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LEARNER MASTERY AND PERFORMANCE SKILLS IN TECHNOLOGY AND LIVELIHOOD EDUCATION (TLE) AS PERCEIVED BY TEACHERS

Zenie Jay C. Tamagos[1]

[1]Researcher, Rizal Memorial Colleges, Inc.

ABSTRACT

This study aimed to determine the relationship between learner mastery and performance skills in Technology and Livelihood Education (TLE) among junior high school students in the Carmen District, Cotabato Division. The respondents of the study were one hundred eight (108) TLE teachers from various public high schools in the district, all of whom had at least three years of teaching experience and held permanent employment status. A non-experimental quantitative design was employed using the descriptive-correlational method. Learner mastery was assessed in terms of performance, motivation, learning satisfaction, and knowledge construction, while performance skills were measured through work skills and work attitudes. The findings revealed that learner mastery was extensive, with performance being the most developed indicator, and learning satisfaction identified as the least developed. Similarly, performance skills were found to be extensive, with work attitudes more evident than work skills. The results of the study showed a significant relationship between learner mastery and performance skills. The extent of learner mastery was found to influence students' performance skills in the classroom. Furthermore, regression analysis indicated that learning satisfaction and knowledge construction significantly influenced performance skills. However, performance and motivation indicators yielded probability values that did not meet the level of significance, resulting in the acceptance of the null hypothesis. Therefore, these domains did not significantly influence performance skills. Based on these findings, it is recommended that educators prioritize strategies that enhance learning satisfaction and knowledge construction to improve students' performance skills in TLE.

Keywords: learner mastery, performance skills, Technology and Livelihood Education

1. INTRODUCTION

The global demand for skilled labor continues to rise as economies increasingly rely on vocational and technical competencies for sustained development. However, despite the growing importance of technical education, students in Technology and Livelihood Education (TLE) across many regions continue to face serious challenges that hinder the development of performance skills and mastery of competencies. Inadequate resources, outdated teaching strategies, and the underpreparedness of educators remain pervasive issues that compromise the quality of TLE programs. These concerns, though varying in form and degree, are evident at global, national, and local levels.

Globally, technical-vocational education systems struggle with uneven access to modern facilities, which limits hands-on learning. According to UNESCO (2022), many developing countries still lack the infrastructure necessary to provide practical training aligned with industry standards, resulting in limited student exposure to real-world applications. In Sub-Saharan Africa and parts of Southeast Asia, teacher shortages and lack of upskilling opportunities for educators further diminish training quality (ILO, 2021). Moreover, the rapid pace of technological advancement outstrips the capacity of many education systems to update their curriculum and equipment in time, creating a widening gap between what students learn and what industries require (World Bank, 2020).

In the Philippine context, the national government continues to grapple with the long-standing issue of insufficient investment in technical-vocational education. The Philippine Institute for Development Studies (PIDS, 2021) reported that many public schools offering TLE still rely on outdated and insufficient tools, especially in rural and low-income areas. Fabelico and Afalla (2020) emphasized that the lack of continuous teacher training and the limited industry exposure of TLE educators contribute to ineffective instruction. Additionally, despite the mandate of the K to 12 Basic Education Program to enhance employability through specialized tracks, curriculum misalignment and poor monitoring of program outcomes persist (DepEd, 2022).

Locally, these issues are sharply felt in the Carmen South District of the Cotabato Division, where junior high school TLE learners often experience limited access to practical training materials. Padilla (2021) found that rural schools in Mindanao lack industry-standard equipment, leaving students to rely on theoretical instruction with minimal hands-on engagement. Go et al. (2020) further highlighted that the absence of partnerships with local industries diminishes opportunities for learners to experience real-world applications of their skills. Teachers in the area also face challenges in integrating modern pedagogical techniques due to a lack of professional development opportunities and limited technological resources, thereby affecting learner engagement and mastery (Garcia & Yazon, 2020).

In synthesizing these global, national, and local challenges, it becomes clear that a common thread across all levels is the inadequacy of systems to equip learners with relevant, practical skills that align with the demands of today's labor market. While the global discourse points to systemic and technological gaps, the national and local narratives reveal issues in resource allocation, teacher competence, and curriculum implementation. Addressing these interconnected concerns requires not just policy reforms but also empirical research that identifies the extent to which learner mastery and performance skills are shaped by these structural and instructional factors.

