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RESEARCH ARTICLE

EXPLORING THE RELATIONSHIP OF ENTREPRENEURSHIP EDUCATION WITH PERSONAL ENTREPRENEURIAL COMPETENCIES SKILLS DEVELOPMENT, AND FOOD AND BEVERAGE SERVICES TOOL ACQUISITION

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ABSTRACT

This study examined the relationship between entrepreneurship education, personal entrepreneurial competencies (PECs), and the acquisition of Food and Beverage Services (FBS) tools for entrepreneurial activities among Grade 10 Technology and Livelihood Education (TLE) students. Specifically, the study determined the respondents' demographic profile, assessed the perceived relevance of entrepreneurship education, evaluated the level of PECs, measured the extent of FBS tool acquisition, tested the relationship between PECs and FBS tool acquisition, determined differences when grouped according to demographic profile, and proposed an entrepreneurial enhancement program based on the findings. The study employed a quantitative descriptive-correlational research design. Data were gathered from 100 Grade 10 TLE students using a researcher-made questionnaire. Frequency and percentage, weighted mean, standard deviation, Pearson Product Moment Correlation, t-test, and Analysis of Variance (ANOVA) were utilized in analyzing the data. The findings showed that entrepreneurship education was perceived as highly relevant, while personal entrepreneurial competencies and acquisition of FBS tools were demonstrated to a moderate

extent. Significant relationships were found between personal entrepreneurial competencies and FBS tool acquisition in terms of tool accessibility, tool relevance, and tool utilization. No significant differences were found when the respondents were grouped according to sex, family business background, and family monthly income based on the values reported in Tables 21–23. Based on the findings, an entrepreneurial enhancement program entitled "ENTREP+: Enhancing Entrepreneurial Competencies and Practical Skills in Food and Beverage Services" was proposed.

INTRODUCTION

Entrepreneurship education is no longer merely an elective component of technical and vocational curricula but a vital framework through which learners develop the competencies, mindset, and practical skills necessary to navigate a rapidly changing global economy. Globally, there is increasing recognition that entrepreneurial learning is central to preparing students for both self-employment and innovation-driven career paths. Countries worldwide have integrated entrepreneurship education into secondary and tertiary education systems, emphasizing experiential learning, mentorship, and industry-aligned tools to bridge the gap between theory and practice (Alakaleek et al., 2024; Udeozor et al., 2025). Despite these global initiatives, there remains a critical challenge in translating knowledge into actionable skills, particularly in specialized vocational tracks such as Food and Beverage Services (FBS), where practical tool acquisition is as essential as cognitive understanding.

In many educational contexts, the lack of alignment between entrepreneurship education and hands-on access to industry-specific resources creates a barrier to fully realizing students' entrepreneurial potential. Learners often possess theoretical knowledge yet struggle to apply competencies in authentic contexts due to insufficient exposure to practical tools, limited mentorship, or inadequate curricular support. This disconnect not only hinders skill development but also affects students' confidence and readiness to engage in entrepreneurial

ventures. While the benefits of entrepreneurship education have been widely documented—including enhanced opportunity recognition, risk-taking, and self-efficacy—few studies investigate how such programs specifically facilitate the acquisition of FBS tools necessary for practical entrepreneurial activities (Lesigues & San Pedro, 2022; Rahmi et al., 2025). This gap highlights the need for research that considers both the cognitive and material dimensions of entrepreneurial training in vocational secondary education.

In the Philippine context, Grade 10 learners in Technology and Livelihood Education subject encounter similar challenges. At Gingoog City Comprehensive National High School, the integration of entrepreneurship education into Technology and Livelihood Education (TLE) provides students with theoretical and experiential learning opportunities. However, access to specialized FBS tools is limited, and the connection between personal entrepreneurial competencies and tool acquisition is skills in isolation from practical application, constraining their ability to insufficiently explored. As a result, students may develop certain entrepreneurial operate effectively in real-world food and beverage entrepreneurial ventures. Locally, addressing this issue is essential to enhance learners' preparedness for future self-employment and to cultivate a culture of innovation within the school community.

