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TEACHERS' CREATIVITY AND CRITICAL THINKING DISPOSITION AS PREDICTORS OF STUDENTS' ENGAGEMENT IN TECHNOLOGY AND LIVELIHOOD EDUCATION CLASSES

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Abstract:
This study examined whether teachers' creativity and teachers' critical thinking disposition predicted students' engagement in Technology and Livelihood Education (TLE) classes. Using a quantitative, descriptive–correlational approach, data were gathered from Senior High School learners enrolled in the Technical-Vocational strand in public schools. Stratified random sampling were used and a total of 300 respondents answers the standardized survey instruments to assess teachers' creativity, teachers' critical thinking disposition, and students' engagement in terms of cognitive, affective, and behavioral dimensions. Results showed that teachers' creativity and critical thinking disposition were generally high, and students' engagement in TLE classes was likewise high across engagement domains. Correlational analysis revealed significant positive relationships between teachers' creativity and students' engagement, and between teachers' critical thinking disposition and students' engagement, indicating that learners tended to be more engaged when teachers demonstrated stronger creative practices and reflective, open-minded thinking dispositions. Regression analysis further showed that teachers' creativity and critical thinking disposition significantly influenced student engagement, both independently and when combined, suggesting that these teacher-related factors explained variation how students participated, persisted, and invested effort in learning tasks. The study contributed to literature by examining the combined role of teachers' creativity and critical thinking disposition as predictors of student engagement within a TLE context and offered guidance for teacher development.

SDG Indicators: #4 Quality Education, #8 Decent Work and Economic Growth

Keywords: teachers' creativity, critical thinking disposition, student engagement, technical vocational education, Philippines

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1. Introduction

Student engagement remains a central concern in education because it influences learning, achievement, well-being, persistence, and graduation. In secondary education, teachers face increasing difficulty in maintaining attention, participation, and sustained effort among learners. This concern is particularly evident in the Philippine setting, where teachers are expected to deliver learner-centered instruction while also managing paperwork, training requirements, and the continuous preparation of instructional materials.

Technology and Livelihood Education (TLE) is especially sensitive to engagement because it depends not only on students' understanding but also on their willingness to participate, complete outputs, and persist in performance-based tasks. In this context, teacher-related factors may help explain why learners become cognitively invested, emotionally connected, and behaviorally involved in classroom activities.

This study focused on two teacher-related predictors: teachers' creativity and teachers' critical thinking disposition. The study was grounded in the view that creative and reflective teaching practices support 21st-century learning by making instruction more meaningful, responsive, and engaging. The study therefore examined the levels of these variables, their relationships with students' engagement, and their predictive influence in TLE classes.

Critical and creative thinking are central to this study because they clarify the connection between teachers' creativity, their critical thinking disposition, and students' engagement in TLE. Bloom and Doss (2019) highlight that these higher-level skills are key goals in 21st-century education, as they shape how students approach problems, generate ideas, and make well-informed decisions. In the classroom, critical thinking and creativity go hand in hand: critical thinking helps assess and improve ideas, while creativity allows for fresh and meaningful responses, making learning more purposeful and engaging (Justyna, 2016). Research supports this claim, showing that critical and creative thinking are strongly linked to teachers' creative behaviors and classroom environments that actively involve students and encourage their participation (Siburian *et al.*, 2019; Wechsler *et al.*, 2018). These skills can be taught and developed through practice, enabling teachers to design strategies that sustain student participation and engagement (Anderson *et al.*, 2001). Research also shows that critical, reflective, and creative thinking are tied to better academic engagement and achievement (Akpur, 2020), and that collaborative learning environments help nurture these interconnected skills (Adriansen, 2019).

2. Teacher Creativity in Education

Teacher creativity refers to the ability to generate and apply novel, contextually appropriate instructional ideas that make learning engaging and meaningful. In the manuscript, creativity is manifested through planning the teaching-learning process,

responding to students' questions with elaborated answers, fostering enthusiasm for learning, selecting methods that fit the lesson and learner conditions, creating motivating instructional media, and interacting effectively with students. Prior studies cited in the manuscript link these creative practices with stronger participation, autonomy support, and sustained classroom engagement.