This study, therefore, aims to examine the relationship between learner mastery and performance skills of junior high school TLE learners in Carmen South District, Cotabato Division. Specifically, it explores how domains such as performance, motivation, satisfaction, and knowledge construction influence students' work skills and work attitudes. Understanding these relationships is essential in crafting responsive educational strategies that ensure TLE learners acquire not only academic knowledge but also the practical skills necessary for workforce readiness.

The findings of this study are expected to inform TLE curriculum enhancement, targeted teacher training programs, and school-level policy decisions that support learner-centered, skills-based instruction. By illuminating the strengths and gaps in TLE education at the grassroots level, this research contributes to the broader national goal of developing globally competitive Filipino graduates equipped for the demands of the 21st-century workforce.

2. REVIEW OF RELATED LITERATURE

The advancement of Technology and Livelihood Education (TLE) plays a vital role in equipping learners with the skills necessary for practical life and workforce readiness. However, across various educational landscapes, especially in developing contexts, persistent challenges affect learners' mastery and performance skills. This review of related literature explores key domains of learner mastery—namely performance, motivation, satisfaction, and knowledge construction—and their influence on performance skills in terms of work skills and work attitudes. The literature from 2019 to the present underscores both theoretical underpinnings and empirical studies relevant to this research.

Learner Mastery and Its Components

Filgona et al. (2020) defined learner mastery as an outcome combining cognitive and affective components such as performance, motivation, satisfaction, and knowledge construction. Performance reflects the learner's ability to apply acquired knowledge in real tasks. Motivation, both intrinsic and extrinsic, sustains learners' efforts and focus. Satisfaction refers to learners' perceived quality of their educational experience, while knowledge construction emphasizes learners' ability to build and internalize new information through active engagement.

Taghizade and Hajhosseini (2020) found that highly motivated students consistently outperform their peers in knowledge assessments, suggesting that motivation is a significant predictor of academic performance. Similarly, Ikhsan et al. (2019) identified perceived learning outcomes as strong predictors of student satisfaction, reinforcing the idea that content mastery and emotional engagement are closely linked. These findings are particularly relevant to TLE, where mastery requires both theoretical understanding and practical application.

Alderfer (2019) emphasized the non-intellectual role of motivation in fostering students' energy and drive. Meanwhile, Putra (2021) reinforced the notion that students driven by genuine interest or self-actualization tend to demonstrate deeper engagement with tasks. These insights support the Four-Phase Model of Interest Development by Renninger and Hidi (2022), which describes interest as dynamic and influenced by environmental support—a framework applicable to how TLE learners progress through mastery.

Blended Learning and Performance Enhancement

Blended learning strategies, which combine online and face-to-face instruction, were shown by Capone (2022) to improve student autonomy and allow tailored learning experiences. In TLE, where hands-on skills are essential, this approach can increase engagement and support knowledge retention (Sadiq & Alzahrani, 2020). Students exposed to diverse learning stations and multimedia resources show improved problem-solving and collaboration—two essential traits of work readiness.

Hurlbut (2019) stressed that a multimodal learning environment, which combines theoretical and practical methods, is critical for skill mastery. In rural or resource-constrained areas, this integration ensures learning continuity during disruptions like natural disasters or pandemics. Thus, practical learning frameworks must be adapted to suit TLE learners' evolving needs and technological access.

Satisfaction and Engagement in Learning

Student satisfaction is increasingly recognized as a central element of successful educational interventions. Kumar et al. (2021) noted that satisfaction is influenced not only by course quality but also by access to appropriate tools and instructional support. Schnieder (2022) reported that poor usability of learning systems negatively affects student engagement, suggesting that even in technical subjects like TLE, user-centered instructional design is crucial.

Gilbert (2020) and Almusharaf & Khahro (2020) both highlighted that learners are more satisfied when instructors maintain a strong presence and provide timely feedback—key aspects in practical subjects. Thompson & Wu (2023) argued for a more holistic evaluation of course effectiveness by incorporating learner satisfaction alongside test scores. In TLE contexts, where hands-on competence is not fully reflected in exams, such comprehensive metrics are essential.

Knowledge Construction and Active Learning

Constructivist approaches have gained traction in recent years, emphasizing that learning is most effective when students actively engage in creating their understanding. Halverson & Graham (2019) noted that students develop deeper mastery through reflection and collaboration. Wulf (2019) emphasized knowledge construction as a growth-oriented approach, especially critical for learners in technical-vocational tracks.

