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Competency-Based Instructional Practices of Technology and Livelihood Education Teachers and Learners' Skills Acquisition: Basis for an Instructional Enhancement Program

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***Abstract*—** Technical competence becomes meaningful when learners can transform classroom instruction into confident, accurate, and independent performance. This study examined the competency-based instructional practices of Technology and Livelihood Education teachers and learners' skills acquisition at Don Jose Aguirre National High School as basis for an Instructional Enhancement Program. Using a quantitative descriptive-correlational design, the study involved Grade Nine and Grade Ten TLE learners who assessed their teachers' practices in competency-based lesson planning, demonstration and modeling of skills, hands-on and performance-based learning activities, differentiated instruction and learner support, and competency-based assessment and feedback. Their skills acquisition was examined in terms of knowledge and understanding, practical skills performance, application of learned competencies, accuracy and quality of work, and independence in task performance. Data were gathered using a validated researcher-made questionnaire and analyzed through descriptive and correlational statistics. Findings revealed that competency-based instructional practices were implemented to a great extent, with demonstration and modeling of skills emerging as the most evident practice. Learners also demonstrated skills acquisition to a great extent, with knowledge and understanding emerging as the strongest area, followed by practical skills performance, while independence in task performance was comparatively less evident. A significant moderate positive relationship was established between competency-based instructional practices and learners' skills acquisition, resulting in the rejection of the null hypothesis. The study concludes that competency-based instructional practices are meaningfully associated with learners' acquisition of TLE competencies, providing a basis for instructional enhancement focused on practical application, quality performance, differentiated support, and progressive learner independence.

***Keywords*—** competency-based instruction, Technology and Livelihood Education, skills acquisition, practical skills, instructional enhancement, learner independence

I. INTRODUCTION

Background of the Study

Technology and Livelihood Education (TLE) is a competency-based learning area that is designed to cultivate skills over knowledge and encourage students to perform rather than just know. Effective competency-based instruction therefore involves deliberate lesson planning, demonstration and modeling of skills, hands-on and performance-based learning activities, differentiated instruction and learner support, and competency-based assessment and feedback. These practices offer opportunities for students to learn procedures, practice skills, get adequate direction and demonstrate mastery through real performance. Learners' skills acquisition, in turn, encompasses knowledge and understanding, practical skills performance, application of learned competencies, accuracy and quality of work, and independence in task performance. These two variables are interrelated because the quality and style of instruction may influence the opportunities provided for learners to develop, practice, refine, and independently apply TLE competencies.

Recent studies have highlighted the significance of teacher competence and instructional practices to support TLE learning. Tan (2021) emphasized the role of appropriate teaching methods, instructional resources, facilities, and teacher competence in

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improving TLE instruction in secondary schools. In the same manner, Calanog (2021) studied the competencies of the teachers in TLE in terms of content knowledge, teaching competencies, competencies in classroom management, competencies in using ICT, and competencies in assessment and evaluation and identified the competencies that needed to be developed. Basal (2022) found that strengthening TLE teachers' instructional competencies was important enough to warrant the development of an enhanced instructional program, while Dioquino and Abellana (2022) reported that planning strategies, instructional strategies, assessment practices, and curriculum development were highly implemented among TLE teachers and were relevant to their competencies. More directly related to learner outcomes, Ogoc (2024) found significant relationships between several dimensions of TLE teachers' competence and students' work skills and attitudes. These studies collectively indicate that effective TLE instruction relies not only on the technical competence of the teacher but also on the way the learning experiences are planned, demonstrated, practiced, supported, and assessed to help the learners develop their skills.

Despite this body of evidence, the relationship between competency-based instructional practices and learners' skills acquisition remains important to examine within the specific context of Don Jose Aguirre National High School in Manukan, Zamboanga del Norte. Findings obtained from other schools and localities may not fully reflect how learners in this setting experience competency-based TLE instruction or how their perceived skills acquisition corresponds with such practices. In particular, school-based evidence is needed regarding how lesson planning, skills demonstration, hands-on activities, differentiated support, and competency-based assessment relate to learners' understanding, practical performance, application of competencies, quality of work, and independence in performing tasks. Examining these areas within the school will provide contextual evidence for identifying instructional strengths and areas that may require enhancement.

Thus, the study aims to determine the extent of competency-based instructional practices of TLE teachers in terms of competency-based lesson planning, demonstration and modeling of skills, hands-on and performance-based learning activities, differentiated instruction and learner support, and competency-based assessment and feedback. It further intends to assess learners' skills acquisition in terms of knowledge and understanding, practical skills performance, application of learned competencies, accuracy and quality of work, and independence in task performance. Moreover, it seeks to establish whether a significant relationship exists between competency-based instructional practices and learners' skills acquisition. The findings will serve as basis for developing an Instructional Enhancement Program intended to strengthen competency-based TLE instruction and support learners' acquisition and application of practical skills.

Theoretical Framework

This study was anchored on Vygotsky's Sociocultural Theory (1978), particularly the concept of the Zone of Proximal Development (ZPD). The theory maintains that learning develops through social interaction and guided participation, especially when learners perform tasks with the assistance of a more knowledgeable individual before becoming capable of completing them independently. The ZPD is the distance between what a learner can do independently and what he or she can do with help. This is especially true in a skills-based education where students may be able to observe and understand a procedure, then perform with teacher assistance, and then perform independently.

A central principle associated with Vygotsky's theory is scaffolding, in which instructional support is adjusted according to the learner's developing capability and gradually reduced as competence increases. This might involve demonstration, modelling, prompts, guided practice, feedback, error correction, task sequencing and more. Raslan (2024) described the scaffolding used in ZPD as a short-term helping measure until the learners' master new skills and then gradually fade out with the learners' capability to solve problems and complete tasks on their own. In vocational education, Chen et al. (2023)

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have designed a cognitive and metacognitive instructional scaffolding strategy that can be used to support the development of complex thinking skills in vocational students, and they found that the use of metacognitive prompts led to an improvement in learning outcomes, self-efficacy, and motivation for the vocational students. In the same way, Zhao and Ko (2024) highlighted adaptive instruction in vocational classrooms, whereby teachers plan and adapt lessons to address the needs of the learners and the expectations of the learning environment of the profession. These principles indicate that competency development is facilitated when instruction provides sufficient guidance during learning while progressively encouraging learners to assume greater responsibility for task performance.

