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Understanding students' engagement and learning experiences in livelihood and technology education: A qualitative study in a hybrid learning environment

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Abstract: This study explored the engagement and learning experiences of students in Livelihood and Technology Education (LTE) within hybrid learning environments in selected rural schools in SOCKSARGEN. Using a qualitative phenomenological approach, thirteen (13) LTE graduates were purposively selected as participants. Data was gathered through semi-structured interviews and analyzed using thematic analysis. Five major themes emerged: challenges in practical application, the dual role of technology, factors influencing engagement, experiential learning preferences, and improvement needs. Results showed that while students appreciated the flexibility of hybrid learning, they faced barriers such as limited resources and unstable connectivity. The study concluded that addressing technological gaps, enhancing teacher training, and improving learning facilities are critical to strengthening hybrid LTE delivery. Strengthening school-community partnerships and blended instructional strategies can help provide meaningful and effective learning experiences for students.

Keywords: Hybrid Learning, Student Engagement, Livelihood and Technology Education, Rural Education, Technical-Vocational Learning

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INTRODUCTION

The flexibility and support for 21st-century skills made hybrid learning a popular educational approach even beyond the COVID-19 pandemic (Ghosh, Upadhyay, & Mathur Mitra, 2022, 9). This methodology was aligned with global trends toward digital literacy, lifelong learning, and accommodating diverse learning styles. Even before the pandemic, educational systems began integrating hybrid strategies, which continued as a sustainable approach in post-pandemic education.

In the Philippine context, Livelihood and Technology Education (LTE) aimed to equip students with practical skills in agriculture, home economics, and industrial arts to prepare them for workforce readiness (Rodriguez & Habla, 2023). However, transitioning LTE programs into a hybrid modality posed unique challenges. Students encountered difficulties acquiring necessary tools, materials, and stable internet connectivity in virtual learning contexts, making it challenging

to replicate the authentic hands-on experiences required in these subjects (Mäkiö, Assaad, Mäkelä, & Kankaanranta, 2017). Although virtual simulations and at-home learning kits emerged as alternatives, they could not fully substitute in-person instruction, particularly in rural areas with limited resources (Carreon, 2018).

Successful hybrid learning required emotional, behavioral, and cognitive engagement from students (Venugopal & Jain, 2015). Emotional engagement reflected students' passion and attachment to learning activities, behavioral engagement involved active participation, and cognitive engagement signified deep understanding of content. However, as peer interaction and face-to-face activities decreased in hybrid LTE settings, levels of engagement and meaningful learning outcomes tended to decline (Ghosh et al., 2022).

Research on hybrid learning in technical-vocational education is expanding, yet rural studies, particularly in the SOCKSARGEN region, remain limited. The region's infrastructural challenges and distinct labor market need highlight perspectives that differ from urban educational settings (Sacramento, 2024). Recognizing this gap, the present study aimed to explore the hybrid learning experiences of LTE students in rural SOCKSARGEN, specifically focusing on how hybrid modalities influenced student engagement and learning outcomes.

The results of this study aimed to provide practical recommendations for educators, curriculum developers, and policymakers on integrating technology effectively and allocating resources equitably in rural settings. Addressing these issues may contribute to improving the delivery of rural technical education programs and offer insights relevant to global efforts in enhancing hybrid vocational training.

The transition to hybrid learning in technical-vocational education presents significant challenges in ensuring equitable access to resources and fostering consistent student engagement. Learners in rural areas continue to face limited access to technology and internet connectivity, hindering their full participation and affecting the quality of hybrid learning experiences.

Problem Statement

This study aimed to investigate student participation and learning experiences in Livelihood and Technology Education (LTE) courses within a hybrid learning environment in selected schools in the SOCKSARGEN region.

Specifically sought to respond to the following questions:

1. How did hybrid learning help students engage in Livelihood and Technology Education?
2. What factors influenced how students engaged in hybrid Livelihood and Technology Education?
3. What were students' perceptions about their experiences with both online and face-to-face learning in Livelihood and Technology Education?
4. What are the challenges faced by students in learning both online and in-person for Livelihood and Technology Education?
5. How could hybrid learning in Livelihood and Technology Education be improved to make students more interested and learn better?

METHODOLOGY

The study employed transcendental phenomenology to explore and capture the lived experiences of students engaged in hybrid Learning and Teaching Experiences (LTE). Rather than following a conventional "search strategy" as seen in systematic reviews, the qualitative approach framed its search strategy around participant identification and selection. Specifically, the research was

conducted in selected rural schools within the SOCKSARGEN region that offered hybrid LTE programs, with participants chosen through purposive sampling. The selected participants were 2024 graduates of the Bachelor of Technical-Vocational Teachers Education (BTVTEd) program who had completed both the online and face-to-face components of their curriculum.

Data extraction in this context involved gathering rich qualitative information through semi-structured interviews guided by a researcher-made interview tool. These interviews aimed to uncover how students engaged with and navigated the hybrid learning environment. Using Moustakas' (1994) thematic analysis approach, the research team carefully transcribed the interviews verbatim, identified significant statements from participants' narratives, and formulated meanings derived directly from their lived experiences. These meanings were then clustered into emergent themes, which notably included instructional gaps, assessment difficulties, and challenges related to adaptation within the hybrid setup. To ensure the trustworthiness of these findings, the study employed validation methods such as member checking, peer debriefing, and expert consultation.