Several studies have attempted to examine aspects of entrepreneurship education, focusing primarily on curriculum effectiveness, development of personal entrepreneurial competencies, or students' entrepreneurial intentions. For example, Zayas et al. (2024) highlighted the positive correlation between structured entrepreneurship programs and entrepreneurial competence, while Alakaleek et al. (2024) emphasized the importance of mentorship and experiential learning. Despite these contributions, prior research has largely overlooked how entrepreneurship education mediates the acquisition of industry-specific tools and how students perceive this integration. Additionally, existing studies often focus on tertiary learners, leaving a gap in understanding the unique challenges faced by secondary school students engaged in vocational training.

This study, therefore, examined the relationship between entrepreneurship education, the development of personal entrepreneurial competencies (PECs), and the acquisition of Food and Beverage Services (FBS) tools among Grade 10 TLE students. Specifically, it described the demographic profile of the learners; determined the level of perceived relevance of entrepreneurship education; assessed the level of personal entrepreneurial competencies; evaluated the extent of acquisition of FBS tools; examined the relationship between PECs and FBS tool acquisition; and identified significant differences in PECs and tool acquisition when grouped according to demographic profile. Furthermore, the study sought to develop an entrepreneurial enhancement program based on the findings. By addressing these objectives, the study intended to bridge the gap in current literature by linking cognitive, attitudinal, and practical dimensions of entrepreneurship education within a vocational secondary education context.

As a Technology and Livelihood Education teacher, the researcher was deeply committed to equipping students with lifelong, practical skills that could sustain them beyond formal schooling. In the context of Food and Beverage Services, entrepreneurship education was not merely theoretical but was embedded through hands-on entrepreneurial activities that mirrored real-world practices. Guided by the principle often emphasized by the school head—"sa bawat kwento, may kwenta"—the researcher was motivated to examine whether the integration of entrepreneurship education meaningfully contributed to the development of students' Personal Entrepreneurial Competencies. This study therefore sought to determine if the practical entrepreneurial experiences provided in Food and Beverage Services genuinely translated into measurable competency development and relevant tool acquisition among learners.

The rationale for this research was grounded in both professional and educational considerations. As a TLE educator, the researcher had observed that students often faced challenges in translating classroom instruction into practical entrepreneurial skills due to limited access to relevant tools and structured guidance. By examining the interplay among

entrepreneurship education, PECs, and FBS tool acquisition, this study sought to generate evidence-based insights that could inform curriculum design, instructional practices, and resource management. Beyond local relevance, the findings were intended to contribute to the broader discourse on vocational entrepreneurship education, offering a framework that integrated cognitive and material aspects of learning to strengthen students' readiness for real-world entrepreneurial engagement.

LITERATURE REVIEW

This presents a relevant review of related literature and studies that are essential in the development of this research study.

Entrepreneurship Education and Its Perceived Relevance

Entrepreneurship education is increasingly recognized as a key component of secondary and technical-vocational curricula, given the need for students to acquire not only content knowledge but also entrepreneurial capabilities such as opportunity recognition, self-confidence, and practical action orientation. For instance, in a study of vocational high school students in Indonesia, it was found that entrepreneurship education positively influenced students' entrepreneurial orientation and motivation, which in turn related to their entrepreneurial practices. (Yendi et al., 2023). This underscores the notion that education programmes need to provide authentic, real-world learning contexts, mentorship, and business-activity integration to be meaningful.

From a curriculum and instructional perspective, the relevance of entrepreneurship education hinges on its alignment with students' perceived needs, instructor competence, and provision of practical learning opportunities. A quantitative investigation among Indonesian high school youth revealed that while entrepreneurship education had a positive and

significant effect on entrepreneurial intention, it did not show a significant effect on entrepreneurial mindset as measured in that study (Hildianto & Iswandari, 2021). This suggests that simply offering courses labelled "entrepreneurship" is insufficient; relevance—both in content and delivery—matters. In addition, qualitative research focusing on students in culinary and tourism-oriented vocational schools in Indonesia found that although students generally held positive perceptions of their entrepreneurship education, limitations such as learning intensity, financial constraints, and deficiencies in collaborative and communication skills served as major obstacles to fully translating education into entrepreneurial action (Fauziyah & Pangaribuan, 2023).