The principles of Sociocultural Theory are reflected in the present study through the manner in which competency-based TLE instruction supports learners as they progress toward mastery. Competency-based lesson planning establishes a purposeful sequence of learning experiences, while demonstration and modeling allow learners to observe how procedures and practical skills are correctly performed. Hands-on and performance-based activities subsequently provide opportunities to practice these skills, while differentiated instruction enables the teacher to vary assistance according to learners' individual needs and current levels of competence. Competency-based assessment and feedback further allow errors to be identified, corrected, and used as opportunities for continued improvement. This progression corresponds with the scaffolding process because teacher assistance is provided while competencies are developing and learners are gradually expected to perform with greater accuracy and independence. Dahlberg and Gustavsson (2024), in their investigation of vocational education and training, highlighted the role of instructional scaffolding, feedback, self-evaluation, and reflective practices in supporting the learning of vocational skills across simulated and authentic learning environments.

Empirical research further supports the application of these theoretical principles to skills-oriented learning. Scaffolding was explored from a sociocultural perspective by Sarmiento-Campos et al. (2022) who found that the use of scaffolding had an impact on improving the performance of learners in comparison with the conventional approach, showing the importance of providing learners with guided assistance in order to build their competences. In a study focused on vocational high school learners programming logic controllers, Chen et al. (2023) found that metacognitive scaffolding led to better outcomes in computational thinking, suggesting that structured support for instruction can help learners develop more complex vocational skills. In a different vocational field, Kim and Chang (2021) used the educational theory of Vygotsky for designing the haircut practical skills training, focusing on the point of interaction among the teachers and learners in the process of training practical skills. Raslan (2024) likewise reported that ZPD-based scaffolding supported students' problem-solving skills and learning outcomes by providing temporary assistance that could be reduced as learners developed mastery. All of these studies illustrate the viability of guided learning, scaffolding, interaction and progressive independence to a variety of knowledge and practical skill development.

Accordingly, Vygotsky's Sociocultural Theory provides the theoretical foundation for explaining the relationship between competency-based instructional practices and learners' skills acquisition in TLE. In the study, competency-based instructional practices represent the structured guidance and learning opportunities through which teachers support learners within their developing levels of competence. Through lesson sequencing, modeling, hands-on practice, differentiated support, assessment, and feedback, learners are expected to progress from guided participation toward increasingly independent performance. Learners' skills acquisition represents the resulting development manifested through knowledge and understanding, practical skills performance, application of learned competencies, accuracy and quality of work, and independence in task performance. Thus, the theory explains why the quality and extent of competency-based instructional practices may be associated with learners' development and mastery of TLE competencies.

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II. RESEARCH METHODOLOGY

The study employed a quantitative descriptive-correlational research design to determine the relationship between competency-based instructional practices of Technology and Livelihood Education (TLE) teachers and learners' skills acquisition at Don Jose Aguirre National High School, Manukan 2 District, Schools Division of Zamboanga del Norte. The respondents were Grade 9 and Grade 10 learners enrolled in TLE. Data were gathered using a researcher-made questionnaire covering five dimensions of competency-based instructional practices and five dimensions of learners' skills acquisition, measured using a four-point Likert scale. The instrument underwent expert validation, pilot testing, and reliability analysis using Cronbach's alpha. Permission from school authorities, informed consent, and appropriate parental consent and learner assent were secured, while voluntary participation, confidentiality, and anonymity were observed. Data were analyzed using mean and standard deviation to determine the extent of both variables, while Pearson product-moment correlation was employed to test their significant relationship at the 0.05 level of significance. The findings served as the basis for developing an Instructional Enhancement Program.

III. PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

Table 1.1 *Extent of Competency-Based Instructional Practices of TLE Teachers in Terms of Competency-Based Lesson Planning*

Indicators	SD	Mean
The TLE teacher communicates the competencies learners are expected to achieve.	0.79	3.22
The TLE teacher aligns learning activities with the intended competencies.	0.80	3.15
The TLE teacher sequences lessons from basic to more complex skills.	0.78	3.13
The TLE teacher selects instructional materials suited to the competencies being developed.	0.84	3.20
The TLE teacher connects lesson content with practical and real-life applications.	0.71	3.33
The TLE teacher adjusts instructional plans based on learners' progress.	0.84	2.97
Aggregated Mean	3.17 (Great Extent)	

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent

Table 1.1 presents the extent of competency-based instructional practices of TLE teachers in terms of competency-based lesson planning. The findings show an aggregated mean of 3.17, interpreted as Great Extent, indicating that competency-based lesson planning was generally evident in the teachers' instructional practices. Among the indicators, connecting lesson content with practical and real-life applications obtained the highest mean of 3.33 (SD = 0.71), interpreted as Very Great Extent. This was followed by communicating the competencies learners were expected to achieve, with a mean of 3.22 (SD = 0.79), and selecting instructional materials suited to the competencies being developed, with a mean of 3.20 (SD = 0.84). In comparison, adjusting instructional plans based on learners' progress obtained the lowest mean of 2.97 (SD = 0.84), although it remained within the Great Extent category. The overall result indicates that TLE teachers demonstrated favorable competency-based lesson planning by organizing instruction around intended competencies and maintaining a strong connection between classroom learning and practical application. The highest-rated indicator suggests that teachers were particularly effective in making TLE lessons relevant to situations beyond the classroom, which is essential in a skills-oriented learning area where competencies are intended for practical use.

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Meanwhile, the comparatively lower rating for adjusting instructional plans based on learners' progress suggests that responsive modification of planned instruction was practiced to a great extent but was not yet experienced at the very highest level. This does not diminish the favorable overall result; rather, it indicates that while teachers generally planned instruction effectively, greater flexibility in responding to learners' developing mastery could further complement their established planning practices.

The finding is consistent with Bacovsky-Novak (2023), who emphasized that vocational lesson planning requires the purposeful integration of learning goals, content, and instructional processes to ensure that learning activities lead toward intended outcomes. It also supports Mejeh and Held (2022), who stressed that vocational learning environments should provide meaningful tasks, clear expectations, and instructional support responsive to learners' developing competence. In this regard, the findings imply that TLE teachers should sustain their strong emphasis on connecting competencies with practical and real-life applications while further strengthening the flexibility of instructional plans according to learners' demonstrated progress and mastery.

