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TLE Learning Engagement and Work Habits as Predictors of Entrepreneurial Readiness of Junior High School Learners in Mangagoy National High School, Bislig City Division: A Predictive-Correlational Approach

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ABSTRACT

This quantitative predictive-correlational study determined whether TLE learning engagement and work habits significantly predicted the entrepreneurial readiness of Junior High School learners in Mangagoy National High School, Bislig City Division, during School Year 2025-2026. The study analyzed 229 valid responses from Grades 7 to 10, representing 73.40% of the 312-learner Junior High School population. Data were gathered through a researcher-developed Google Forms questionnaire measuring TLE learning engagement, work habits in TLE, and entrepreneurial readiness. Weighted mean and standard deviation described the variables, Pearson product-moment correlation tested bivariate relationships, and multiple regression determined predictive contributions. Learners demonstrated High TLE learning engagement ($M = 3.25$, $SD = 0.36$), with motivation to learn practical and livelihood skills highest ($M = 3.29$) and hands-on/performance-based involvement lowest ($M = 3.20$). Work habits were High overall ($M = 3.13$, $SD = 0.22$), led by cooperation and teamwork ($M = 3.28$), while time management and punctuality were lowest ($M = 2.99$). Entrepreneurial readiness was also High ($M = 3.24$, $SD = 0.37$), with financial and resource management awareness highest ($M = 3.28$) and risk-taking and decision-making lowest ($M = 3.20$). TLE learning engagement ($r = .653$, $p < .001$) and work habits ($r = .455$, $p < .001$) were significantly related to entrepreneurial readiness. The regression model was significant, $F(2, 226) = 86.54$, $p < .001$, $R^2 = .434$, adjusted $R^2 = .429$. TLE learning engagement was a significant positive predictor ($B = 0.613$, beta $= .593$, $p < .001$), whereas work habits did not make a significant unique contribution when both predictors were entered ($B = 0.169$, beta $= .102$, $p = .104$). The findings identify TLE learning engagement as the stronger predictor and support an enhancement plan emphasizing meaningful engagement, hands-on learning, time management, resourcefulness, and entrepreneurial competencies.

Keywords: *TLE learning engagement, work habits, entrepreneurial readiness, Junior High School learners, predictive-correlational study, Technology and Livelihood Education*

INTRODUCTION

Entrepreneurial readiness is increasingly important in basic education because learners are expected to develop not only academic knowledge but also practical, creative, and productive capacities that may support future livelihood, employment, and self-employment. In Technology and Livelihood Education (TLE), readiness is reflected in learners' capacity to recognize opportunities, generate and improve ideas, manage resources, make

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reasoned decisions, tolerate reasonable risk, and develop confidence in applying livelihood-related skills (Department of Education [DepEd], 2016, 2019).

Changing labor-market conditions strengthen this educational need. The International Labour Organization (2024) reported continuing difficulties in youth transitions to productive work, while the World Economic Forum (2025) identified creative thinking, resilience, flexibility, curiosity, lifelong learning, and technological literacy among skills increasingly demanded in future workplaces. Entrepreneurship-oriented learning can therefore provide young people with transferable skills and mindsets that complement technical competence.

Philippine education policy similarly positions the K to 12 program as preparation for higher education, employment, entrepreneurship, and middle-level skills development. However, PISA 2022 results showed substantial learning and creative-thinking gaps among Filipino learners, including weak performance in idea generation and problem solving (Organisation for Economic Co-operation and Development [OECD], 2023, 2024). These gaps make it important to examine school-level factors that may contribute to readiness for productive and entrepreneurial activity.

TLE learning engagement and work habits are plausible learner-level predictors. Engagement includes interest, participation, completion of outputs, hands-on involvement, and motivation to learn practical skills (Fredricks et al., 2004), while work habits include responsibility, time management, teamwork, resourcefulness, initiative, and perseverance, which reflect self-regulated behavior (Panadero, 2017; Zimmerman, 2002). Previous studies indicate that entrepreneurship education, engagement, financial literacy, and practical learning experiences can support entrepreneurial intention and related competencies among secondary learners (Español et al., 2024; Shahin et al., 2021).

