean	**3.39**	**Moderate**	

These results show that teachers should keep improving how they teach safety and ethics. Training should help teachers connect safety and ethical lessons to real-world and industry situations. Schools can also support this by having clear policies and programs that build a culture of safety and responsibility. Building these skills will help students become both skilled and responsible, which is important for future jobs and citizenship.

Based on the above findings, teachers are moderately competent in the integration of work values and professional ethics links with the study of Osia (2024) that teachers who exhibit strong work ethics tend to demonstrate more positive behaviors and attitudes toward their profession, colleagues, and students. A significant relationship was identified between key aspects of work ethics such as commitment to the profession, professional competence, responsibility to students, engagement with the school community, and ethical use of technology and teachers' behavior and attitudes. The study concludes that work ethics play a crucial role in shaping teachers' professional growth, classroom management practices, and ethical conduct. It further recommends that teachers implement professional development plans that prioritize work ethics to support continuous professional improvement.

Table 2I shows that teachers' competency in incorporating learners' experiences and backgrounds has a weighted mean of 2.73, indicating moderate competence, while integrating community-based examples and problems obtain a weighted mean of 2.20 and verbally interpreted a low. The average weighted mean of the competency level in integration of work values and professional ethics is 2.84, with low verbal interpretation.

The findings infer that TLE teachers demonstrate a moderate level of competency in integrating work values and professional ethics,

particularly in incorporating learners' experiences and backgrounds, which suggests an awareness of the importance of contextualizing instruction based on students' prior knowledge and real-life situations. This reflects a developing capacity to make learning more meaningful and relevant to learners. However, the comparatively lower competence in integrating community-based examples and problems indicates a limitation in extending instruction beyond the classroom context into broader community and real-world applications. This suggests that while teachers can relate lessons to individual learner experiences, they may not fully utilize community contexts as a resource for enriching instruction and reinforcing work values and ethical practices.

Table 2J: **Reflective Practice and Professional Growth**

Indicators	**WM**	**VI**	**Rank**
1. Designs tasks relevant to local industries and livelihoods.	2.36	Low	4
2. Uses locally available tools and materials.	2.62	Moderate	2
3. Integrates community-based examples and problems.	2.20	Low	6
4. Aligns tasks with local employment opportunities.	2.36	Low	4
5. Incorporates learners' experiences and backgrounds.	2.73	Moderate	1
6. Promotes local skills, products, and services.	2.60	Low	3
7. Adjusts activities to community needs and resources.	2.36	Low	4
8. Encourages community engagement and relevance.	2.33	Low	5
Average Weighted Mean	**2.46**	**Low**	

The implication of this finding is that there is a need for strategic interventions that enhance teachers' content and pedagogical competencies in contextualization and community linkage. Professional development programs may focus on community-based teaching approaches, contextualized learning strategies, and the integration of real-life ethical scenarios into instruction. Strengthening partnerships with local industries and communities can also support teachers in designing more authentic and value-laden learning experiences. The desired outcome is to develop teachers who are not only capable of integrating learners' personal experiences but are also proficient in embedding community realities and professional ethics into TLE instruction, thereby fostering socially responsible, value-oriented, and work-ready learners.

Table 2K shows the summary of the Content and Pedagogical Competency Level of TLE Teachers that has an Average Weighted Mean of 2.77, interpreted as Moderately Competent. The highest competency is the Integration of Work Values and Professional Ethics with a weighted mean of 3.39 interpreted as Moderately Competent, followed by Workshop and Classroom Management for Skills Training with a mean of 3.06 and Instruction with a mean of 3.00.

Conversely, the lowest-performing indicators were identified as Integration of Technology and Modern Tools with a weighted mean of 2.37 interpreted as Slightly Competent, and Contextualization and Real-World Application with a mean of 2.44 and interpretation of slightly competent.