Table 1.2 *Extent of Competency-Based Instructional Practices of TLE Teachers in Terms of Demonstration and Modeling of Skills*

Indicators	SD	Mean
The TLE teacher demonstrates the correct procedure before learners perform a task.	0.80	3.27
The TLE teacher explains the steps clearly during skills demonstrations.	0.83	3.30
The TLE teacher models the proper use of tools, equipment, and materials.	0.70	3.43
The TLE teacher demonstrates appropriate safety practices during practical activities.	0.75	3.39
The TLE teacher presents the expected standard or quality of completed work.	0.82	3.14
The TLE teacher clarifies difficult procedures when learners need further guidance.	0.79	3.10
Aggregated Mean	3.27 (Very Great Extent)	

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent.

Table 1.2 shows the extent of competency-based instructional practices of TLE teachers in terms of demonstration and modeling of skills. The responses generated an aggregated mean of 3.27, interpreted as Very Great Extent, reflecting the strong presence of demonstration and modeling in TLE instruction. The highest-rated practice was modeling the proper use of tools, equipment, and materials, with a mean of 3.43 (SD = 0.70), followed by demonstrating appropriate safety practices during practical activities, with a mean of 3.39 (SD = 0.75). Conversely, clarifying difficult procedures when learners need further guidance registered the lowest mean of 3.10 (SD = 0.79), followed by presenting the expected standard or quality of completed work at 3.14 (SD = 0.82). Both of these comparatively lower indicators were nevertheless practiced to a Great Extent.

Collectively, the responses demonstrate that TLE teachers were highly engaged in showing learners how practical skills should be correctly and safely performed. The prominence of proper tool, equipment, and material use suggests that teachers provided learners with clear models of appropriate technical performance, while the strong emphasis on safety demonstrates that precautionary practices were integrated into skills instruction. The comparatively lower rating for clarifying difficult procedures suggests that additional explanation and guidance were provided when needed, although this aspect was not yet experienced at the very highest level. Thus, the

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pattern reflects a particularly strong emphasis on demonstrating correct and safe performance, alongside opportunities to further reinforce follow-up guidance for procedures that learners find difficult.

These results correspond with the work of Sripanom et al. (2022), who demonstrated the value of combining demonstration with practical exercises and structured instructional activities in developing technical skills. Awae (2022) likewise emphasized structured practical instruction in helping vocational learners develop fundamental skills in handling and using technical instruments.

In light of the findings, the highly evident demonstration of proper tool use and safety practices should be sustained, while greater attention may be given to clarifying difficult procedures and communicating expected performance standards so that learners receive sufficient guidance as they progress from observation toward competent and independent performance.

Table 1.3 *Extent of Competency-Based Instructional Practices of TLE Teachers in Terms of Hands-On and Performance-Based Learning Activities*

Indicators	SD	Mean
The TLE teacher provides opportunities for learners to practice the skills taught.	0.80	3.12
The TLE teacher uses performance tasks that simulate real-life or workplace situations.	0.83	3.03
The TLE teacher provides adequate time for hands-on activities.	0.84	2.97
The TLE teacher engages learners in solving problems encountered during practical tasks.	0.81	3.19
The TLE teacher organizes practical activities that require learners to use appropriate tools, equipment, and materials.	0.72	3.17
The TLE teacher increases the complexity of practical tasks as learners develop competence.	0.84	2.99
Aggregated Mean	3.08 (Great Extent)	

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent

Table 1.3 reveals the extent of competency-based instructional practices of TLE teachers in terms of hands-on and performance-based learning activities. The responses yielded an aggregated mean of 3.08, interpreted as Great Extent, showing that practical and performance-oriented learning experiences were generally incorporated into TLE instruction. The highest mean of 3.19 (SD = 0.81) was recorded for engaging learners in solving problems encountered during practical tasks, followed closely by organizing practical activities that require the use of appropriate tools, equipment, and materials, with a mean of 3.17 (SD = 0.72). On the other hand, providing adequate time for hands-on activities obtained the lowest mean of 2.97 (SD = 0.84), while increasing the complexity of practical tasks as learners develop competence registered a mean of 2.99 (SD = 0.84). All indicators remained within the Great Extent category.

The pattern of responses suggests that TLE teachers provided learners with substantial opportunities to engage actively in practical learning rather than relying primarily on theoretical instruction. The strongest emphasis on problem solving during practical tasks indicates that learners were encouraged to think through difficulties encountered while performing activities, an important feature of competency development because practical work often requires judgment and appropriate responses to emerging problems. The comparatively lower rating for adequate time suggests that hands-on activities were regularly provided, although the amount of time available for actual practice was not yet experienced at

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the very highest level. Similarly, the rating for progressively increasing task complexity indicates that teachers generally provided advancement in practical activities, but this practice was comparatively less pronounced than problem-solving and appropriate use of tools and materials.

This pattern aligns with Winberg and Hollis-Turner (2021), who emphasized that practical vocational learning should connect actual performance with conceptual understanding, reasoning, judgment, and problem solving rather than consist merely of repetitive technical activities. It also corresponds with Reganon (2022), whose competency-based training intervention highlighted the importance of hands-on opportunities in strengthening learners' practical performance in technical subjects.

The findings therefore imply that TLE teachers should sustain practical activities that engage learners in problem-solving and appropriate use of tools and materials while providing sufficient practice time and progressively challenging tasks as learners develop greater competence.

Table 1.4 *Extent of Competency-Based Instructional Practices of TLE Teachers in Terms of Differentiated Instruction and Learner Support*

Indicators	SD	Mean
The TLE teacher provides additional guidance to learners who experience difficulty.	0.85	3.10
The TLE teacher varies teaching strategies according to learners' needs.	0.82	2.96
The TLE teacher provides additional practice for learners who have not yet mastered a competency.	0.73	3.06
The TLE teacher gives enrichment tasks to learners who demonstrate early mastery.	0.85	2.86
The TLE teacher encourages learners to seek clarification when instructions are unclear.	0.85	3.06
The TLE teacher provides constructive guidance when learners make errors during skill performance.	0.76	3.14
Aggregated Mean	3.03 (Great Extent)	

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent

Table 1.4 depicts the extent of competency-based instructional practices of TLE teachers in terms of differentiated instruction and learner support. The findings produced an aggregated mean of 3.03, interpreted as Great Extent, showing that teachers generally provided instructional assistance responsive to learners' varying needs and levels of performance. The highest mean of 3.14 (SD = 0.76) was obtained for providing constructive guidance when learners make errors during skill performance, followed by providing additional guidance to learners who experience difficulty at 3.10 (SD = 0.85). In comparison, giving enrichment tasks to learners who demonstrate early mastery registered the lowest mean of 2.86 (SD = 0.85), while varying teaching strategies according to learners' needs obtained a mean of 2.96 (SD = 0.82). Nevertheless, all indicators were rated within the Great Extent category.