Mangagoy National High School had 312 Junior High School learners across Grades 7 to 10, and the source thesis identified recurring concerns related to task completion, academic effort, absenteeism, and the need for stronger practical skill development. Despite literature on entrepreneurship education and learner engagement, limited local evidence had tested whether TLE learning engagement and work habits jointly predict entrepreneurial readiness in this specific public-school context. The study therefore described the three constructs, examined their relationships, tested their predictive contribution, and used the findings as basis for a TLE-based entrepreneurial readiness enhancement plan.

Literature Review

Entrepreneurial Readiness in Secondary Education

Entrepreneurial readiness refers to the knowledge, attitudes, confidence, and behavioral tendencies that prepare learners to identify opportunities, develop ideas, manage resources, make decisions, and consider future livelihood or business activity. The Theory of Planned Behavior explains intention through attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991), while entrepreneurial intention models emphasize self-efficacy, attitudes, and perceived control as foundations of future entrepreneurial action (Liñán & Chen, 2009; Martínez-Gregorio & Oliver, 2022).

At the secondary level, readiness can be developed before learners are expected to establish actual businesses. Shahin et al. (2021) showed that a STEM-based entrepreneurship program strengthened entrepreneurial intention and emphasized creativity, risk-taking, problem solving, leadership, and peer learning. Philippine evidence likewise demonstrates that financial literacy and entrepreneurial behavior can be examined meaningfully among Junior High School learners and translated into TLE management planning (Español et al., 2024).

The source study operationalized entrepreneurial readiness through opportunity recognition, creativity and innovation, financial and resource management awareness, risk-taking and decision-making, and self-confidence and entrepreneurial intention. These dimensions reflect TLE's broader aim of connecting practical competencies with future employment, livelihood, and entrepreneurship (DepEd, 2016).

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TLE Learning Engagement and Practical Skill Development

TLE learning engagement describes learners' behavioral, emotional, and cognitive investment in practical learning. Fredricks et al. (2004) conceptualized engagement through participation, emotional connection, and cognitive effort, while Wang and Holcombe (2010) showed that participation, identification, and self-regulation are distinct but related components of school engagement. In TLE, these dimensions appear through active participation, task completion, practical demonstrations, collaboration, and sustained effort in producing outputs.

Engagement is especially relevant in a performance-based subject because skills are developed through doing. Experiential learning emphasizes concrete experience, reflection, conceptualization, and application (Kolb, 1984). Philippine TLE literature similarly highlights practical competencies, work skills, creativity, collaboration, communication, and career-related learning as important outcomes of the subject (Mayuga, 2021).

Motivation and meaningful participation further sustain engagement. Reeve (2012) and Ryan and Deci (2020) explain that supportive learning conditions, autonomy, competence, and perceived value can increase learners' involvement. Thus, when TLE activities are connected to real-life livelihood possibilities, learners may become more willing to participate, complete outputs, persist through difficulty, and transfer skills to entrepreneurial contexts.

Work Habits, Self-Regulation, and Entrepreneurial Behavior

Work habits in TLE include responsibility and task commitment, time management and punctuality, cooperation and teamwork, resourcefulness and initiative, and perseverance. These behaviors are consistent with Self-Regulated Learning Theory, which describes learners as active agents who set goals, monitor progress, manage resources, and evaluate their performance (Zimmerman, 2002; Panadero, 2017).

Time management and perseverance are particularly relevant to practical work. Britton and Tesser (1991) linked time-management practices with academic achievement, while Credé et al. (2017) found that perseverance of effort was more consistently related to performance than the broader grit construct. TLE tasks similarly require learners to organize materials, follow timelines, revise outputs, and continue working after mistakes or setbacks.

Cooperation and resourcefulness also resemble entrepreneurial work behavior because practical activities often require task sharing, communication, problem solving, and efficient use of limited materials. Cooperative learning research emphasizes positive interdependence and group responsibility (Johnson & Johnson, 2009), while TLE's curriculum explicitly incorporates values and attitudes needed for employment and entrepreneurship (DepEd, 2016).

Predictive Relationships and Research Gap

Research on entrepreneurship education generally shows that participation in learning experiences can shape entrepreneurial attitudes and intentions. Fayolle and Gailly (2015) reported persistent effects of entrepreneurship education on attitudes and intention, while Masri et al. (2021) found that engagement in entrepreneurship education was related to entrepreneurial intention among vocational learners. These findings support examining learning engagement as a possible predictor rather than only as a descriptive classroom characteristic.