Table 2K: Summary of the Content and Pedagogical Competency Level of TLE Teachers

Indicators	**WM**	**VI**	**Rank**
1. Content Mastery and Technical Expertise	2.64	Moderate	7
2. Competency-Based Instructional Planning	2.78	Moderate	5
3. Effective Delivery of Technical and Skills Instruction	3.00	Moderate	3
4. Contextualization and Real-World Application	2.44	Low	9
5. Assessment of Knowledge and Technical Skills	2.74	Moderate	6
6. Workshop and Classroom Management for Skills Training	3.06	Moderate	2
7. Integration of Technology and Modern Tools	2.37	Low	10
8. Differentiated Instruction and Learner Support	2.84	Moderate	4
9. Integration of Work Values and Professional Ethics	3.39	Moderate	1
10. Reflective Practice and Professional Growth	2.46	Low	8
Average Weighted Mean	**2.77**	**Moderate**	

Based on the above findings the TLE teachers demonstrate an overall moderate level of competence in both content and pedagogical areas. Their strengths are more evident in value integration, professional ethics, classroom management, and

instructional delivery, indicating that teachers are generally more confident in foundational teaching practices and character formation aspects of instruction. However, the relatively lower scores in integration of technology, modern tools, contextualization, and real-world application imply that teachers are less proficient in applying contemporary, industry-aligned, and experiential approaches in TLE instruction.

This pattern implies a need for targeted professional development programs focusing on technology integration, contextualized teaching, and real-world application strategies to strengthen teachers' instructional effectiveness. Enhancing these weaker areas may help bridge the gap between traditional teaching practices and the demands of 21st-century skills-based education, ultimately improving the relevance and quality of TLE instruction. Significant Relationship Between the Profile and Content and Pedagogical Competency Level of Technology and Livelihood Education Teachers

High-quality TLE teaching depends on both teachers' skills and their backgrounds. Studying how these factors are related helps us understand how teachers' experiences affect their teaching abilities. This study looks at the links between teacher profiles, content knowledge, and teaching skills to guide targeted professional development and improve teaching.

Table 3A shows a significant relationship between the demographic profile in terms of length of service and educational attainment and teachers' content and pedagogical competency.

The results reveal that the length of service has a mixed relationship with the different content and pedagogical competency indicators. Specifically, there is a significant relationship between length of service and the following competencies, such as Effective Delivery of Technical and Skills Instruction with r- value of 0.482 and p-value of 0.001; Contextualization and Real-World Application with r-value 0.354, p-value 0.016, and Integration of Technology and Modern Tools with r-value 0.394, p- value 0.007.

Table 3A: **Significant Relationship Between Profile and Content and Pedagogical Competency Level**

PROFILE	**CONTENT AND PEDAGOGICAL INDICATORS**	**p-value**	**Rule**	**Decision**	**VI**
LENGTH OF SERVICE	Content Mastery and Technical Expertise	0.894	**Reject Ho if p-value is less than or equal to alpha (0.05)**	**Failed to Reject Ho**	NS
	Competency-Based Instructional Planning	1.717		**Reject Ho**	NS
	Effective Delivery of Technical and Skills Instruction	0.001		**Failed to Reject Ho**	S
	Contextualization and Real-World Application	0.016		**Reject Ho**	S
	Assessment of Knowledge and Technical Skills	2.139		**Failed to Reject Ho**	NS
	Workshop and Classroom Management for Skills Training	6.275		**Failed to Reject Ho**	NS
	Integration of Technology and Modern Tools	0.007		v	S
	Differentiated Instruction and Learner Support	7.275		**Failed to Reject Ho**	NS
	Integration of Work Values and Professional Ethics	0.491		**Failed to Reject Ho**	NS
	Reflective Practice and Professional Growth	0.970		**Failed to Reject Ho**	NS
	OVERALL	0.090			**NS**
EDUCATIONAL ATTAINMENT	Content Mastery and Technical Expertise	0.648		**Failed to Reject Ho**	NS
	Competency-Based Instructional Planning	3.160		**Failed to Reject Ho**	NS
	Effective Delivery of Technical and Skills Instruction	0.279		**Failed to Reject Ho**	NS
	Contextualization and Real-World Application	0.040		**Reject Ho**	S
	Assessment of Knowledge and Technical Skills	0.003		**Reject Ho**	S
	Workshop and Classroom Management for Skills Training	6.275		**Failed to Reject Ho**	NS
	Integration of Technology and Modern Tools	0.000		**Reject Ho**	S
	Differentiated Instruction and Learner Support	0.003		**Reject Ho**	S
	Integration of Work Values and Professional Ethics	0.804		**Failed to Reject Ho**	NS
	Reflective Practice and Professional Growth	0.025		**Reject Ho**	S
	OVERALL	0.030		**Reject Ho**	**S**

Legend: If $p \leq 0.05$- (S)Significant relationship, and if $p > 0.05$ – (NS)Not significant relationship

Moreover, the overall r-value of 0.595 and p-value of 0.090 indicate that there is no significant relationship between length of service and overall competency. This indicates that while experience may influence certain teaching skills, it is not a strong determinant of overall content and pedagogical competence.