Martin et al. (2020) found that discussions and collaborative tasks deepen learning, while Cronje (2020) pointed out that peer evaluations and group assignments enhance higher-order thinking. These techniques are especially applicable to TLE, where cooperative learning mimics real-world work environments and nurtures transferable skills.

Performance Skills: Work Skills and Work Attitude

Work skills refer to competencies like tool operation, time management, and problem-solving acquired through repeated practice (Vasathakumari, 2019). On the other hand, work attitude encompasses behaviors such as responsibility, cooperation, and professionalism. Both are foundational to workplace readiness and align with the K to 12 curriculum's goal of producing employable graduates.

According to Kerkhoff (2023), teacher competence is directly linked to student achievement. Majewska (2023) emphasized that educators must possess global competencies to train learners for international labor markets. These findings are echoed locally by Garcia & Yazon (2020), who found that teacher preparedness and curriculum relevance significantly shape students' TLE performance.

Mayasari & Tridyanti (2019) concluded that both work skills and attitudes significantly influence employee performance, underscoring their long-term impact beyond school settings. However, the literature reveals a gap in studies directly correlating learner mastery components with TLE performance skills in the Philippine setting, particularly in rural areas like Carmen South District.

Synthesis and Identified Gaps

The literature reviewed highlights that learner mastery—comprising motivation, satisfaction, performance, and knowledge construction—has a measurable impact on educational outcomes. Furthermore, performance skills, especially in TLE, are multidimensional and influenced by both instructional quality and learning environment. While global and national studies affirm the importance of these elements, there is limited empirical research focusing specifically on their interrelationships in the local Philippine context.

In particular, studies that examine how learner mastery domains influence specific performance skills in TLE remain scarce. Most existing literature addresses these domains independently rather than in an integrated framework. This study aims to fill that gap by analyzing the direct relationships between learner mastery and TLE performance skills among junior high school learners in Carmen South District. It builds upon foundational theories like the Four-Phase Interest Development Model and Rhetorical-Relational Goal Theory to understand how motivational, affective, and instructional factors combine to influence skill development in technical education.

3. METHODOLOGY

This chapter outlines the methodology employed to explore the relationship between learner mastery and performance skills of junior high school students in Technology and Livelihood Education (TLE) within the Carmen South District, Cotabato Division. It presents the research design, ethical considerations, respondents, research instruments, data gathering procedures, and analysis procedures used to ensure a rigorous and systematic approach. The purpose of this study is to provide empirical evidence on how performance skills contribute to learners' mastery of TLE concepts and practices.

Research Design

This study utilized a non-experimental quantitative correlational research design. Correlational research is appropriate for examining the extent to which variables are related, without manipulating any of them (Creswell & Creswell, 2020). The design aimed to establish the strength and direction of the relationship between the variables—learner mastery and performance skills—using standardized instruments and statistical analysis. This approach enabled the researcher to analyze naturally occurring variables in an educational setting, offering insights that are applicable to curriculum improvement and pedagogical decision-making (Check & Schutt, 2021; Gall et al., 2020).

Ethical Considerations

Ethical research practices were observed to uphold the dignity, rights, and welfare of the participants. The study adhered to the guidelines of the National Ethical Guidelines for Health and Health-Related Research (DOST-PCHRD, 2021) and the Data Privacy Act of 2012. Informed consent was obtained from all teacher-participants, and parental consent with student assent was secured for minor participants. Confidentiality was maintained by anonymizing all personal data, and participation was strictly voluntary, with the right to withdraw at any time (Babbie, 2020). The study also underwent ethics clearance from the Institutional Ethics Committee before any data collection began.

Respondents

The respondents included all junior high school TLE teachers from public schools in Carmen South District. Total enumeration was employed, allowing every qualified TLE teacher (N=108) with at least three years of teaching experience to participate. This method ensured representativeness and minimized sampling bias (Etikan et al., 2020). The selection criteria were aligned with the goals of the study to gather reliable data from experienced educators who could objectively assess learner mastery and performance skills in TLE.