Finally, the research upheld strict ethical considerations, ensuring that all participants provided informed consent and that their confidentiality, privacy, and voluntary participation were fully respected throughout the research process.

DISCUSSION OF FINDINGS

Students' Engagement in Livelihood and Technology Education

Students experienced significant challenges in maintaining engagement during hybrid Livelihood and Technology Education (LTE) courses, particularly in skill-based components such as ICT, Agriculture, and Industrial Arts. Many students struggled to sustain their attention and interest because they lacked the hands-on opportunities essential to vocational learning. Without access to proper tools, equipment, or guided demonstrations, students found it difficult to apply theoretical knowledge to real-world tasks. This gap between theory and practice diminished their motivation, reduced the depth of their learning, and limited their ability to develop practical competencies. As a result, students often became passive learners, focusing more on completing online requirements rather than engaging meaningfully with course content. This disconnect highlights the critical importance of integrating practical, hands-on activities into hybrid learning models to sustain student engagement and ensure meaningful skill development in LTE.

Factors that Influence How Students Engage in Hybrid Livelihood and Technology Education

Student engagement in hybrid Livelihood and Technology Education is influenced by a complex interplay of motivational factors, social interactions, technological access, learning environments, and self-directed learning skills. While hybrid learning offers flexibility and autonomy, it also presents challenges, particularly for students who face connectivity issues, lack digital resources, or struggle with time management. Positive engagement is strongly supported by clear goals, active teacher and peer interaction, and access to both online and hands-on learning opportunities. Addressing barriers such as limited technological access, inadequate home learning spaces, and lack of structured support is essential to maximizing the potential of hybrid learning. These insights underscore the need for targeted interventions that combine institutional resources, instructional design improvements, and student-centered support systems to enhance engagement and learning outcomes in hybrid LTE settings.

Students' Experiences in Hybrid Learning

Students' experiences in hybrid Livelihood and Technology Education (LTE) reflect a balance of opportunities and challenges. Many students valued the flexibility and autonomy hybrid learning provided, allowing them to balance school with personal and family responsibilities. The ability to study at their own pace increased motivation for some, but others struggled with self-discipline, time management, and staying on track.

Technological challenges, including unstable internet and lack of devices, emerged as significant barriers that limited participation and focus. Students also noted that while online learning effectively delivered theoretical content, it could not fully replace the hands-on training needed to master technical skills. Without face-to-face workshops or guided practice, students felt less prepared to apply their learning in real-world contexts.

Moreover, managing blended modes which combine online, face-to-face, and independent work — sometimes overwhelmed students, particularly when clear guidance and support were lacking. These experiences highlight the need for schools to address resource gaps, provide structured hybrid learning plans, and ensure that students receive both practical training and consistent academic support.

Challenges Faced by Students in Hybrid Learning

The study identified multiple challenges faced by students in hybrid Livelihood and Technology Education (TLE), including technological barriers, limited access to learning facilities, financial constraints, time management difficulties, and reduced motivation. Students often struggled to balance academic demands with household responsibilities, navigate unreliable internet connections, and adapt to self-directed learning. These difficulties were particularly pronounced in skill-based subjects where hands-on practice and real-time feedback are essential. The findings highlight the need for schools to provide stronger institutional support, improve technological and learning infrastructure, and implement context-sensitive strategies such as device loan programs, internet subsidies, structured schedules, and financial aid. Addressing these challenges is essential to creating a more equitable and supportive hybrid learning environment.

Suggestions to Improve Hybrid Learning to Make Students More Interested and Learn Better

The study highlights several key areas for improving hybrid Livelihood and Technology Education (TLE) to boost student interest and learning outcomes. Students emphasized the need for better learning facilities, enhanced hands-on learning opportunities, improved access to technology and stable internet, and stronger institutional support for time management and online engagement. While hybrid learning offers flexibility, its success depends on balancing digital tools with practical, experiential activities. Addressing financial and technological barriers, providing clear course structures, and offering interactive and supportive learning environments are critical. To ensure equitable and meaningful learning, schools must adopt inclusive strategies that combine resource provision, structured guidance, and opportunities for student autonomy, creating a more engaging and effective hybrid education system.

CONCLUSION

The study revealed that hybrid learning provided flexibility and accessibility for BTVTEd students but also introduced significant challenges, particularly in resource-limited rural areas. Students valued the convenience and autonomy of hybrid education but struggled with maintaining engagement due to technological limitations, financial burdens, and a lack of immediate hands-on guidance in technical subjects.

The effectiveness of hybrid learning heavily depended on reliable access to technology, students' self-discipline, and peer support systems. Emotional, behavioral, and cognitive engagement were crucial in determining the success of hybrid learning experiences, aligning with Constructivist Learning Theory and Engagement Theory frameworks applied in the study.
Students demonstrated resilience by developing self-directed learning skills and leveraging online tools; however, their learning experiences were notably enriched when hybrid education was complemented by in-person activities and supportive teacher-student interactions.

Improving hybrid learning for technical-vocational programs required addressing infrastructural gaps, strengthening teacher training in digital instruction, promoting blended approaches that balance online and practical activities, and ensuring equitable resource distribution across rural educational settings.

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