Students' perceptions of relevance are key because they influence how learners engage with the educational experience and whether they internalise entrepreneurial mindsets and behaviours. For example, a study in Cabo Verde found that participation in an entrepreneurship curriculum programme positively affected students' entrepreneurial attitudes and intentions, particularly when teaching methods and contexts were aligned with learners' reality. (Dinis, 2024). The student perspective thus signals that entrepreneurship education needs to be student-centred and contextually anchored to increase its perceived relevance.

In the context of Technology and Livelihood Education (TLE) programmes—particularly those with a Food and Beverage Services (FBS) track—this perceived relevance becomes especially salient. Here, entrepreneurship education is not only about theoretical understanding but also about bridging vocational skills, tool-usage, and entrepreneurial application. When students view the curriculum, instructor competence, practical learning opportunities, and co-curricular entrepreneurial activities as relevant and applicable to their vocational future, they are more likely to engage meaningfully and transfer learning into practical performance (Dela Cruz & Reyes, 2023).

Therefore, in designing and assessing entrepreneurship education within the TLE

context, attention must extend beyond generic entrepreneurship modules. Programmes should consciously address curriculum content tailored to vocational entrepreneurial contexts, enhance instructor competence to deliver relevancy-oriented instruction, provide practical, hands-on opportunities aligned with student future roles, and include co-curricular entrepreneurial activities that reinforce and contextualise learning. When these conditions are met, the perceived relevance of entrepreneurship education becomes a critical lever for developing personal entrepreneurial competencies (PECs) and ultimately for supporting tool-acquisition and entrepreneurial readiness.

Personal Entrepreneurial Competencies (PECs) of Learners

Personal entrepreneurial competencies (PECs) represent a foundational dimension of entrepreneurial readiness, encompassing the internalised attributes, cognitive dispositions, and behaviour-oriented skills that enable individuals to identify opportunity, act under uncertainty, and persist in entrepreneurial endeavour. In the context of vocational and technical-livelihood education, PECs are increasingly recognized as crucial mediators between educational inputs and practical entrepreneurial performance. As Romero and Nalangan (2023) revealed in a study of graduating business students in the Philippines, PECs—operationalized via the Management Systems International (MSI) model—were significantly manifested among students, underscoring the curriculum's role in competency development.

Among the core domains of PECs, opportunity seeking, risk-taking, self-confidence, and goal-setting stand out as pivotal. The capacity to spot and capitalize on entrepreneurial opportunity involves a proactive orientation and creative alertness—qualities that vocational learners must cultivate in order to transition from skill-acquisition to value-creation. Research in vocational high school settings confirms this: Obregon et al. (2023) observed that among TVL-Cookery students, high scores were attained in information-seeking and self-confidence,

whereas risk-taking and commitment to contracts were comparatively weaker, signifying uneven competency profiles. These findings expose the need for educational strategies that bolster less developed PEC dimensions.

Self-confidence—the belief in one's capacity to act, influence outcomes, and manage entrepreneurial ventures—is consistently linked to higher entrepreneurial intention, behaviour and tool-utilization readiness. Valiente (2025) found that among TVL students, self-confidence and goal-setting emerged as the strongest predictors of entrepreneurial skills and attitudes, while risk-taking remained moderately manifested. The implication for the present study is that even in Grade 10 TLE learners, these PEC components warrant targeted attention since they shape not only intention but actual engagement in entrepreneurial tasks.

Goal-setting entails deliberate planning of objectives, timelines and resources; it anchors the purposeful progress of entrepreneurial activity and supports sustained motivation. When learners establish specific, measurable, attainable, relevant and time-bound (SMART) goals within the context of their TLE programme—particularly in a strand such as Food and Beverage Services—they are more likely to align their practical tool acquisition, skill development, and self-efficacy into coherent entrepreneurial action. The synergy of goal-setting with self-confidence magnifies the capacity to translate intention into practice (Shen, 2024).