The findings suggest that as teachers gain more experience, they get better at teaching, making lessons relevant, and using technology in their classes.

However, no significant relationship was found between length of service and the remaining indicators, including content mastery, instructional planning, assessment, classroom management, differentiated instruction, work values integration, and reflective practice. This suggests that experience alone does not necessarily guarantee improvement in these areas.

In the aspect educational attainment is significantly related to several competency indicators, namely Contextualization and Real-World Application with r-value of 0.307, p-value of 0.040; Assessment of Knowledge and Technical Skills r- value 0.425, p-value 0.003; Integration of Technology and Modern Tools r-value 0.501, p-value 0.000; Differentiated Instruction and Learner Support r- value 0.426, p-value 0.003; Reflective Practice and Professional Growth r-value 0.333, p-value 0.025

Importantly, the overall result r- value 0.714, p-value 0.030 shows a significant relationship, suggesting that educational attainment is a key factor influencing overall content and pedagogical competency of teachers.

These results show that teachers with higher education levels are usually better at connecting lessons to real life, assessing students, using technology, meeting different student needs, and reflecting on their teaching.

On the other hand, no significant relationship was observed between educational attainment and competencies such as content mastery, instructional planning, instructional delivery, classroom management, and integration of work values and ethics. This implies that higher educational attainment does not automatically translate to proficiency in all teaching competencies.

Table 3B shows a significant relationship between the demographic profile in terms of specialization and relevant training and teachers' content and pedagogical competency

The results indicate that specialization has no significant relationship with any of the content and pedagogical competency indicators. All computed p-values are greater than 0.05, including the overall r-value (0.139, p-value 0.721), confirming the absence of a statistically significant relationship.

This result means that a teacher's area of specialization does not have a big effect on their skills in content knowledge, lesson planning, teaching, assessment, classroom management, technology use, differentiated instruction, teaching values, or reflective practice.

Even though some indicators show relatively moderate correlation coefficients (e.g., Assessment of Knowledge and Technical Skills, r = 0.653), the lack of statistical significance implies that these relationships may have occurred by chance. Therefore, specialization alone is not a strong determinant of teachers' content and pedagogical competencies.

In the context of relevant training, findings reveal that it has a limited but notable influence on certain competencies. Among the indicators, only the Differentiated Instruction and Learner Support competency shows an r-value of 0.400 and a p-value of 0.006, indicating a significant relationship and suggesting that teachers who have attended relevant training programs are better able to address diverse learner needs and provide appropriate instructional support.

All other indicators, including content mastery, instructional planning, teaching delivery, contextualization, assessment, classroom management, technology integration, work values integration, and reflective practice, show no significant relationship with relevant training, as their p-values exceed 0.05.

However, the overall r-value of 0.931 and p-value of 0.000 show a very strong link between relevant training and overall teaching skills. This means that even if training does not always improve every skill, it greatly boosts teachers' overall abilities.

The result of the study aligns with the study of (Bulilan, 2022) findings showed that the faculty met the minimum education requirement and their competencies were rated as very satisfactory. Also, there was a positive correlation between teaching competencies and educational attainment, which means that educational attainment is a factor in their teaching competencies.