2.1 Critical Thinking Disposition of Teachers

Critical thinking disposition is presented as a teacher's tendency to approach classroom decisions with reflective judgment, openness to ideas, and careful evaluation of evidence. The manuscript emphasizes two dimensions: critical openness and reflective skepticism. Together, these dispositions shape how teachers question assumptions, interpret student responses, adjust strategies, and maintain intellectually stimulating learning environments.

2.2 Student Engagement

Student engagement is treated as a multidimensional construct composed of cognitive, affective, and behavioral engagement. The manuscript explains that engagement is not limited to observable participation; it also includes the learner's emotional connection to schoolwork and the cognitive effort invested in understanding and completing tasks. This framework is particularly relevant in TLE, where mastery depends on persistence and task completion.

2.3 Linkages Among the Variables

The reviewed literature suggests that creative teachers design more motivating and responsive learning experiences, while teachers with strong critical thinking dispositions create classrooms that value inquiry, justification, and reflection. These practices are expected to support deeper student involvement. The manuscript positions these two teacher-related factors as complementary predictors of engagement in TLE.

3. Materials and Methods

3.1 Research design

Quantitative descriptive-correlational design.

3.2 Locale and participants

300 Senior High School learners from the Technical-Vocational and Livelihood track in public secondary schools in Panabo City.

3.3 Sampling

Stratified random sampling from a population of 2,157 students using Slovin's formula.

3.4 Instruments

Standardized questionnaires measuring teachers' creativity, teachers' critical thinking disposition, and students' engagement.

3.5 Validity and reliability

Expert validation and reliability testing were conducted prior to the full study.
Statistical treatment: mean, Pearson correlation, and multiple regression.

3.6 Ethics

Permissions, informed consent, confidentiality safeguards, and ethics review procedures were reported in the manuscript.

4. Results and Discussion

The findings may be presented in the following sequence to match the required outline and preserve logical flow.

Subsection	Key finding	Interpretive note
8.1 Teachers' Creativity	Overall mean = 3.77 (High)	Lowest indicator: creating media that fosters students' motivation (M = 3.52).
8.2 Critical Thinking Disposition	Overall mean = 3.53 (High)	Lower indicator: reflective skepticism (M = 3.49).
8.3 Students' Engagement	Overall mean = 3.58 (High)	Lowest domain: behavioral engagement (M = 3.44).
8.4 Creativity and Engagement	r = .569, p = .000	Higher teacher creativity is associated with stronger student engagement.
8.5 Critical Thinking and Engagement	r = .542, p = .000	Teachers' critical thinking disposition is positively associated with engagement.
8.6 Influence of Creativity	$R^2 = 0.352$	Planning, method fit, and interaction emerged as the strongest practical drivers.
8.7 Influence of Critical Thinking Disposition	$R^2 = 0.303$	Critical openness and reflective skepticism significantly predicted engagement.
8.8 Combined Influence	$R^2 = 0.404$	Teacher creativity and critical thinking disposition jointly explained a meaningful share of engagement variance.

5. Conclusion and Recommendation

This section summarizes the study's findings, including descriptive data, inferential correlation and regression analysis, and a conclusion on whether the findings support the theoretical premises. Finally, the study's results inform its suggestions.

This study aimed to determine the level of teachers' creativity in TLE across six indicators, the level of teachers' critical thinking disposition in terms of critical openness and reflective scepticism, the level of students' engagement in TLE in terms of cognitive, affective, and behavioral engagement, the significant relationships among the variables, and whether teachers' creativity and critical thinking disposition significantly influence

students' engagement. Descriptive results showed high levels for the three major variables. Teachers' creativity was lowest in creating media that fosters students' motivation; teachers' critical thinking disposition was lowest in reflective scepticism; and students' engagement was lowest in behavioral engagement. Correlational findings established significant positive associations between teachers' creativity and students' engagement and between teachers' critical thinking disposition and students' engagement. Regression results further showed that teachers' creativity explains variance in engagement, while critical thinking disposition and the combined model also account for engagement variance, confirming that both teacher-related variables are meaningful predictors of students' engagement in TLE.