Further, risk-taking, while often deemed a normative entrepreneurial trait, varies widely among student populations. The moderate scores in risk-taking noted by Obregon et al. (2023) and others suggest that while learners may desire stability and avoid uncertainty, educational contexts can scaffold risk-tolerance through simulated practice, reflection and incremental challenge. In vocational settings where hands-on tool-usage, enterprise simulation and entrepreneurial tasks are present, the cultivation of risk-taking becomes both feasible and essential.

In sum, the literature underscores that PECs are not static traits but developable competencies; thus, education programmes must embed structured opportunities for their cultivation. As factors mediating tool acquisition—as well as longer-term entrepreneurial engagement—PECs are highly relevant for Grade 10 TLE students whose learning pathways must bridge classroom theory and hands-on practice. The present study, by measuring PECs in terms of opportunity seeking, risk-taking, self-confidence and goal-setting, positions itself to evaluate not just levels of competencies but their interaction with tool acquisition and education relevance, thereby contributing to scholarship and practical curriculum design in the Philippine TLE context.

Acquisition and Utilization of Food and Beverage Services (FBS) Tools

The acquisition and effective utilization of Food and Beverage Services (FBS) tools constitute a critical component of vocational entrepreneurship education, particularly in Technology and Livelihood Education (TLE) programmes. In the context of secondary technical-vocational curricula, students' ability to access, select, and properly employ FBS tools is instrumental in translating theoretical entrepreneurial knowledge into practical skill performance and operational readiness. Empirical studies emphasize that hands-on engagement with tools and equipment not only strengthens technical competence but also reinforces personal entrepreneurial competencies (PECs) such as opportunity recognition, risk-taking, and goal-directed action (Sutrisno, et al., 2022).

Accessibility of tools is foundational to practical skill acquisition. Research indicates that students are more likely to develop mastery in operational procedures when tools and equipment are readily available, appropriately maintained, and sufficient in quantity to allow repeated practice (Mulyani, 2021). Limited access to vocational tools, conversely, constrains experiential learning, inhibits skill development, and reduces learners' confidence in performing entrepreneurial tasks independently. In TLE programs with FBS strands, equitable access to cutting, measuring, and food-preparation equipment, for instance, directly

affects students' ability to complete practical assignments and engage in simulated or real business scenarios.

The relevance of FBS tools to entrepreneurial tasks also shapes students' skill acquisition outcomes. Tools must not only be accessible but also align with the competencies required for real-world FBS operations. A study in Indonesian vocational schools demonstrated that aligning tool provision with instructional objectives significantly improved students' competence in culinary tasks, enhanced their engagement, and fostered the development of entrepreneurial behaviours (Saputro, 2020). Tools perceived as irrelevant or misaligned with practical exercises reduce motivation, limit the transfer of skills to entrepreneurial applications, and compromise the perceived value of vocational education.

Equally important is the effective utilization of tools, which reflects both technical skill and the integration of entrepreneurial competencies. Students who have high levels of PECs, such as self-confidence and goal-setting, are better able to translate access to FBS tools into practical outcomes, such as food preparation, presentation, and service management (Prasetyo & Nugroho, 2023). Utilization encompasses not only technical proficiency but also hygiene, safety practices, and efficient workflow management—core dimensions of professional FBS operation. Moreover, proper utilization of tools is indicative of learners' readiness for entrepreneurial tasks, including small business operations, product innovation, and service delivery.

The literature suggests that acquisition and utilization of tools are interdependent with PECs and the perceived relevance of entrepreneurship education. Students with well-developed PECs demonstrate greater initiative, creativity, and problem-solving ability when handling tools, while structured entrepreneurship education facilitates intentional, guided practice that optimizes tool use (Shadiev, 2022). Therefore, examining the acquisition, relevance, and utilization of FBS tools provides not only insight into technical skill proficiency but also into how vocational education supports the broader development of entrepreneurial

competencies among learners.