Taken as a whole, the findings reflect a favorable level of differentiated instruction and learner support in which teachers were particularly attentive to learners who encountered errors or difficulties during skills performance. The highest-rated practice suggests that mistakes were generally addressed through constructive guidance, allowing learners to receive assistance while developing the required competencies. At the same time, the comparatively lower rating for enrichment tasks indicates that support for learners who achieved competencies earlier than others was evident but not yet experienced at the very highest level. The pattern further suggests

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that differentiation was somewhat more pronounced in providing corrective and remedial assistance than in extending learning opportunities for learners who had already demonstrated mastery.

This finding is consistent with Compen et al. (2025), who emphasized that differentiated instruction in vocational education involves monitoring learners, adapting instruction and learning activities, providing appropriate levels of challenge, and stimulating self-regulation according to differences in learners' competencies and needs. Karkkulainen et al. (2023) likewise highlighted the value of responsive feedback in supporting reflection, persistence, practical learning, and performance among vocational learners experiencing learning difficulties.

The findings therefore imply that TLE teachers should sustain constructive guidance for learners experiencing difficulties while giving greater attention to varied teaching strategies and enrichment opportunities for learners who demonstrate earlier mastery, thereby extending differentiated support across different levels of learner readiness.

Table 1.5 *Extent of Competency-Based Instructional Practices of TLE Teachers in Terms of Competency-Based Assessment and Feedback*

Indicators	SD	Mean
The TLE teacher assesses learners through actual demonstration or performance of skills.	0.73	3.21
The TLE teacher uses clear criteria or rubrics in evaluating performance.	0.71	3.15
The TLE teacher evaluates both the procedure followed and the quality of the completed output.	0.80	3.21
The TLE teacher provides timely and specific feedback on learners' performance.	0.91	2.92
The TLE teacher allows learners to correct errors and demonstrate improved performance.	0.84	2.93
The TLE teacher uses assessment results to determine the need for further instruction or practice.	0.81	3.06
Aggregated Mean	3.08 (Great Extent)	

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent

Table 1.5 illustrates the extent of competency-based instructional practices of TLE teachers in terms of competency-based assessment and feedback. The findings obtained an aggregated mean of 3.08, interpreted as Great Extent, signifying that assessment and feedback practices were generally integrated into competency-based TLE instruction. Two indicators jointly recorded the highest mean of 3.21: assessing learners through actual demonstration or performance of skills (SD = 0.73) and evaluating both the procedure followed and the quality of the completed output (SD = 0.80). Meanwhile, providing timely and specific feedback on learners' performance registered the lowest mean of 2.92 (SD = 0.91), closely followed by allowing learners to correct errors and demonstrate improved performance at 2.93 (SD = 0.84). Despite these variations, all indicators remained within the Great Extent category.

Viewed collectively, the responses suggest that TLE assessment was strongly oriented toward the actual demonstration of competencies rather than relying solely on measures of theoretical knowledge. The equally high ratings for assessing skill performance and considering both procedure and output quality indicate that learners were evaluated according to how they performed tasks and the quality of what they produced. The comparatively lower rating for timely and specific feedback suggests that feedback was generally provided but was not yet experienced at the very highest level. The relatively larger SD of 0.91 for this indicator also reflects greater variation in learners'

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experiences of receiving timely and specific feedback. Thus, while competency assessment was favorably practiced, the results point to feedback and opportunities for corrective performance as comparatively less evident components of the assessment process.

The findings parallel Yusop et al. (2022), whose systematic review established that competency-based assessment is widely used in TVET to determine whether intended learning outcomes and competencies have been attained and to provide information useful for subsequent teaching and learning. They also accord with Villarroel et al. (2024), who emphasized the importance of performance-based assessment and meaningful feedback in vocational education while identifying opportunities to strengthen individualized and dialogical feedback. Accordingly, TLE teachers should sustain the use of actual skill demonstrations and the evaluation of both procedures and completed outputs while strengthening the timeliness and specificity of feedback and opportunities for learners to correct errors and demonstrate improved performance.

Table 2 *Summary of the Extent of Competency-Based Instructional Practices of TLE Teachers*

Variables	Mean	Interpretation
Competency-Based Lesson Planning	3.17	Great Extent
Demonstration and Modeling of Skills	3.27	Very Great Extent
Hands-On and Performance-Based Learning Activities	3.08	Great Extent
Differentiated Instruction and Learner Support	3.03	Great Extent
Competency-Based Assessment and Feedback	3.08	Great Extent
Aggregated Mean	3.13	Great Extent

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent

Table 2 summarizes the extent of competency-based instructional practices of TLE teachers across the five dimensions examined in the study. The results generated an aggregated mean of 3.13, interpreted as Great Extent, demonstrating that competency-based instructional practices were generally evident across the different aspects of TLE instruction. Among the dimensions, demonstration and modeling of skills obtained the highest mean of 3.27, interpreted as Very Great Extent. This was followed by competency-based lesson planning at 3.17, while hands-on and performance-based learning activities and competency-based assessment and feedback both obtained 3.08. Differentiated instruction and learner support registered the comparatively lowest mean of 3.03, although it remained within the Great Extent category.

Across the five dimensions, the findings demonstrate that learners generally experienced a favorable and comprehensive pattern of competency-based instruction. The particularly strong rating for demonstration and modeling suggests that teachers were most consistent in making procedures, appropriate techniques, tool use, and expected performance observable to learners before or during practical work. At the same time, the Great Extent ratings across all other dimensions indicate that competency-based teaching was not confined to demonstration but also involved purposeful planning, practical learning opportunities, differentiated support, assessment, and feedback. The comparatively lower rating for differentiated instruction and learner support does not indicate an absence of such practices; rather, it suggests that adapting instruction and support to individual differences was not yet experienced at the very highest level compared with the teachers' particularly strong demonstration and modeling practices. The pattern is consistent with Winberg and Hollis-Turner (2021), who emphasized that vocational competence develops through meaningful connections between theoretical understanding and practical performance, requiring instructional experiences that enable learners to apply knowledge in occupationally relevant activities. It also corresponds with Mejeh and Held (2022), who stressed the importance of

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meaningful tasks, instructional support, scaffolding, and learner autonomy in vocational learning environments. Thus, the findings imply that the generally favorable competency-based instructional practices should be sustained, particularly the strong use of demonstration and modeling, while further strengthening differentiated strategies and learner support to ensure that instructional assistance responds effectively to varying levels of readiness and mastery.