At the same time, work habits may be related to readiness because entrepreneurial activity requires self-management, persistence, teamwork, and resource use. Yet engagement and work habits may overlap in the behaviors they represent. A predictive-correlational design is useful because regression can estimate whether each predictor contributes unique explanatory value after the other is statistically controlled (Creswell & Creswell, 2018; Fraenkel et al., 2019).

The source thesis identified a local gap: studies frequently focus on college, vocational, or senior high school populations, or examine engagement and work habits in relation to academic performance rather than entrepreneurial readiness. The present study therefore tested both predictors simultaneously among Junior High School learners in Mangagoy National High School and linked the findings to a practical TLE enhancement plan.

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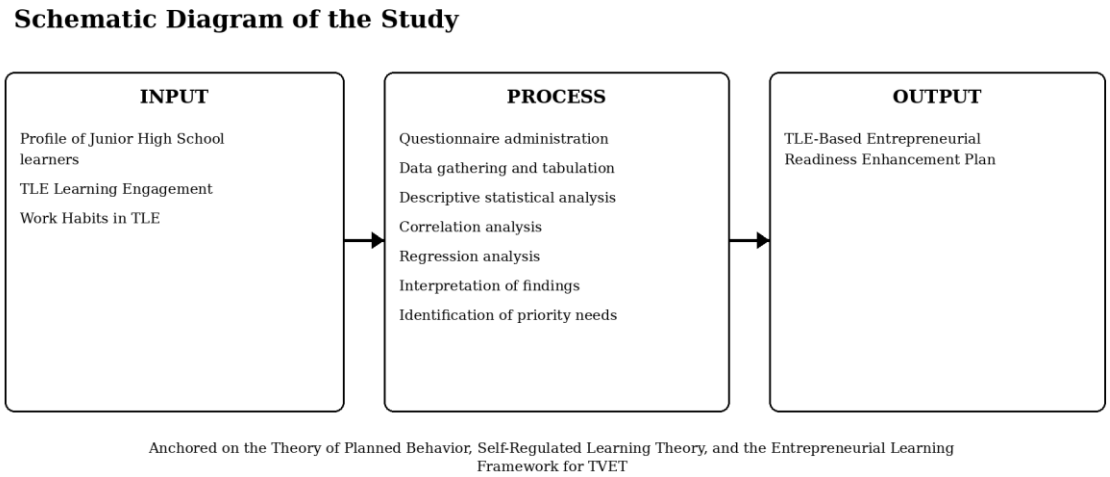
Figure 1. *Schematic Diagram of the Study*



METHODS

Research Design

The study employed a quantitative predictive-correlational design. TLE learning engagement and work habits in TLE served as predictor variables, while entrepreneurial readiness served as the dependent variable. The design described the existing levels of the variables, tested bivariate relationships, and used multiple regression to determine whether the predictors explained significant variance in entrepreneurial readiness without manipulating study conditions or establishing causality (Creswell & Creswell, 2018; Fraenkel et al., 2019).

Research Locale

The study was conducted at Mangagoy National High School in Barangay Mangagoy, Bislig City, Surigao del Sur, Caraga Region, during School Year 2025-2026. The school offered TLE to Junior High School learners and provided an appropriate setting for examining engagement, work habits, and entrepreneurial readiness in a public secondary-school context.

Participants and Sampling Technique

The target population consisted of 312 Junior High School learners: 85 in Grade 7, 78 in Grade 8, 79 in Grade 9, and 70 in Grade 10. The final dataset included 229 complete Google Forms responses, representing 73.40% of the population. Respondents were distributed proportionally across the grade levels: 63 Grade 7 learners, 57 Grade 8 learners, 58 Grade 9 learners, and 51 Grade 10 learners. The source thesis treated these valid and analyzable responses as sufficient for the planned descriptive, correlation, and regression procedures.

