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Pedagogical Practices and Student Involvement in Technology and Livelihood Education Activities: A Case Study at Hungduan National High School, Ifugao

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Abstract

Student involvement is central to effective Technology and Livelihood Education (TLE) because learning outcomes in skills-oriented subjects depend on active participation, guided practice, and authentic performance tasks. This qualitative case study examined how pedagogical practices shaped student involvement in TLE activities at Hungduan National High School, Ifugao. Data were generated through semi-structured interviews with TLE teachers and selected students, classroom and activity-site observations, and document review (lesson plans, performance task rubrics, activity outputs). Thematic analysis produced four themes: (1) experiential and task-based pedagogy as the driver of participation, (2) scaffolding and coaching during skill performance, (3) collaborative production and peer learning, and (4) contextual constraints and adaptive instructional strategies. Findings indicate that student involvement was most evident when teachers used demonstration–practice cycles, clear role assignment, and formative feedback aligned with performance tasks. Constraints such as limited tools, time, and space were managed through rotation systems, locally available materials, and adjusted task designs. The study contributes qualitative evidence on the pedagogical conditions that support sustained student involvement in rural TLE contexts and offers actionable implications for instruction, resource planning, and school-based program support.

Keywords: Technology and Livelihood Education, pedagogy, student involvement, experiential learning, qualitative case study, rural education

Introduction

Technology and Livelihood Education (TLE) is designed to develop practical competencies, work values, and applied knowledge that learners can use in everyday life and future livelihood contexts. As a skills-based learning area, TLE requires pedagogical approaches that go beyond content transmission and emphasize performance, practice, and feedback. Learning research consistently shows that students learn more effectively when they actively construct understanding through meaningful tasks and when instruction supports the application of knowledge in authentic contexts (Bransford, Brown, & Cocking, 2000).

Student involvement shown through participation, effort, collaboration, and persistence in learning tasks is a key process indicator in performance-based subjects. Instructional synthesis literature suggests that learning outcomes improve when students are engaged in visible learning processes such as clear success criteria, feedback, and deliberate practice opportunities (Hattie, 2009). In TLE, student involvement is not only cognitive but also behavioral and procedural, as learners must handle tools, follow processes, and meet safety and quality standards during activities.

Experiential learning perspectives further explain why involvement is essential in TLE. When learners engage in concrete experience, reflect on outcomes, and refine their actions, skills become internalized and transferable (Kolb, 2015). The teacher's role, therefore, shifts toward facilitating experiences, scaffolding performance, and guiding learners' reflection. This aligns with socio-cultural views of learning in which competence develops through guided participation and interaction with more knowledgeable others (Vygotsky, 1978).

However, classroom realities especially in rural and resource-constrained settings shape how such pedagogies are enacted. Teachers may face limited equipment, large class sizes, competing schedules, and contextual demands that influence how TLE activities are delivered. While studies have discussed learner-centered and experiential instruction broadly, fewer qualitative studies illuminate how specific pedagogical practices sustain student involvement in TLE activities within localized contexts. This case study addresses this need by examining pedagogical practices and student involvement in TLE at Hungduan National High School, Ifugao.

Research Objectives

This study aimed to explore pedagogical practices and student involvement in Technology and Livelihood Education activities at Hungduan National High School, Ifugao. Specifically, it sought to describe the pedagogical practices used by TLE teachers during activity-based instruction, examine how students experienced and participated in TLE activities, and analyze how classroom and contextual conditions shaped the ways teachers facilitated student involvement in skills performance tasks.

Methodology

This research employed a qualitative case study design to develop an in-depth understanding of pedagogy and student involvement in a bounded setting TLE activity implementation at Hungduan National High School. Purposive sampling was used to select participants with direct experience in the phenomenon, including TLE teachers and students who regularly participated in TLE activities. Data were generated using semi-structured interviews, non-participant observations of TLE activity sessions, and document review (lesson plans, task sheets, rubrics, and selected student outputs). Interviews focused on teaching strategies, participation patterns, challenges, and perceived learning. Observations attended to instructional flow (demonstration, guided practice, independent practice), interaction patterns, and learner participation. Data were analyzed using thematic analysis through iterative coding, categorization, and theme refinement, supported by triangulation across interviews, observations, and documents to enhance credibility and consistency (Miles, Huberman, & Saldaña, 2014; Stake, 1995).