The findings support the study's anchor theory that critical and creative thinking explain the interrelationship among teachers' creativity, teachers' critical thinking disposition, and students' engagement. Bloom and Doss (2019) emphasized that these higher-order capacities are central goals of 21st-century education because they shape how learners analyze problems, generate ideas, and make informed decisions. In classroom practice, creativity and critical thinking operate together—creativity produces meaningful responses while critical thinking evaluates and improves ideas—making learning more purposeful and engaging (Justyna, 2016). The significant relationship in Table 4 between teachers' creativity and students' engagement, together with the significant relationship between teachers' critical thinking disposition and engagement, aligns with the view that classrooms shaped by creative and reflective teacher practices are more likely to cultivate students' cognitive investment, emotional connection, and active participation.

Overall, the results indicate that engagement in TLE is strengthened when teachers combine creative instructional practices with a critical thinking disposition that supports reflective judgment. However, the lowest-rated indicators point to clear improvement priorities: enhancing teachers' media creation for motivation, strengthening teachers' reflective scepticism, and improving students' behavioral engagement. Addressing these specific areas is expected to further increase students' active involvement and follow-through in TLE performance tasks, while sustaining the already high levels of cognitive and affective engagement.

The results suggest the following ways to improve instructors' creativity, critical thinking, and student engagement. For TLE teachers, the findings indicate the need to strengthen the lowest-rated areas by improving motivating instructional media, reflective scepticism, and behavioral engagement. Teachers may develop new media tools and incorporate at least one motivating instructional resource per lesson or unit—such as a short teacher-made demonstration video, QR-linked procedure guide, interactive task card, or step-by-step visual checklist—to increase students' willingness to participate and complete outputs, addressing the lowest creativity indicator on media for motivation. Teachers may also strengthen reflective scepticism by integrating a simple "Verify–Justify–Revise" routine during performance tasks, where learners verify procedures or sources, justify tool and material choices, and revise outputs based on

evidence and feedback. To improve the lowest engagement domain, behavioral engagement, teachers may implement structured participation systems such as rotating group roles, attendance and participation trackers, and checkpoint-based activities to build persistence and task completion.

For school heads and school staff, program support can be strengthened by implementing capacity-building and systems that directly address the weak indicators. Schools may run regular LAC/INSET sessions focused on motivational media production, where teachers co-produce, peer-review, and upload materials into a shared "TLE Media Bank" (demonstration videos, rubrics, project guides, interactive practice sets), reducing individual workload while strengthening the lowest creativity indicator. In addition, schools may institutionalize reflective practice through brief post-lesson reflection prompts (What evidence showed learning? What needs verification? What will I change next meeting?) supported by peer coaching cycles to explicitly develop reflective scepticism as a consistent professional habit.

For students, improving follow-through may be supported through self-monitoring routines that strengthen behavioral engagement. Learners may use a simple TLE task tracker (steps completed, issues encountered, next action, and deadline) alongside peer accountability checks to encourage persistence, responsibility, and completion of performance outputs. For education decision-makers and program implementers, teacher development initiatives may be prioritized around the predictors shown to relate significantly with engagement, particularly strengthening planning and method-fit strategies, reflective scepticism routines, and the creation of motivating instructional media suited to performance-based subjects like TLE. Finally, for future researchers, since the combined predictors explain the engagement variance, subsequent studies may incorporate additional variables (e.g., student motivation, peer influence, school support, and resources) and use mixed methods to clarify why behavioral engagement remains the lowest dimension and to deepen understanding of engagement development in TLE contexts.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

About the Author

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