In summary, the acquisition and utilization of FBS tools were central to TLE programmes that aimed to integrate entrepreneurship education with practical skill development. Accessibility, relevance, and utilization collectively determined whether students could effectively translate classroom instruction into applied skills, ultimately shaping their entrepreneurial readiness. The present study focused on this relationship among Grade 10 TLE students.

Trends in Entrepreneurship Education, PECs, and Skill Development

Recent studies on entrepreneurship education, personal entrepreneurial competencies (PECs), and vocational skill development indicate an evolving emphasis on integrative, student-centred, and experiential approaches that bridge theory and practice. In the past five years, research has increasingly focused on understanding how educational interventions influence not only students' knowledge but also their behaviours, attitudes, and readiness to engage in entrepreneurial activities (Ngo et al., 2024). The integration of PECs with vocational skills, particularly in technical and livelihood strands, has emerged as a central theme, highlighting the importance of equipping learners with competencies that are both cognitive and practical.

One notable trend is the emphasis on experiential learning and authentic contexts in entrepreneurship education. Studies have shown that active, hands-on learning environments—such as business simulations, project-based learning, and industry immersion—positively impact students' development of PECs, including opportunity seeking, risk-taking, self-confidence, and goal-setting (Heyworth-Thomas, 2023). For instance, in vocational high school programmes with culinary and FBS tracks, students reported higher engagement and skill mastery when learning activities closely mirrored real-world entrepreneurial situations (Dela Cruz & Reyes, 2023). This reflects a broader pedagogical shift from rote instruction to learner-centred, practical approaches that prioritise application and

reflection.

Another emerging trend is the integration of technology and digital tools in entrepreneurship education. Recent research highlights the use of digital platforms for project planning, virtual simulations, and entrepreneurial collaboration, which enhances accessibility, interaction, and skill acquisition (Sitaridis & Kitsios, 2024). The incorporation of technology not only modernises vocational learning but also aligns with global trends in entrepreneurship, where digital literacy and innovation are critical for competitiveness.

Furthermore, contemporary studies have begun to emphasise the mediating role of entrepreneurship education in the development of PECs and practical skill acquisition. Evidence suggests that structured educational interventions can strengthen the relationship between students' inherent or nascent competencies and their effective use of vocational tools (Abede et al., 2024). For example, when entrepreneurship education is perceived as relevant and well-designed, students demonstrate enhanced engagement with hands-on tasks, higher confidence in tool utilization, and stronger entrepreneurial intention. This trend underscores the importance of relevance, contextual alignment, and instructional quality in shaping both cognitive and practical outcomes.

Lastly, research increasingly highlights the need for holistic assessment and evidence-based curriculum design. Scholars advocate for multidimensional evaluation frameworks that capture students' perceptions, competencies, and practical performance, enabling educators to refine curricula, instructional strategies, and resource allocation (Fan et al., 2022). This trend reflects a growing recognition that the ultimate goal of entrepreneurship education in TLE is not merely knowledge acquisition but the development of adaptable, competent, and entrepreneurial learners capable of translating competencies into real-world action.

In summary, recent trends in studies on entrepreneurship education, PECs, and vocational skill development converged on the principles of experiential learning, relevance, technological integration, and holistic assessment. These trends provided a contextual and

theoretical foundation for the present study, which examined how Grade 10 TLE students perceived entrepreneurship education, developed PECs, and acquired practical skills.

Entrepreneurial Enhancement Programs for Learners

Entrepreneurial enhancement programs for learners are structured interventions designed to strengthen students' personal entrepreneurial competencies (PECs) while fostering practical skills essential for successful engagement in entrepreneurial activities. In the context of Technology and Livelihood Education (TLE), such programs aim to bridge theoretical knowledge with applied learning, particularly in specialized strands such as Food and Beverage Services (FBS), where hands-on skill mastery is essential (Romero & Nalangan, 2023). These programs integrate experiential, learner-centered strategies that target the development of key entrepreneurial attributes, including opportunity seeking, risk-taking, self-confidence, and goal-setting, thereby promoting holistic competence in both cognitive and practical domains (Valiente, 2025).