Table 1. *Distribution of Respondents by Grade Level*

Grade Level	Population	Valid Responses
Grade 7	85	63
Grade 8	78	57
Grade 9	79	58
Grade 10	70	51
Total	312	229

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Research Instrument

A researcher-developed learner questionnaire was administered through Google Forms. It contained 70 items divided into TLE learning engagement (20 items across four dimensions), work habits in TLE (25 items across five dimensions), and entrepreneurial readiness (25 items across five dimensions). Responses used a 4-point Likert scale from 4 = Strongly Agree to 1 = Strongly Disagree. Mean scores were interpreted as Very High (3.26-4.00), High (2.51-3.25), Low (1.76-2.50), or Very Low (1.00-1.75). The questionnaire was reviewed for alignment with the Statement of the Problem, variables, and dimensions before data collection.

Data Gathering Procedure

The researcher secured permission from concerned authorities and coordinated questionnaire administration with the school head and teachers. Learners were informed of the study purpose, voluntary nature of participation, and confidentiality of their responses. Google Forms automatically recorded the responses, after which the researcher checked completeness and usability and retained 229 valid responses for analysis.

Data Analysis

Weighted mean and standard deviation described TLE learning engagement, work habits, and entrepreneurial readiness. Pearson product-moment correlation tested the relationships of TLE learning engagement and work habits with entrepreneurial readiness. Multiple regression analysis determined the combined predictive effect of the two predictors and their unique contributions to entrepreneurial readiness. Statistical significance was evaluated at the .05 level.

Ethical Consideration

The study observed voluntary participation, confidentiality, and responsible handling of learner responses. Learner names and identifying information were excluded from the final analysis, responses were reported only in summarized form, and the data were used solely for research purposes. These procedures followed the source thesis's safeguards for school-based research involving minors and were consistent with UNICEF (2021) guidance on ethical research and data collection.

RESULTS AND DISCUSSION

TLE Learning Engagement

Junior High School learners demonstrated High TLE learning engagement overall (M = 3.25, SD = 0.36). Motivation to learn practical and livelihood skills was highest (M = 3.29, SD = 0.42; Very High). Interest and participation and completion of TLE tasks and outputs each obtained M = 3.25, while involvement in hands-on and performance-based activities was lowest (M = 3.20, SD = 0.44), although it remained High.

Table 2. *Level of TLE Learning Engagement*

Dimension	Mean	SD	Interpretation
Interest and Participation in TLE Activities	3.25	0.37	High
Completion of TLE Tasks and Outputs	3.25	0.42	High
Involvement in Hands-On and Performance-Based Activities	3.20	0.44	High
Motivation to Learn Practical and Livelihood Skills	3.29	0.42	Very High
Overall	3.25	0.36	High

The relatively strong motivational score suggests that learners saw practical and livelihood skills as valuable, consistent with motivation theories emphasizing utility, competence, and meaningful participation (Reeve, 2012; Ryan & Deci, 2020). The lower hands-on score is important because TLE competencies are intended to be developed through active performance and experiential learning; therefore, additional product-

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oriented and performance-based opportunities may help translate motivation into applied entrepreneurial competence (Kolb, 1984; DepEd, 2016).

Work Habits in TLE

Work habits in TLE were High overall (M = 3.13, SD = 0.22). Cooperation and teamwork obtained the highest mean (M = 3.28, SD = 0.34; Very High), followed by responsibility and task commitment (M = 3.22). Time management and punctuality was the lowest dimension (M = 2.99, SD = 0.40), followed by resourcefulness and initiative (M = 3.02).

Table 3. *Level of Work Habits in TLE*

Dimension	Mean	SD	Interpretation
Responsibility and Task Commitment	3.22	0.36	High
Time Management and Punctuality	2.99	0.40	High
Cooperation and Teamwork	3.28	0.34	Very High
Resourcefulness and Initiative	3.02	0.39	High
Perseverance in Completing TLE-Related Tasks	3.15	0.35	High
Overall	3.13	0.22	High

The strong teamwork result aligns with cooperative-learning literature that emphasizes shared responsibility and positive interdependence (Johnson & Johnson, 2009). However, the comparatively lower time-management and resourcefulness scores identify practical areas for strengthening self-regulation. These behaviors are directly relevant to entrepreneurial tasks because completing products or services requires planning, punctuality, efficient use of resources, and adjustment when problems occur (Zimmerman, 2002; Panadero, 2017).