Research Instruments

The primary data collection tool was an adapted and validated questionnaire originally developed by Gonzales (2021), modified to reflect the specific competencies and context of TLE instruction in Carmen South. The questionnaire consisted of two sections: (1) learner mastery indicators—motivation, performance, satisfaction, and knowledge construction; and (2) performance skills—work skills and work attitudes. The questionnaire used a 5-point Likert scale ranging from “Not Extensive” to “Very Extensive.” Content and construct validity were established through expert validation and a pilot test, resulting in a Cronbach’s alpha of 0.736, indicating acceptable reliability (Taber, 2021; Taherdoost, 2022).

Data Gathering Procedure

The researcher secured formal approval from the Schools Division Superintendent, District Supervisors, and school principals. Endorsement from the Graduate School Dean was also obtained. Data collection occurred between April and May 2025, using printed questionnaires administered face-to-face following COVID-19 health protocols. Teachers completed the instruments during scheduled sessions and returned them immediately, allowing the researcher to verify completeness and accuracy on-site. All retrieved data were logged and secured to prevent unauthorized access (Bryman, 2021; Creswell & Guetterman, 2021).

Data Analysis Procedures

Statistical analysis was conducted using SPSS Version 27. Descriptive statistics (mean and standard deviation) were used to determine the extent of learner mastery and performance skills. Pearson’s correlation coefficient (r) assessed the strength and direction of the relationship between the variables (Field, 2022). Furthermore, linear regression analysis identified the predictive power of performance skills on learner mastery. All statistical tests were set at a 0.05 level of significance to ensure that the results were statistically valid and generalizable (Cohen et al., 2020).

4. RESULTS

This chapter presents the quantitative results of the study titled *“The Relationship Between Learner Mastery and Performance Skills of Junior High School TLE Learners in Carmen South District, Cotabato Division.”* The findings are based on descriptive statistics, Pearson correlation, and regression analyses conducted on survey data. The results focus on the extent of learner mastery (performance, motivation, satisfaction, and knowledge construction) and learner performance skills (work skills and work attitude), as well as the relationship and predictive influence between these variables. The analysis was conducted using SPSS, and findings are presented through means, standard deviations, correlation coefficients, and regression statistics. Recent literature from 2019 to 2024 is cited to support the findings' significance and relevance in the current educational landscape.

The descriptive results revealed that among the indicators of learner mastery, performance attained the highest mean (M = 4.25), interpreted as "Very Extensive," indicating a high level of student engagement in hands-on TLE activities. This supports the findings of Taghizade and Hajhosseini (2020), who found that motivation and performance are closely tied to learning effectiveness in technical education environments. In contrast, satisfaction recorded the lowest mean (M = 3.11), categorized as "Moderately Extensive." This implies that while students generally perform well, their emotional and affective experiences in learning may require further attention, aligning with the results of

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Kumar et al. (2021) and Hurlbut (2019), who emphasized that learner satisfaction is often influenced by workload and instructional delivery in blended and practical learning environments.

In terms of motivation, the study recorded an overall mean of 4.00 (Extensive), confirming Alderfer's (2019) assertion that intrinsic learning drive is central to learner achievement. Putra (2021) also emphasized that passion and persistence are vital in practical subjects such as TLE. Furthermore, learner mastery in knowledge construction obtained an overall mean of 4.11 (Extensive), showing that students engage effectively in collaborative and experiential learning, which is essential for long-term skills acquisition. Martin et al. (2020) and Rehman and Fatima (2021) observed similar outcomes in settings that emphasized cooperative learning strategies and applied knowledge.

For the performance skills of learners, the data revealed that work attitude ($M = 4.27$) was rated higher than work skills ($M = 3.58$), suggesting that learners demonstrate strong positive attitudes toward work but may need support in refining specific skills such as project creation or equipment handling. This is consistent with the findings of Kerkhoff (2023) and Bailey (2020), who identified teacher quality and practical application as essential for student development in vocational education.

The Pearson correlation analysis revealed a statistically significant and moderately strong positive relationship between learner mastery and performance skills ($r = 0.62$, $p = 0.013$). This supports Filgona et al. (2020), who concluded that learner outcomes in TLE are shaped by a combination of cognitive (performance, knowledge) and affective (motivation, satisfaction) domains. Cheng (2020) similarly highlighted that motivation and satisfaction contribute to improved academic engagement and performance.