Table 3.1 *Level of Learners' Skills Acquisition in TLE in Terms of Knowledge and Understanding*

Indicators	SD	Mean
As a learner, I understand the concepts underlying the TLE skills taught in class.	0.70	3.22
As a learner, I identify the appropriate tools, materials, and equipment for a given task.	0.79	2.99
As a learner, I explain the correct sequence of procedures in performing a task.	0.79	2.98
As a learner, I recognize the safety precautions required in practical activities.	0.69	3.17
As a learner, I understand the standards used to determine the quality of an output.	0.71	3.07
As a learner, I relate TLE concepts to practical situations.	0.81	3.04
Aggregated Mean	3.08 (Great Extent)	

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent

Table 3.1 outlines the level of learners' skills acquisition in TLE in terms of knowledge and understanding. The findings yielded an aggregated mean of 3.08, interpreted as Great Extent, showing that learners generally possessed a favorable level of understanding of the concepts and knowledge underlying their TLE competencies. The highest mean of 3.22 (SD = 0.70) was obtained for understanding the concepts underlying the TLE skills taught in class, followed by recognizing the safety precautions required in practical activities at 3.17 (SD = 0.69). Conversely, explaining the correct sequence of procedures in performing a task registered the lowest mean of 2.98 (SD = 0.79), closely followed by identifying the appropriate tools, materials, and equipment for a given task at 2.99 (SD = 0.79). Nonetheless, all indicators fell within the Great Extent category.

The pattern of findings reflects that learners had developed a sound cognitive foundation for their TLE competencies. Their strongest result in understanding the concepts underlying the skills taught suggests that they generally grasped the principles that support practical performance rather than merely encountering TLE as a series of mechanical activities. Their strong recognition of safety precautions further demonstrates awareness of an essential requirement in performing practical tasks responsibly. Meanwhile, the comparatively lower rating for explaining the correct sequence of procedures suggests that learners generally understood procedural order, although articulating the steps involved in task performance was not yet evident at the very highest level. This distinction suggests that conceptual understanding was somewhat more established than the learners' ability to express procedural knowledge in an organized sequence.

The result echoes Ferm (2021), who demonstrated that vocational learners recognize the relevance of both theoretical and practical knowledge, emphasizing that occupational competence requires connections between understanding and action. It also reinforces the position of Winberg and Hollis-Turner (2021) that vocational competence depends on integrating conceptual knowledge with practical activity, since knowledge enables learners to interpret situations and make appropriate decisions during performance. Hence, the favorable level of knowledge and understanding should be sustained while providing learners with further opportunities to explain

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procedural sequences and identify appropriate tools, materials, and equipment, thereby strengthening the translation of conceptual understanding into organized and informed practical performance.

Table 3.2 *Level of Learners' Skills Acquisition in TLE in Terms of Practical Skills Performance*

Indicators	SD	Mean
As a learner, I perform the procedures required in practical activities.	0.74	3.05
As a learner, I use tools and equipment correctly.	0.85	2.93
As a learner, I apply appropriate techniques in completing assigned tasks.	0.76	3.13
As a learner, I observe safety practices while performing practical activities.	0.73	3.23
As a learner, I handle materials properly while performing practical tasks.	0.82	3.10
As a learner, I complete practical tasks within the expected time.	0.81	2.87
Aggregated Mean	3.05 (Great Extent)	

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent

Table 3.2 displays the level of learners' skills acquisition in TLE in terms of practical skills performance. The responses generated an aggregated mean of 3.05, interpreted as Great Extent, indicating that learners generally demonstrated the practical abilities required in performing TLE activities. Among the indicators, observing safety practices while performing practical activities obtained the highest mean of 3.23 (SD = 0.73), followed by applying appropriate techniques in completing assigned tasks at 3.13 (SD = 0.76). In contrast, completing practical tasks within the expected time recorded the lowest mean of 2.87 (SD = 0.81), followed by using tools and equipment correctly at 2.93 (SD = 0.85). Despite the differences in mean scores, all indicators were interpreted as Great Extent.

The results indicate that learners had developed a favorable level of practical competence, particularly in performing activities with attention to safety and appropriate techniques. The highest rating for observing safety practices suggests that learners were generally conscious of precautions necessary during practical work, an important component of responsible skills performance. Their comparatively lower rating for completing tasks within the expected time suggests that learners were generally capable of accomplishing practical activities, although efficiency in task completion was not yet demonstrated at the very highest level. Similarly, the lower rating for correct tool and equipment use indicates that this skill was evident to a great extent but could benefit from continued practice. The pattern therefore reflects stronger performance in safety and technique than in the speed and consistency required for efficient task execution.

These findings correspond with Awae (2022), who demonstrated the value of structured practical-skills instruction in developing vocational learners' competence in handling and using technical instruments. They also align with De Guia (2024), whose investigation among Grade 9 TLE learners reported favorable levels of learning competencies and practical performance, reinforcing the importance of actual task execution in demonstrating skills acquisition. The results imply that learners' established emphasis on safe practices and appropriate techniques should be sustained while providing continued opportunities to develop greater proficiency in tool and equipment use and complete practical tasks efficiently within expected time requirements.

Table 3.3 *Level of Learners' Skills Acquisition in TLE in Terms of Application of Learned Competencies*

Indicators	SD	Mean
As a learner, I apply previously learned skills to new practical tasks.	0.76	3.06
As a learner, I select appropriate methods based on the requirements of a task.	0.95	2.91

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As a learner, I use acquired skills to solve problems encountered during practical activities.	0.93	2.75
As a learner, I adapt learned procedures when task conditions require adjustments.	0.75	2.82
As a learner, I combine related competencies when completing complex tasks.	0.79	2.85
As a learner, I apply TLE skills to real-life or workplace-related situations.	0.79	2.85
Aggregated Mean	2.87 (Great Extent)	

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent

Table 3.3 reports the level of learners' skills acquisition in TLE in terms of the application of learned competencies. The results yielded an aggregated mean of 2.87, interpreted as Great Extent, indicating that learners were generally able to transfer and use previously acquired competencies across practical situations. The highest mean of 3.06 (SD = 0.76) was recorded for applying previously learned skills to new practical tasks, followed by selecting appropriate methods based on task requirements at 2.91 (SD = 0.95). Conversely, using acquired skills to solve problems encountered during practical activities obtained the lowest mean of 2.75 (SD = 0.93). Adapting learned procedures when task conditions require adjustments also received a comparatively lower mean of 2.82 (SD = 0.75). Nevertheless, all indicators remained within the Great Extent category.