Table 3B: **Significant Relationship Between Profile and Content and Pedagogical Competency Level**

PROFILE	**CONTENT AND PEDAGOGICAL INDICATORS**	**p-value**	**Rule**	**Decision**	**VI**
SPECIALIZATION	Content Mastery and Technical Expertise	0.105		Failed to reject Ho	NS
	Competency-Based Instructional Planning	0.554		Failed to reject Ho	NS
	Effective Delivery of Technical and Skills Instruction	0.449		Failed to reject Ho	NS
	Contextualization and Real-World Application	0.240		Failed to reject Ho	NS
	Assessment of Knowledge and Technical Skills	0.669		Failed to reject Ho	NS
	Workshop and Classroom Management for Skills Training	0.733		Failed to reject Ho	NS

	Integration of Technology and Modern Tools	0.257		Failed to reject Ho	NS
	Differentiated Instruction and Learner Support	0.273	**Reject Ho if p-value is less than or equal to alpha (0.05)**	Failed to reject Ho	NS
	Integration of Work Values and Professional Ethics	0.312		Failed to reject Ho	NS
	Reflective Practice and Professional Growth	0.070		Failed to reject Ho	NS
	OVERALL	**0.721**		**Failed to reject Ho**	**NS**
RELEVANT TRAINING	Content Mastery and Technical Expertise	0.986		Failed to reject Ho	NS
	Competency-Based Instructional Planning	0.742		Failed to reject Ho	NS
	Effective Delivery of Technical and Skills Instruction	0.449		Failed to reject Ho	NS
	Contextualization and Real-World Application	0.422		Failed to reject Ho	NS
	Assessment of Knowledge and Technical Skills	0.787		Failed to reject Ho	NS
	Workshop and Classroom Management for Skills Training	0.065		Failed to reject Ho	NS
	Integration of Technology and Modern Tools	0.467		Reject Ho	NS
	Differentiated Instruction and Learner Support	0.006		Failed to reject Ho	S
	Integration of Work Values and Professional Ethics	0.352		Failed to reject Ho	NS
	Reflective Practice and Professional Growth	0.364		Failed to reject Ho	NS
	OVERALL	**0.000**		**Reject Ho**	**S**

In summary, these findings imply that experience alone (length of service) is insufficient to ensure comprehensive development of teachers' content and pedagogical competencies, as it only influences selected aspects of instruction. On the other hand, educational attainment plays a more critical role in shaping teachers' overall competency, particularly in areas requiring higher-order thinking, innovation, and adaptability.

Therefore, strategic interventions should prioritize continuous professional development and advanced academic training, such as graduate studies, certifications, and specialized training programs. Interventions may also include capacity-building programs focused on contextualization, assessment literacy, technology integration, and differentiated instruction, especially for teachers with lower educational attainment. Additionally, mentoring and coaching programs can be designed to complement teaching experience with updated pedagogical knowledge.

Challenges Encountered of Technology and Livelihood Education Teachers

In the previous findings, it can be inferred that specialization alone is not a determining factor in enhancing teachers' competencies, and relying solely on teachers' field of expertise may not guarantee effective teaching performance. On the other hand, although individual competencies may not always show significant improvement, relevant training cumulatively contributes to overall competency development, particularly in improving teachers' capacity to support diverse learners.

The findings imply that educational institutions should shift their focus from specialization to continuous professional development, particularly through relevant and sustained training programs. There is a need to design comprehensive and needs-based training interventions that address multiple competency areas rather than isolated skills. Additionally, since training significantly enhances overall competency, schools should encourage regular participation in professional development activities, especially those that strengthen differentiated instruction and learner support. This also highlights the importance of institutional support, funding, and access to quality training programs to ensure continuous improvement in teaching effectiveness.

Content and Pedagogical Competency

Based on the written comments and formal interviews with the participants, all has similar mentioned challenges such as limited mastery across multiple specializations. TLE includes areas like ICT, Agriculture, Industrial Arts, and Home Economics, and teachers are often required to teach beyond their field of expertise. This can affect the depth and accuracy of content delivery.

Another participant mentioned the lack of updated training and industry exposure. Some teachers may not be fully aligned with current industry standards, tools, and practices, making it difficult to provide relevant and up-to-date instruction.

There is also the challenge of limited resources and facilities, such as insufficient tools, equipment, or laboratory spaces. This restricts students' opportunities to practice and apply what they learn.

Additionally, assessing students' practical skills can be difficult. TLE Teachers find it challenging to design appropriate performance-based assessments and ensure fair and accurate evaluation of competencies.

Time constraints and large class sizes further add to the difficulty, as managing hands-on activities and ensuring student safety require more time, attention, and organization.