Entrepreneurial Readiness

Entrepreneurial readiness was High overall (M = 3.24, SD = 0.37). Financial and resource management awareness obtained the highest mean (M = 3.28, SD = 0.45; Very High), followed by opportunity recognition (M = 3.26, SD = 0.38; Very High). Creativity and innovation was High (M = 3.25), while self-confidence and entrepreneurial intention (M = 3.22) and risk-taking and decision-making (M = 3.20) were comparatively lower.

Table 4. *Level of Entrepreneurial Readiness*

Dimension	Mean	SD	Interpretation
Opportunity Recognition	3.26	0.38	Very High
Creativity and Innovation	3.25	0.45	High
Financial and Resource Management Awareness	3.28	0.45	Very High
Risk-Taking and Decision-Making	3.20	0.42	High
Self-Confidence and Entrepreneurial Intention	3.22	0.40	High
Overall	3.24	0.37	High

The pattern indicates that learners were particularly aware of basic resource and opportunity considerations but were somewhat less confident in acting under uncertainty. This is consistent with the Theory of Planned Behavior, in which perceived control and confidence are important for intention formation (Ajzen, 1991), and with secondary-level entrepreneurship studies showing that risk-taking, creativity, and self-efficacy can be developed through structured learning experiences (Martínez-Gregorio & Oliver, 2022; Shahin et al., 2021).

Relationships of TLE Learning Engagement and Work Habits with Entrepreneurial Readiness

TLE learning engagement showed a positive and significant relationship with entrepreneurial readiness (overall $r = .653$, $p < .001$). All engagement dimensions were significantly related to entrepreneurial readiness, with motivation to learn practical and livelihood skills showing the strongest bivariate relationship ($r = .670$),

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followed by interest and participation (r = .573), hands-on involvement (r = .541), and task/output completion (r = .483).

Work habits in TLE were also positively and significantly related to entrepreneurial readiness (overall r = .455, p < .001). All work-habit dimensions were significant, although the coefficients were smaller: cooperation and teamwork (r = .326), responsibility and task commitment (r = .314), resourcefulness and initiative (r = .283), time management and punctuality (r = .246), and perseverance (r = .203, p = .002). Thus, both bivariate null hypotheses were rejected.

Table 5. *Summary of Correlations with Entrepreneurial Readiness*

Predictor / Indicator	r	p	Interpretation
Overall TLE Learning Engagement	.653	< .001	Significant positive
Motivation to Learn Practical and Livelihood Skills	.670	< .001	Significant positive
Overall Work Habits in TLE	.455	< .001	Significant positive
Cooperation and Teamwork	.326	< .001	Significant positive
Perseverance in TLE-Related Tasks	.203	.002	Significant positive

The stronger engagement coefficient suggests that entrepreneurial readiness was more closely connected with learners' active and motivational investment in TLE than with generalized work habits. This supports research showing that engagement in entrepreneurship-oriented learning can shape entrepreneurial intentions and attitudes (Fayolle & Gailly, 2015; Masri et al., 2021). The significant work-habit relationship nevertheless indicates that responsibility, teamwork, time management, and perseverance remain relevant behavioral foundations, even if their unique predictive role may be smaller once engagement is considered simultaneously.

Predictive Effect on Entrepreneurial Readiness

Multiple regression showed that the overall model significantly predicted entrepreneurial readiness, F(2, 226) = 86.54, p < .001. The model explained 43.4% of the variance in entrepreneurial readiness (R^2 = .434; adjusted R^2 = .429). TLE learning engagement emerged as a significant positive predictor (B = 0.613, SE B = 0.064, beta = .593, t = 9.516, p < .001). Work habits in TLE, however, did not make a statistically significant unique contribution when both predictors were included (B = 0.169, SE B = 0.103, beta = .102, t = 1.634, p = .104).

Table 6. *Multiple Regression Predicting Entrepreneurial Readiness*

Predictor	B	SE B	beta	t	p	Interpretation
Constant	0.725	0.261	--	2.780	.006	Significant
TLE Learning Engagement	0.613	0.064	.593	9.516	< .001	Significant predictor
Work Habits in TLE	0.169	0.103	.102	1.634	.104	Not significant predictor

Model: $F(2, 226) = 86.54$, $p < .001$, $R^2 = .434$, adjusted $R^2 = .429$.