Taken together, the results suggest that learners had developed a favorable capacity to transfer competencies beyond the specific activities through which they were initially learned. Their strongest performance in applying previously acquired skills to new practical tasks indicates that learned competencies were generally retained and usable when learners encountered different activities. However, the comparatively lower rating for problem solving suggests that applying skills when unexpected difficulties arise was not yet demonstrated at the very highest level. Similarly, the rating for adapting procedures indicates that learners could generally modify what they had learned according to changing task conditions, although flexible application appeared less developed than straightforward transfer to new tasks. The pattern therefore suggests that learners were more confident in using familiar competencies in new activities than in independently adapting those competencies to solve emerging practical problems.

This result aligns with Putra et al. (2025), whose review of work-integrated learning emphasized the importance of connecting academic preparation with workplace experiences so that vocational competencies can be transferred to authentic practical situations. It also corresponds with Alinea et al. (2024), who highlighted the importance of technical and employability competencies that learners can use beyond instructional exercises in preparation for actual occupational environments. The findings therefore imply that learners' favorable ability to apply previously learned skills should be sustained while providing more opportunities for problem-solving, procedural adaptation, and complex practical tasks that require learners to determine how and when acquired competencies should be applied.

Table 3.4 *Level of Learners' Skills Acquisition in TLE in Terms of Accuracy and Quality of Work*

Indicators	SD	Mean
As a learner, I follow required specifications when completing practical tasks.	0.91	2.80
As a learner, I produce outputs that meet established performance standards.	0.85	2.73
As a learner, I perform tasks with attention to important details.	0.79	3.03
As a learner, I detect and correct errors in my work.	0.77	2.98

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As a learner, I maintain precision when carrying out procedures that require specific measurements or specifications.	0.79	2.66
As a learner, I check the quality of my output before considering the task complete.	0.87	3.02
Aggregated Mean	2.87 (Great Extent)	

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent

Table 3.4 reflects the level of learners' skills acquisition in TLE in terms of accuracy and quality of work. The responses yielded an aggregated mean of 2.87, interpreted as Great Extent, indicating that learners generally demonstrated accuracy and attention to quality while completing practical tasks.

Among the indicators, performing tasks with attention to important details obtained the highest mean of 3.03 (SD = 0.79), closely followed by checking the quality of the output before considering the task complete at 3.02 (SD = 0.87).

In contrast, maintaining precision when carrying out procedures requiring specific measurements or specifications registered the lowest mean of 2.66 (SD = 0.79), while producing outputs that meet established performance standards obtained 2.73 (SD = 0.85). Although these indicators varied in magnitude, all remained within the Great Extent category.

The distribution of responses indicates that learners had developed a favorable degree of quality consciousness in performing TLE tasks. Their stronger ratings for attention to important details and checking completed outputs suggest that they generally exercised care during task performance and recognized the importance of examining their work before completion. However, the comparatively lower rating for maintaining precision suggests that tasks requiring exact measurements or strict specifications were not yet performed at the very highest level of competence. Similarly, the lower rating for producing outputs according to established standards indicates that learners generally understood and applied quality expectations, but consistency in meeting prescribed standards could still be strengthened.

The pattern therefore suggests that learners were more evident in monitoring details and checking their work than in consistently achieving technical precision and established performance standards.

These findings correspond with Garraway (2022), who emphasized that vocational competence involves performing according to the complexity and standards of authentic occupational situations rather than merely completing assigned tasks. They also reinforce De Vos et al. (2024), who found that judgments of vocational performance are shaped by occupational norms, values, and established criteria, underscoring the importance of evaluating work against expected standards.

The findings therefore imply that learners' established attention to detail and practice of checking completed outputs should be sustained while providing greater opportunities to develop precision, adherence to specifications, and consistency in producing outputs that meet established performance standards.

Table 3.5 *Level of Learners' Skills Acquisition in TLE in Terms of Independence in Task Performance*

Indicators	SD	Mean
As a learner, I perform familiar tasks with minimal assistance.	0.81	2.90
As a learner, I organize the tools and materials needed before starting a task.	0.88	2.87
As a learner, I make appropriate decisions while carrying out practical activities.	0.90	2.74
As a learner, I solve simple task-related problems independently.	0.81	2.64
As a learner, I manage my time while completing assigned activities.	0.85	2.72

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As a learner, I recognize situations that require assistance from the teacher.	0.78	3.07
Aggregated Mean	2.82 (Great Extent)	

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent

Table 3.5 shows the level of learners' skills acquisition in TLE in terms of independence in task performance. The findings generated an aggregated mean of 2.82, interpreted as Great Extent, indicating that learners generally demonstrated the ability to carry out TLE-related responsibilities with a considerable degree of independence. The highest mean of 3.07 (SD = 0.78) was obtained for recognizing situations that require assistance from the teacher, followed by performing familiar tasks with minimal assistance at 2.90 (SD = 0.81). On the other hand, solving simple task-related problems independently recorded the lowest mean of 2.64 (SD = 0.81), while managing time while completing assigned activities obtained 2.72 (SD = 0.85). All indicators, however, remained within the Great Extent category.

The findings suggest that learners had developed a favorable degree of independence while still demonstrating awareness of when teacher assistance was necessary. The highest rating for recognizing situations requiring assistance is particularly meaningful because independence does not necessarily mean completing every task without support; rather, it also involves judging when a difficulty exceeds one's present capability and appropriately seeking guidance. The learners' ability to perform familiar tasks with minimal assistance further reflects developing autonomy in practical work. In comparison, the lower rating for independently solving simple task-related problems indicates that autonomous problem solving was evident but not yet demonstrated at the very highest level. The pattern suggests that learners were relatively more capable of recognizing when support was needed than of independently resolving difficulties and managing all aspects of task performance on their own. This result corresponds with Pylväs et al. (2022), who identified initiative, perseverance, strategic planning, information seeking, time management, and monitoring of performance as important elements of self-regulated learning among vocational students. It also aligns with Aguda and Cuenca (2023), whose findings on TLE learners emphasized that independence and self-directedness develop progressively and should be supported through instructional conditions that encourage learners to assume greater responsibility for their performance. The findings therefore imply that learners' ability to perform familiar tasks with limited assistance and appropriately seek teacher support should be sustained while strengthening opportunities for independent problem solving, decision-making, and time management during practical activities.