In terms of pedagogy, teachers struggle with delivering hands-on, skills-based learning effectively. TLE requires demonstrations, workshops, and practical applications, but not all teachers are equally skilled in using varied teaching strategies such as project-based learning, differentiated instruction, or competency-based assessment.

TLE teachers face several challenges in teaching well, especially in mastering content and using good teaching methods. These issues can affect how well students learn practical skills. This study looks at the challenges TLE teachers face in these areas to help improve teaching and guide future training programs.

The findings show that TLE teachers have challenges in both content and teaching skills, with most skills rated as moderate or slight. Problems include not using enough current industry practices, new technologies, or real-world examples, and having trouble picking the right materials, using different teaching methods, and connecting lessons to business or community topics. Teachers also struggle with using ICT, encouraging student-led assessments, managing workshop resources, and promoting teamwork. These problems are made worse by a lack of resources, limited training, and weak support from schools.

These findings suggest that TLE teachers have basic teaching skills but lack advanced and innovative abilities needed for more effective and relevant lessons. As a result, teaching quality may suffer and students may not be fully prepared for real jobs. This shows the need for focused training, better access to tools and resources, and stronger support from schools to improve teaching and make sure lessons match current industry and skill needs.

Strategic Intervention Developed for Content and Pedagogical Competency of Technology and Livelihood Education Teachers

The content and pedagogical competency of Technology and Livelihood Education (TLE) teachers is essential to ensure effective instruction and the development of learners' practical skills. Addressing existing gaps in these competencies requires well-designed and responsive interventions. Thus, this study aims to develop a strategic intervention to strengthen the content knowledge and pedagogical skills of TLE teachers, ultimately improving instructional quality and student learning outcomes.

This intervention output is designed to yield improved teacher performance across key areas, including content mastery, instructional planning, delivery of technical skills, contextualization, assessment practices, classroom and workshop management, integration of technology, differentiated instruction, and the incorporation of work values and professional ethics. It also aims to strengthen teachers' capacity to integrate industry-based practices, inquiry-based strategies, and learner-centered approaches into their instruction.

Furthermore, the initiative is expected to result in enhanced instructional quality, characterized by more relevant, engaging, and skills-oriented learning experiences for students. It also promotes continuous professional growth among teachers through sustained training, mentoring, and reflective practice. Ultimately, the output of the strategic intervention is the development of highly competent, adaptive, and industry-responsive TLE teachers who are capable of delivering effective instruction that aligns with 21st-century skills and workforce demands.

In essence, the intervention serves as a practical and actionable guide for improving both content and pedagogical competencies, ensuring long-term impact on teaching effectiveness and student learning.

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Chapter 4

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of findings on how the study was conducted and the results obtained. Conclusions were drawn from these outcomes, from which recommendations were proposed.

Summary

This study explored the pedagogical content competency level of TLE Teachers in Bula District, Division of Camarines Sur. It was determined to assess the teachers' competency level in the content-pedagogical aspect and the significant relationship with the teachers' profiles. Based on the identified outcomes of assessing competency levels and significant relationships, the study establishes a strategic intervention to address the gap.

The descriptive- correlational method of research was used. There are forty-five (45) TLE Teachers respondents within Bula District, who are the main respondents of the study. The data were statistically analyzed using the weighted mean and Pearson's correlation.

Findings

The following summary of findings was revealed:

The demographic profile of the 45 respondents indicates that most are in their mid-career stage, with 19 teachers (42.22%) having 7–10 years of service. This is followed by 9 teachers (20.00%), each with 1–3 years or 4–6 years of experience, while 6 teachers (13.33%) have more than 10 years of service, and only 2 teachers (4.44%) have less than 1 year of experience.

In terms of educational attainment, the majority are bachelor's degree holders (35 or 77.78%), while 9 teachers (20.00%) have earned a Master's degree and only 1 teacher (2.22%) holds a Doctorate degree.

Regarding specialization, the largest group belongs to Food and Consumer Services (17 or 37.78%), followed by Information and Communication Technology (13 or 28.89%), Agriculture and Fishery Arts (10 or 22.22%), and Industrial Arts (5 or 11.11%).

Moreover, most respondents have attended relevant training, with 41 teachers (91.11%) reporting participation, while only 4 teachers (8.89%) have not. Overall, the profile reflects a predominantly experienced and trained group of teachers with diverse specializations, though with limited advanced academic qualifications.