Results and Findings

Theme 1: Experiential and task-based pedagogy as the driver of participation

Teachers emphasized that student involvement increased when lessons were organized around tangible outputs (e.g., product creation, performance tasks, or process demonstrations) rather than extended lecture. Observations showed that activity sessions typically began with a brief concept introduction, followed by demonstration and immediate practice.

A teacher explained: *"Kapag pinapagawa mo agad, mas gumagalaw sila. Mas nakikita nilang may output at may*

purpose.”

A student shared: *“Mas gusto namin ‘yong may ginagawa talaga, kasi doon namin naiintindihan.”*

These accounts indicate that task-based and experiential lesson structures encouraged student participation by making learning goals explicit, observable, and closely tied to performance outcomes. When lessons were organized around concrete tasks and clearly defined outputs, learners were able to understand what was expected of them and how their actions contributed to successful task completion. This clarity transformed learning goals from abstract objectives into tangible targets, motivating learners to engage actively in the process. Moreover, positioning activities as the central component of instruction allowed learners to construct understanding through direct engagement, as concepts were introduced and reinforced in relation to the task at hand. As a result, the activity itself functioned as an anchor for learning, sustaining students’ attention, effort, and persistence throughout the lesson and fostering deeper involvement in Technology and Livelihood Education activities.

Theme 2: Scaffolding and coaching during skill performance

Student involvement was sustained when teachers provided step-by-step scaffolds, safety reminders, and “just-in-time” coaching while learners performed tasks. Teachers used guided questioning, corrective feedback, and short re-demonstrations when students encountered difficulty.

One teacher noted: *“Hindi puwedeng iwan lang sila kailangan i-check mo ang steps kasi may safety at quality.”*

A student reported: *“Kapag chine-check ni Ma’am, mas confident kami... alam namin kung saan kami nagkamali.”*

This theme suggests that student involvement deepened when learners received structured instructional support during task performance. Through timely coaching, step-by-step guidance, and immediate corrective feedback, teachers helped learners overcome uncertainty and hesitation, particularly during tasks that required precision, proper sequencing, or the use of tools. Such support enhanced learners’ accuracy and confidence, enabling them to persist even when tasks became challenging. By providing scaffolding at critical moments, teachers reduced the risk of disengagement and error, while simultaneously reinforcing correct procedures and safety practices. Consequently, structured coaching functioned as a key pedagogical mechanism that sustained learner involvement and facilitated the development of practical competencies in Technology and Livelihood Education.

Theme 3: Collaborative production and peer learning strengthened involvement

Teachers frequently organized students into small groups with clearly defined roles such as materials manager, recorder, and process lead to structure participation during TLE activities. This role-based grouping promoted accountability and ensured that each learner had a specific responsibility within the task, thereby preventing passive participation. Learners described teamwork as a motivating factor, noting that shared responsibilities and peer support made tasks more manageable and engaging. In addition, group organization functioned as a practical instructional strategy for addressing contextual limitations, particularly the scarcity of tools and restricted time allotments. By distributing tasks and rotating responsibilities, teachers were able to maximize student involvement while maintaining efficiency and order during activity-based lessons. As a result, collaborative grouping not only enhanced learner motivation and social interaction but also supported equitable access to learning opportunities in resource-constrained classroom settings.

A learner stated: *“Mas mabilis pag may group. May toka-toka, tapos nagtuturoan kami.”*

A teacher added: *“Group work helps lalo na kung kulang ang materials, everyone still participates.”*

Collaboration functioned as a structured participation mechanism that enabled a greater number of students to remain actively involved in learning activities even when instructional resources had to be shared. By working in groups and assuming complementary roles, learners were able to engage simultaneously in planning, execution, and monitoring of tasks despite limited tools or materials. This collaborative arrangement minimized idle time and ensured continuous participation across the class. In addition, peer learning emerged as a valuable feature of collaboration, as students informally coached one another, demonstrated techniques, and jointly addressed challenges encountered during task performance. Through shared problem-solving and mutual support, learners reinforced procedural understanding and refined skills, contributing to deeper engagement and more effective learning in Technology and Livelihood Education activities.