Table 4 *Summary of the Level of Learners' Skills Acquisition in TLE*

Variables	Mean	Interpretation
Knowledge and Understanding	3.08	Great Extent
Practical Skills Performance	3.05	Great Extent
Application of Learned Competencies	2.87	Great Extent
Accuracy and Quality of Work	2.87	Great Extent
Independence in Task Performance	2.82	Great Extent
Aggregated Mean	2.94	Great Extent

Scale: 3.26–4.00 = Very Great Extent; 2.51–3.25 = Great Extent; 1.76–2.50 = Moderate Extent; 1.00–1.75 = Low Extent

Table 4 summarizes the level of learners' skills acquisition in TLE across the five dimensions assessed in the study. The findings yielded an aggregated mean of 2.94, interpreted as Great Extent, indicating that learners generally demonstrated favorable acquisition of TLE competencies. Specifically, knowledge and

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understanding obtained the highest mean of 3.08, followed by practical skills performance with 3.05. Application of learned competencies and accuracy and quality of work both registered a mean of 2.87, while independence in task performance obtained the comparatively lowest mean of 2.82. All five dimensions were interpreted as Great Extent, showing that learners demonstrated TLE competencies consistently across conceptual understanding, practical performance, application, quality of work, and independent task execution.

Viewed collectively, the pattern of results suggests that learners possessed a well-established foundation of TLE competencies, although the degree of acquisition varied across dimensions. The stronger rating for knowledge and understanding indicates that learners were particularly capable of comprehending concepts, procedures, and principles underlying their practical activities, while the similarly favorable practical skills performance reflects their ability to translate such understanding into actual task execution. The ratings for application of learned competencies and accuracy and quality of work indicate that learners were also able to transfer their learning to practical situations and perform tasks with attention to expected standards.

Meanwhile, independence in task performance, although still demonstrated to a Great Extent, was comparatively less evident, suggesting that autonomous decision-making, problem solving, and task completion were not yet manifested at the same level as their conceptual and practical competencies.

The findings reflect the multidimensional nature of vocational skills acquisition discussed in the reviewed literature. Winberg and Hollis-Turner (2021) emphasized the integration of conceptual knowledge and practical activity in developing vocational competence, while Pylväs et al. (2022) highlighted self-regulation, initiative, planning, and monitoring as important components of effective vocational learning.

The results therefore imply that learners' established knowledge and understanding and practical skills performance should be sustained, while learning experiences should provide progressively challenging opportunities to further strengthen the application of learned competencies, accuracy and quality of work, and independence in task performance, thereby supporting more comprehensive and workplace-relevant TLE competence.

Table 5 *Test of Significant Relationship between Competency-Based Instructional Practices of TLE Teachers and Learners' Skills Acquisition*

Test Variables	Correlation Coefficient	p value	Decision
Competency-Based Instructional Practices and Learners' Skills Acquisition	0.420	< 0.001	Reject H_0

Note: If $p \leq 0.05$, there is a significant relationship

Table 5 reveals the relationship between competency-based instructional practices of TLE teachers and learners' skills acquisition. The analysis yielded a correlation coefficient of 0.420 and a p-value of < 0.001. Since the p-value is lower than the 0.05 level of significance, the null hypothesis is rejected. The result therefore establishes a statistically significant moderate positive relationship between competency-based instructional practices and learners' skills acquisition.

The result indicates that greater implementation of competency-based instructional practices is associated with higher levels of learners' skills acquisition. This means that the competency-based approaches employed by TLE teachers are meaningfully related to how learners develop the competencies expected from their practical learning experiences. The positive direction of the relationship further indicates that as competency-based instructional practices become more evident, learners' skills acquisition also tends to be higher. Thus, the instructional practices examined

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in the study are significantly linked with the development of learners' TLE competencies.

The finding corresponds with Ogoc (2024), who reported significant relationships between dimensions of TLE teachers' competence and students' work-related skills and attitudes. It is likewise consistent with Sublay (2024), whose findings emphasized the relevance of structured instructional practices in strengthening learners' performance in TLE. These findings reinforce the present result that competency-based instructional practices are significantly associated with learners' skills acquisition, highlighting the important connection between how competency-based instruction is carried out and the level of skills demonstrated by TLE learners.

IV. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The study concludes that competency-based instruction is meaningfully associated with the development of learners' TLE competencies. The established instructional practices provide a supportive environment for developing learners' knowledge and practical abilities, while the comparatively less evident areas of independent performance, adaptive application, and precision indicate that competency development remains progressive. Thus, effective TLE instruction requires not only clear demonstration and structured practical experiences but also sustained opportunities for learners to apply, refine, and independently perform acquired competencies.

Recommendations

TLE teachers are encouraged to sustain effective competency-based instructional practices while strengthening differentiated instruction, practical problem-solving, timely feedback, and independent task performance. Learners may actively engage in hands-on activities, apply acquired competencies, and develop greater accuracy, responsibility, and independence in completing tasks. School administrators may provide adequate instructional resources and professional development opportunities to support effective TLE instruction. Curriculum coordinators and TLE program implementers may strengthen the alignment of learning competencies, instructional activities, and assessment practices. The proposed Instructional Enhancement Program may focus on differentiated learner support, authentic problem-solving activities, precision and quality standards, timely feedback, and progressive independence in task performance, supported by periodic monitoring of learners' progress. Future researchers may conduct similar studies across different educational settings and TLE specializations to further examine factors influencing learners' skills acquisition.

REFERENCES

[1] Aguda, K. M. E., & Cuenca, Z. M. (2023). Self-directedness, motivation and students' performance in Technology and Livelihood Education. Psychology and Education: A Multidisciplinary Journal.

[2] ALINEA, J. M., Garcia, C., Lagado, S., & Noblefranca, S. M. (2024). Employability skills of senior high school Tech-Voc students: A measure of industry preparedness. Interdisciplinary Research Review, 19(4).