The regression result clarifies the bivariate findings. Although stronger work habits were associated with greater entrepreneurial readiness, their unique contribution was not significant after accounting for TLE learning engagement. This suggests that part of the relationship between work habits and readiness may be shared with learners' broader engagement in TLE. The source thesis therefore identified engagement as the stronger predictor and rejected the overall regression null hypothesis while recognizing that work habits remained educationally relevant as a correlated construct.

TLE-Based Entrepreneurial Readiness Enhancement Plan

The enhancement plans targeted dimensions that were comparatively lower and emphasized the stronger predictive role of engagement. It focused on linking TLE lessons with real-life uses, increasing hands-on tasks, improving time management and output completion, strengthening resourcefulness and initiative, and developing entrepreneurial competencies such as opportunity recognition, costing, product improvement, confidence, and decision-making.

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Table 7. *TLE-Based Entrepreneurial Readiness Enhancement Plan*

Component	Key Activities	Expected Output
Strengthening TLE Learning Engagement	Use short TLE activities linking lessons to home, school, and community uses.	Improved interest, participation, and appreciation of livelihood skills
Improving Hands-On and Performance-Based Activities	Use performance tasks where learners create, improve, and present simple outputs.	Improved hands-on participation and skill application
Developing Time Management and Task Completion	Use timelines, checklists, and output submission schedules.	Better punctuality, task completion, and responsibility
Building Resourcefulness and Initiative	Let learners suggest materials, solve task problems, and improve outputs.	Improved initiative and wise use of resources
Enhancing Entrepreneurial Readiness	Use opportunity recognition, simple costing, product improvement, and mini-business presentations.	Improved entrepreneurial awareness, confidence, and readiness
Monitoring and Evaluation	Use outputs, rubrics, reflections, and teacher review to monitor progress.	Data-based feedback for TLE program improvement

The plan is directly aligned with the statistical pattern: hands-on involvement, time management, and resourcefulness were among the comparatively lower descriptive dimensions, while TLE learning engagement was the strongest predictor of entrepreneurial readiness. Strengthening meaningful participation and practical application is therefore the most evidence-aligned pathway for school-based enhancement, with work-habit activities serving as complementary supports rather than isolated interventions.

CONCLUSION

Junior High School learners of Mangagoy National High School demonstrated High levels of TLE learning engagement, work habits in TLE, and entrepreneurial readiness. Their strongest areas included motivation to learn practical and livelihood skills, cooperation and teamwork, financial and resource management awareness, and opportunity recognition. Comparatively lower scores in hands-on involvement, time management, resourcefulness, risk-taking, and decision-making indicate areas where further classroom support may be beneficial.

Both TLE learning engagement and work habits were positively related to entrepreneurial readiness; however, regression analysis showed that TLE learning engagement was the stronger and only statistically significant unique predictor when both variables were considered simultaneously. The findings therefore suggest that sustained learner involvement, motivation, and participation in meaningful TLE experiences are central to entrepreneurial readiness, while productive work habits remain supporting behaviors. The proposed enhancement plan translates these findings into practical TLE activities without implying causal effects beyond the predictive-correlational design.

Recommendation

TLE teachers and the TLE coordinator should increase meaningful, hands-on, and performance-based activities that connect classroom competencies with home, community, livelihood, and simple entrepreneurial applications. Time-management and task-completion supports such as timelines, checklists, staged deadlines, and structured reflection should be integrated into TLE activities, while learners should be encouraged to propose alternative materials and solutions to strengthen resourcefulness and initiative.

Entrepreneurial readiness activities should include opportunity recognition, simple budgeting and costing, product or service improvement, decision-making exercises, mini-business presentations, and confidence-building tasks that remain developmentally appropriate for Junior High School learners.

School leaders may use the enhancement plan as a basis for TLE program improvement, provide materials and technical support for practical activities, and review learner outputs and reflections to monitor progress in engagement and entrepreneurial competencies.

Future research should replicate the model in other schools and include additional variables such as family livelihood exposure, socioeconomic conditions, parental support, TLE academic performance, access to materials, learner motivation, and teacher-related factors; longitudinal or intervention studies may further examine how entrepreneurial readiness develops over time.

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