A central feature of entrepreneurial enhancement programs is the incorporation of experiential learning approaches, which align with Kolb's Experiential Learning Theory (ELT). These approaches include simulations, project-based tasks, and real-world problem-solving exercises that provide learners with direct, reflective, and applied experiences (McLeod, 2025). By engaging in authentic entrepreneurial scenarios, students are able to translate conceptual understanding into actionable skills, developing the ability to make informed decisions, manage resources, and respond to challenges effectively. Such experiential engagement has been shown to significantly improve learners' confidence, initiative, and overall entrepreneurial readiness (Ramadhan, Yuliani, & Prasetyo, 2023).

Entrepreneurial enhancement programs also emphasize structured PECs development, wherein learners participate in goal-oriented activities, mentorship, and reflective exercises designed to cultivate critical entrepreneurial attitudes and behaviors. Research indicates that when PECs are systematically nurtured, students demonstrate

improved problem-solving capacity, higher tolerance for risk, and greater initiative in entrepreneurial tasks, which in turn enhances their practical performance and tool utilization in FBS contexts (Romero & Nalangan, 2023; Abede et al., 2024). This underscores the interdependence between cognitive competencies and applied skills, highlighting the importance of programs that holistically address both dimensions.

The integration of practical skill acquisition is equally critical within enhancement programs. Learners are provided with access to relevant FBS tools, instructed in proper usage, and engaged in guided hands-on activities that mirror real entrepreneurial environments. Studies reveal that students who are effectively trained in both PECs and tool utilization exhibit higher proficiency, readiness for entrepreneurial tasks, and the ability to innovate within vocational contexts (Mulyani, 2021; Prasetyo & Nugroho, 2023). Therefore, entrepreneurial enhancement programs must ensure that experiential learning, competency development, and practical tool engagement are cohesively implemented to maximize learning outcomes.

Finally, these programs incorporate assessment and feedback mechanisms to evaluate learners' progress, providing data to refine instructional strategies, curriculum design, and resource allocation. Evaluating outputs in terms of PECs growth, skill proficiency, and effective tool utilization allows educators and administrators to identify gaps, reinforce strengths, and ensure that learners are adequately prepared for real-world entrepreneurial applications (Abede et al., 2024).

In conclusion, entrepreneurial enhancement programs for learners serve as comprehensive interventions that simultaneously foster cognitive, behavioral, and practical competencies. By integrating experiential learning, structured PECs development, and applied skill acquisition, these programs equip TLE students with the knowledge, confidence, and tools necessary for successful entrepreneurial engagement, particularly within the Food and Beverage Services strand.

RESEARCH QUESTIONS

This study examined the relationship between entrepreneurship education and its impact on the development of personal entrepreneurial competencies (PECs) and the acquisition of Food and Beverage Services (FBS) tools for entrepreneurial activities among Grade 10 TLE students. The study aimed to provide insights that could inform strategies for enhancing entrepreneurship education, improving students' competencies, and optimizing hands-on skill acquisition within the FBS context.

Specifically, the study sought to answer the following research questions:

1. What is the demographic profile of the Grade 10 TLE students in terms of:

   1.1 sex,

   1.2 family business background, and

   1.3 family monthly income?

2. What is the level of perceived relevance of entrepreneurship education among Grade 10 TLE students in terms of:

   2.1 curriculum and course content,

   2.2 instructor competence,

   2.3 practical learning opportunities, and

   2.4 co-curricular entrepreneurial activities?

3. What is the level of personal entrepreneurial competencies (PECs) of Grade 10 TLE students with respect to:

   3.1 opportunity seeking,

3.2 risk-taking,

3.3 self-confidence, and

3.4 goal setting?

4. What is the extent of acquisition of Food and Beverage Services (FBS) tools for entrepreneurial activities in terms of:

   4.1 tool accessibility,

   4.2 tool relevance, and

   4.3 tool utilization?

5. Is there a significant relationship between students' personal entrepreneurial competencies (PECs) and their acquisition of FBS tools for entrepreneurial activities?