[3] Awae, R. (2022). Effects of Davies's practical skill teaching model with electrical measuring instrument skills practices on fundamental multimeter usage skills of vocational education diploma students in Narathiwat Polytechnic College. Al-Hikmah Journal, 12(23), 1–13.

[4] Bacovsky-Novak, T. (2023). Operationalising pluriliteracies in a lesson planning tool for vocational CLIL teachers. English Teaching & Learning, 47, 385–402.

[5] Calanog, M. C. B. (2021). Developing technical skills of technology and livelihood education secondary teachers in the province of Batangas. International Journal of Research in Engineering, Science and Management, 4(12), 120-132.

[6] Chen, C. H., Liu, T. K., & Huang, K. (2023). Scaffolding vocational high school students' computational thinking with cognitive and metacognitive prompts in learning about programmable logic controllers. Journal of Research on Technology in Education, 55(3), 527-544.

All rights are reserved by **UIJRT.COM.**

[7] Compen, B., Verstegen, D., Maussen, I., Hülsman, C., & Dolmans, D. (2025). Good practices for differentiated instruction in vocational education: The combined perspectives of educational researchers and teachers. International Journal of Inclusive Education, 29(6), 1017-1034.

[8] Dahlberg, G. M., & Gustavsson, S. (2024). From doing to learning: Students' self-evaluation and reflective practices in VET. Nordic Journal of Vocational Education and Training, 14(2), 55-77.

[9] De Guia, M. D. S. (2024). Learning competencies influence on the work behavior and performance of Technology and Livelihood Education students. EPRA International Journal of Multidisciplinary Research

[10] De Vos, M. E., Baartman, L. K., Van der Vleuten, C. P., & De Bruijn, E. (2024). How do workplace educators assess student performance at the workplace? A qualitative systematic review. Vocations and Learning, 17(1), 165-188.

[11] Dioquino, W. S., & Abellana, A. (2022). Instructional support and professional development on competencies of Technology and Livelihood Education teachers. International Journal on Integrated Education, 5(11), 129-176.

[12] Ferm, L. (2021). Vocational students' ways of handling the academic/vocational divide. International Journal for Research in Vocational Education and Training (IJRVET), 8(1), 1-20.

[13] Garraway, J. (2022). Designing complex, challenging and creative assessments for work preparedness: A review of competency-based assessment. Journal of vocational, Adult and continuing Education and Training, 5(1), 116-135.

[14] Karkkulainen, E., Pihlainen, K., & Kärnä, E. (2023). Feedback methods in vocational education and training for supporting students with learning disabilities and/difficulties in learning: a literature review.

[15] Kim, M. H., & Chang, M. S. (2021). Haircut practice curriculum instruction based on Vygotsky educational theory. Journal of the Korean Society of Cosmetology, 27(2), 464-477.

[16] Mejeh, M., & Held, T. (2022). Understanding the Development of Self-Regulated Learning: An Intervention Study to Promote Self-Regulated Learning in Vocational Schools: Understanding the Development of Self-Regulated Learning: An Intervention Study to Promote Self-Regulated Learning in Vocational Schools. Vocations and Learning, 15(3), 531-568.

[17] Ogoc, N. B. (2024). TECHNOLOGY AND LIVELIHOOD EDUCATION TEACHERS'COMPETENCE AND STUDENTS'ASSESSMENT OF WORK SKILLS AND ATTITUDES. International Journal of Research Publications, 143(1), 74-94.

[18] Putra, R. C., Barliana, M. S., Komaro, M., & Hamdani, A. (2025). Bridging theory and practice: A systematic review of work-integrated learning frameworks in vocational education. Journal of Vocational Education Studies, 8(2), 368-386.

[19] Pylväs, L., Nokelainen, P., & Rintala, H. (2022). Vocational students' perceptions of self-regulated learning in work-based VET. Vocations and learning, 15(2), 241-259.

[20] Raslan, G. (2024, March). The impact of the zone of proximal development concept (scaffolding) on the students problem solving skills and learning outcomes. In BUiD Doctoral Research Conference 2023: Multidisciplinary Studies (pp. 59-66). Cham: Springer Nature Switzerland.

[21] Reganon, A. B. (2022). In-house enhancement training employing competency-based training (CBT) approach on Grade 12 TVL-ICT-CSS practical performance. Department of Education, Division of Zamboanga del Norte.

[22] Sarmiento-Campos, N. V., Lázaro-Guillermo, J. C., Silvera-Alarcón, E. N., Cuellar-Quispe, S., Huamán-Romaní, Y. L., Apaza, O. A., & Sorkheh, A. (2022). A look at Vygotsky's sociocultural theory (SCT): The effectiveness of scaffolding method on EFL learners' speaking achievement. Education Research International, 2022(1), 3514892.

[23] Sripanom, T., Treeratrudee, W., Buaphan, W., Raiwarak, T., & Onprasong, W. (2022). Developing of learning achievement with the demonstration practice package of electric vehicle for students in mechanical education. Vocational Education Central Region Journal

[24] Sublay, E. (2024). Project Competency and Performance Recovery (CPR) and Students' Level of Performance in Technology and Livelihood

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Education. JPAIR Institutional Research Journal, 23(2), 1-1.

[25] Tan, M. C. (2021). Technology and livelihood education (TLE) instruction in the secondary schools in northern Samar division, eastern Philippines. Asian Journal of Advanced Research and Reports, 15(2), 75-84.

[26] Villarroel, V., Melipillán, R., Santana, J., & Aguirre, D. (2024, March). How authentic are assessments in vocational education? An analysis from Chilean teachers, students, and examinations. In Frontiers in Education (Vol. 9, p. 1308688). Frontiers Media SA.

[27] Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.

[28] Winberg, C., & Hollis-Turner, S. (2021). Practical subjects in the vocational curriculum: A critical review of the literature. Journal of Education (University of KwaZulu-Natal), (85), 7-28.

[29] Yusop, S. R. M., Rasul, M. S., Mohamad Yasin, R., Hashim, H. U., & Jalaludin, N. A. (2022). An assessment approaches and learning outcomes in technical and vocational education: A systematic review using PRISMA. Sustainability, 14(9), 5225.

[30] Zhao, Y., & Ko, J. (2024). Orchestrating vocational education classrooms for adaptive instruction and collaborative learning. Cogent Education, 11(1), 2351238.

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