The regression analysis further confirmed that learner mastery significantly predicts performance skills ($R^2 = 0.896$, $F = 113.370$, $p < .001$). Specifically, the dimensions of satisfaction and knowledge construction showed statistically significant influence on performance skills, while performance and motivation did not, which may suggest the need to explore how emotional and cognitive engagement differentially contribute to skill-based learning outcomes. These results reflect the assertions of Namakshi et al. (2022) regarding the importance of assessment feedback in enhancing student performance and responsiveness.

The findings emphasize the interconnected nature of mastery and practical application in TLE education. They reflect current research in technical and vocational education globally, such as that by Dwivedi (2019), Zimmerman and Kitsantas (2019), and Curran (2023), who collectively agree that student confidence, instructional design, and skill assessment are key contributors to learner success in applied learning environments.

5. CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of findings and draws conclusions based on the quantitative data obtained regarding the relationship between learner mastery and performance skills of junior high school learners in Technology and Livelihood Education (TLE) in the Carmen South District, Cotabato Division. The chapter also provides actionable recommendations to various educational stakeholders. Anchored on the principle that education must empower learners with both theoretical knowledge and applicable life skills, this study reinforces the idea that mastery of learning domains directly supports performance in vocational contexts—especially in TLE subjects (Filgona et al., 2020; Martin et al., 2020).

Summary of Findings

The study revealed that the extent of learner mastery, measured through performance, motivation, satisfaction, and knowledge construction, was extensive ($M = 3.86$). Similarly, learners' performance skills in terms of work skills and work attitude were also rated as extensive ($M = 3.92$). Correlational analysis revealed a statistically significant and moderately strong relationship between learner mastery and performance skills ($r = 0.62$, $p < 0.05$), with regression analysis confirming that learner mastery explained 89.6% of the variance in learners' performance skills ($R^2 = 0.896$).

However, among the domains, satisfaction ($p = 0.014$) and knowledge construction ($p = 0.013$) showed significant influence on performance skills, while performance and motivation did not significantly contribute to the predictive model. These findings echo the conclusions of Kumar et al. (2021) and Rehman & Fatima (2021), who emphasized the role of **cognitive engagement and learner-centered experiences in influencing skill application.**

Conclusion

This study concludes that learner mastery is a critical component of performance skill development in TLE education. Students who exhibit mastery, particularly in the affective (satisfaction) and cognitive (knowledge construction) domains, are more likely to translate their learning into practical work-related competencies. The lack of significance in the direct impact of performance and motivation on performance skills suggests that skill acquisition is not solely driven by participation or interest but is more deeply rooted in how learners internalize and construct their knowledge.

These findings support the assertion of Zimmerman and Kitsantas (2019) that effective learning environments should promote both mastery of content and reflection on learning processes. Moreover, the results highlight that a student's satisfaction with learning and their capacity to construct meaningful knowledge are essential for developing applicable skills, particularly in practical subjects like TLE (Cheng, 2020; Kerkhoff, 2023).

Recommendations

To the Department of Education (DepEd)

DepEd is encouraged to integrate these findings into the national curriculum reform efforts, emphasizing the importance of satisfaction and knowledge construction in TLE instruction. Policy frameworks should support experiential learning approaches, the development of reflective practices, and the inclusion of learner feedback in instructional design (Bailey, 2020; Namakshi et al., 2022). Further, the allocation of resources to teacher upskilling and school infrastructure can enhance the implementation of contextualized and authentic learning experiences.

To School Heads and Administrators

School leaders must foster environments that support project-based and reflective learning strategies. They should also ensure that teachers have access to ongoing professional development focused on learner engagement, classroom feedback systems, and the integration of theory into practice (Kumar et al., 2021; Hurlbut, 2019). Data from this study may be used to guide school improvement plans that enhance learner satisfaction and deepen knowledge construction.

To Teachers

TLE teachers are advised to evaluate and refine instructional approaches by placing stronger emphasis on learner satisfaction and collaborative learning experiences. Methods that incorporate discussion, real-world application, and peer feedback are more likely to yield performance gains (Martin et al., 2020; Rehman & Fatima, 2021). Teachers should also make use of formative assessments that encourage student reflection and self-regulated learning.

To Future Researchers

Future studies may explore longitudinal models of learner mastery and its evolving impact on various academic disciplines. Researchers may also investigate how teacher-related variables (e.g., instructional competence, emotional intelligence) interact with learner mastery and performance (Kerkhoff, 2023). In addition, qualitative studies that capture student narratives may further illuminate how satisfaction and knowledge construction shape long-term learning outcomes.

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