Theme 4: Contextual constraints and adaptive instructional strategies

Teachers identified several contextual challenges, including limited availability of equipment, constrained time

allotments within the school schedule, and space limitations for conducting certain Technology and Livelihood Education activities. These constraints had the potential to restrict learner participation and disrupt the flow of activity-based instruction. To sustain student involvement despite these limitations, teachers employed adaptive instructional strategies such as implementing rotation systems that allowed groups to take turns using available tools, improvising materials from locally accessible resources, and designing staggered task schedules to manage time and space more effectively. These adaptations enabled teachers to maintain continuity of learning activities while ensuring that all learners had opportunities to participate meaningfully. The use of such flexible strategies highlights teachers' responsiveness to contextual realities and their commitment to sustaining active engagement in skills-based instruction, even in resource-constrained learning environments.

A teacher explained: *"Kung kulang ang tools, rotation ang solution. May schedule per group para lahat makagamit."*

A student shared: *"Kahit hindi kumpleto ang gamit, nakakasali pa rin kami kasi by tun."*

This theme indicates that teacher adaptability was central to sustaining student involvement in Technology and Livelihood Education activities. Rather than discontinuing instruction when faced with constraints, teachers proactively modified task designs, adjusted instructional pacing, and reorganized classroom and activity spaces to accommodate available resources and time. By redesigning tasks to be completed in stages, rotating roles among learners, and restructuring group arrangements, teachers were able to maintain equitable participation and ensure continuity of practice for all students. These adaptive practices minimized disruptions to learning and reinforced a consistent engagement with skills development, demonstrating how pedagogical flexibility functions as a critical mechanism for sustaining active student involvement in resource-limited educational contexts.

Discussion

The findings align with learning research emphasizing that students learn more effectively when instruction is anchored in meaningful tasks and when learners actively engage in constructing knowledge through practice (Bransford et al., 2000). In this case, task-based TLE sessions provided concrete purposes that strengthened learners' behavioral involvement and sustained engagement during skill performance. The demonstration-practice cycle observed in lessons also resonates with evidence that clarity of goals and feedback loops support learning progression (Hattie, 2009).

The prominence of scaffolding and coaching reflects experiential learning perspectives in which learners develop competence through cycles of action, feedback, and refinement (Kolb, 2015). The teacher's guided support during performance tasks mirrored socio-cultural accounts of learning where competence develops through mediated participation, particularly when tasks are complex or require procedural accuracy (Vygotsky, 1978). Importantly, coaching also supported learner confidence, which helped sustain participation during demanding activities.

Collaborative production and peer learning in this study highlight how student involvement can be structured socially. Group roles enabled equitable participation and served as an organizational response to limited resources, while peer teaching functioned as informal scaffolding. These findings also connect with broader perspectives on teacher leadership and classroom organization, where instructional coherence is strengthened when learning structures (roles, routines, feedback) are deliberately designed to keep students productively engaged (York-Barr & Duke, 2004).

Finally, contextual constraints and adaptive strategies underscore the practical realities of implementing activity-based instruction in resource-limited settings. Teachers' rotation systems and improvisation illustrate how pedagogical responsiveness can sustain involvement even under constraints. This supports methodological insights from qualitative education research that local context and teacher agency meaningfully shape how programs and pedagogies are enacted in practice (Miles et al., 2014; Stake, 1995).

Conclusions and Implications

This qualitative case study concludes that student involvement in TLE activities at Hungduan National High School was sustained through pedagogical practices that emphasized experiential, task-based instruction; coaching and scaffolding during performance; collaborative structures that promote participation; and adaptive strategies that respond to contextual constraints. Student involvement was consistently described not only as participation but also as persistence, teamwork, and increased confidence during skills practice.

Implications for practice include strengthening demonstration-practice-feedback cycles, designing clear group roles to maintain equitable participation, and institutionalizing rotation systems when tools are limited. Implications for school leadership include supporting teachers through improved resource allocation, activity scheduling, and provision of safe spaces for TLE tasks. Implications for curriculum and training include professional

development focused on performance-based assessment, scaffolding strategies, and contextualized TLE task design. Future qualitative work may extend this inquiry by examining multiple schools or exploring student narratives across varied TLE specializations to enrich understanding of involvement in skills-based learning contexts.

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