The content and pedagogical competency level of teachers, along with a.) Content Mastery and Technical Expertise with an average weighted mean of 2.64, verbally interpreted as moderately competent, b) Competency-Based Instructional Planning, average weighted mean of 2.78 reflects a moderately competent c.) Effective Delivery of Technical and Skills Instruction: the average weighted mean of 3.00 verbally interpreted as moderately competent; d.) Contextualization and Real-World Application with an average weighted mean of 2.44 interpreted as low; e.) Assessment of Knowledge and Technical Skills obtained an average weighted mean of 2.74, interpreted as moderately competent; f.) Workshop and Classroom Management for Skills Training with an average weighted mean of 3.06 signifies a moderately competent; g.) Integration of Technology and Modern Tools having an average weighted mean of 2.37 indicates a low; h.) Differentiated Instruction and Learner Support with an average weighted mean of 2.84 indicates a moderately competent; i.) Integration of Work Values and Professional Ethics average weighted mean of 3.39 indicates a moderately competent level of competency; and j.) Reflective Practice and Professional Growth with an average weighted mean of 2.46 and verbally interpreted as low.

The study found that teachers in Technology and Livelihood Education (TLE) face significant challenges in both content and pedagogical competence, with most competencies only at moderate to slight levels. Key difficulties include limited integration of updated industry practices, emerging technologies, and real-world applications, as well as challenges in selecting appropriate instructional materials, applying differentiated and inquiry-based strategies, and contextualizing lessons to entrepreneurial and community settings. Teachers also struggle with effective ICT integration, learner-centered assessment, workshop resource management, and collaborative practices such as peer mentoring. These issues are further aggravated by inadequate resources, limited professional development opportunities, and weak institutional support.

The study found that there are three indicators that show a significant relationship, namely: Effective Delivery of Technical and Skills Instruction ($r = 0.482$, $p = 0.001$), Contextualization and Real-World Application ($r = 0.354$, $p = 0.016$), and Integration of Technology and Modern Tools ($r = 0.394$, $p = 0.007$). All other indicators, including the overall competency ($p = 0.090$), are not significantly related. The aspect of educational attainment demonstrates a greater and more consistent influence on teachers' competencies. Significant relationships are found in several areas, including Contextualization and Real-World Application ($p = 0.040$), Assessment of Knowledge and Technical Skills ($p = 0.003$), Integration of Technology and Modern Tools ($p = 0.000$), Differentiated Instruction and Learner Support ($p = 0.003$), and Reflective Practice and Professional Growth ($p = 0.025$). Moreover, the overall result ($r = 0.714$, $p = 0.030$) indicates a significant relationship.

In terms of specialization, there is no significant relationship with any of the content and pedagogical competency indicators. All areas, including Content Mastery, Instructional Planning, Teaching Delivery, and Reflective Practice, yielded non-significant results, including the overall competency ($r = 0.139$, $p = 0.721$).

On the other hand, relevant training shows a mixed influence on competencies. Most indicators are not significantly related, except for Differentiated Instruction and Learner Support ($r = 0.400$, $p = 0.006$), which indicates that training contributes to teachers' ability to address diverse learner needs. Notably, the overall result ($r = 0.931$, $p = 0.000$) reveals a highly significant relationship.

Therefore, there is sufficient evidence to reject the null hypothesis that there is no significant relationship between TLE teachers' demographic profile and their content pedagogical competency level.

A strategic intervention helps enhance teachers' content and pedagogical competency in TLE by addressing key gaps identified in the findings. It improves alignment with industry standards and real-world applications, strengthens instructional planning and resource use, and enhances higher-order teaching strategies such as problem-solving and inquiry-based learning. It also supports better lesson contextualization through the integration of entrepreneurship and community-based applications. Furthermore, it develops teachers' skills in assessment, classroom management, and technology integration. Overall, because relevant training significantly influences competency, a well-designed strategic intervention serves as a focused, data-driven approach to improve teaching effectiveness and ensure more relevant, learner-centered, and skills-oriented instruction.

Conclusions

Based on the findings of this study the following conclusions are drawn:

The respondents are predominantly mid-career teachers with substantial teaching experience, particularly within the 7–10 years range, indicating a stable and professionally grounded workforce. Most are bachelor's degree holders, with limited representation in advanced academic qualifications, suggesting a need for further graduate studies. The group demonstrates diverse specialization across TLE areas, with stronger representation in Food and Consumer Services and ICT. Additionally, the majority have attended relevant training, reflecting active professional engagement. Overall, the profile shows an experienced and trained teaching force, but with a need to strengthen higher educational attainment.

Teachers generally exhibit a moderate level of competency across most content and pedagogical areas, indicating adequate but not optimal teaching performance. Strengths are evident in teaching delivery, classroom management, and integration of work values. However, critical gaps are observed in contextualization, technology integration, and reflective practice, which are rated low. This suggests that while teachers can manage instruction effectively, they need improvement in innovation, real-world application, and continuous professional growth to enhance overall teaching effectiveness.

TLE teachers face significant and interconnected challenges that limit their competency development. These include difficulties in integrating industry practices, emerging technologies, and real-world applications, as well as in applying learner-centered and differentiated strategies. Additional constraints such as inadequate resources, limited training opportunities, and weak institutional support further hinder effective teaching. Overall, these challenges highlight the need for systemic support and continuous professional development to improve instructional quality.

The findings confirm that certain demographic factors significantly influence teachers' competencies. Teaching experience shows limited but specific influence, while educational attainment has a strong and consistent impact across several competency areas. Specialization does not significantly affect competency levels. Relevant training shows mixed effects on individual competencies but demonstrates a highly significant relationship with overall competency. Therefore, the null hypothesis is rejected, confirming that demographic factors particularly educational attainment and training play a vital role in shaping teachers' content and pedagogical competency.

A well-designed strategic intervention is essential to address identified competency gaps among TLE teachers. Such an approach enhances alignment with industry standards, improves instructional planning, and promotes learner-centered and inquiry-based teaching strategies. It also strengthens skills in assessment, classroom management, and technology integration. Given the strong influence of training on competency, a structured and data-driven intervention program is crucial in improving teaching effectiveness and ensuring more relevant, skills-oriented, and learner-centered instruction.

Recommendations

Based on the findings of this research, it is recommended that:

1. It is recommended that schools and education authorities encourage and support teachers in pursuing advanced academic qualifications such as master's and doctoral degrees through scholarships, study leave, or incentives. Since most teachers are in their mid-career stage, continuous professional development programs should be tailored to sustain and further enhance their competencies. Additionally, mentoring programs may be established to support less experienced teachers and maximize the expertise of more experienced ones.
2. It is recommended to design targeted training programs focusing on areas with lower competency levels, particularly contextualization and real-world application, integration of technology, and reflective practice. Schools should also provide adequate instructional resources, updated tools, and access to modern technologies to support effective teaching. Moreover, capacity-building activities such as workshops, demonstrations, and coaching sessions should be conducted to strengthen both content mastery and pedagogical skills.
3. It is recommended that educational institutions strengthen institutional support systems by providing sufficient resources, updated equipment, and access to industry-based materials. Regular industry immersion, partnerships, and hands-on training should be implemented to improve teachers' exposure to current practices. Furthermore, continuous professional development focusing on ICT integration, differentiated instruction, and learner-centered strategies should be prioritized to address identified teaching challenges.

4. It is recommended to prioritize advanced education and relevant training programs as key strategies for improving teachers' competencies, since educational attainment and training show significant influence. Schools should promote graduate studies and sustained participation in professional training. Additionally, since specialization and length of service have limited impact, interventions should focus more on skill enhancement rather than relying solely on experience or the field. Training programs should also emphasize technology integration, contextualization, and assessment practices in which significant relationships were observed.

5. It is recommended to implement a comprehensive and data-driven strategic initiative program that addresses identified gaps in teaching competencies. This program should include industry-based training, ICT integration, innovative teaching strategies, and assessment enhancement. Schools should also establish monitoring and evaluation mechanisms to ensure the effectiveness of interventions. Furthermore, collaboration with stakeholders, including industry partners and community organizations, should be strengthened to ensure that TLE instruction remains relevant, practical, and aligned with workforce demands.

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