6. Is there a significant difference in the level of personal entrepreneurial competencies (PECs) and the extent of acquisition of FBS tools for entrepreneurial activities when grouped according to their demographic profile?

7. What entrepreneurial enhancement program can be proposed based on the findings of the study?

METHODOLOGY

This chapter presented the following parts which were employed in the study: research design, population and sampling, respondents, instrumentation, validation of the instrument, data gathering procedure, statistical treatment, and ethical consideration. This chapter gave an in-depth explanation of the various processes that were conducted to achieve the aims of the study.

Research Design

This study employed a quantitative descriptive-correlational research design (Block et al., 2023) to systematically investigate the relationship between entrepreneurship education, personal entrepreneurial competencies (PECs), and the acquisition of Food and Beverage Services (FBS) tools among Grade 10 TLE students. The descriptive component facilitated a comprehensive assessment of students' perceptions of entrepreneurship education, their level of PECs, and the extent of FBS tool acquisition, providing a clear and measurable profile of the target population. The correlational aspect enabled the examination of the strength and direction of relationships among variables, as well as the mediating role of entrepreneurship education in linking PECs with practical skill acquisition. This design was particularly appropriate because it allowed the researcher to explore patterns, trends, and associations without manipulating variables, preserving the natural context of learning experiences within the TLE program. By combining descriptive and correlational approaches, the study ensured that findings were both empirically grounded and analytically robust, providing actionable insights for curriculum enhancement, instructional strategies, and resource allocation.

The research design supported the systematic collection and analysis of data from a purposive sample of approximately 100 Grade 10 TLE students using validated survey instruments aligned with standard operating procedures (SOPs) to ensure reliability and content validity. These instruments captured students' self-reported perceptions of entrepreneurship education, their competency levels, and the frequency and adequacy of FBS tool utilization, enabling an evidence-based examination of the variables. Statistical procedures, including correlation analysis and mediation analysis, were applied to determine the relationship between PECs and FBS tool acquisition and to evaluate the role of entrepreneurship education in influencing this relationship. Through this design, the study provided a structured, rigorous, and contextually appropriate framework to describe the current status of students' entrepreneurial readiness and identify critical linkages between education, competencies, and practical skills. This approach ultimately generated meaningful,

data-driven insights that could inform program development, pedagogical interventions, and the enhancement of vocational education outcomes.

Population and Sampling

The population of this study consisted of Grade 10 students enrolled in the Food and Beverage Services (FBS) specialization under the Technology and Livelihood Education at Gingoog City Comprehensive National High School during the School Year 2025–2026. These learners were directly exposed to entrepreneurship education integrated into the FBS curriculum through structured classroom instruction, supervised practical activities, and participation in co-curricular entrepreneurial engagements. Given their sustained exposure to both theoretical and applied components of entrepreneurship education, they constituted an appropriate population for examining the development of personal entrepreneurial competencies (PECs) and the acquisition of FBS-related tools and skills.

A purposive sampling technique was employed in selecting the participants. Purposive sampling was appropriate when respondents were deliberately chosen based on specific characteristics that aligned with the objectives of the study, particularly when the research required participants with direct experience of the phenomenon under investigation (Creswell & Creswell, 2018). As a non-probability sampling method, purposive sampling did not necessitate the use of statistical sample size calculators; instead, it emphasized clearly defined inclusion criteria to ensure relevance and adequacy of exposure. In this study, participants were selected based on their enrollment in Grade 10 TLE-FBS during the specified school year and their completion of the entrepreneurship-integrated components of the curriculum, including practical and co-curricular activities. A total of 100 students who met these criteria were included in the study. This sample size was considered adequate for quantitative research employing correlational and mediation analyses, as methodological literature indicated that quantitative designs required sufficient cases to enhance statistical power and ensure the stability and reliability of findings (Creswell & Creswell, 2018; Fraenkel, Wallen, & Hyun,

2019).

Respondents of the Study

The respondents of the study were the 100 Grade 10 students selected through purposive sampling from the identified population. To qualify for inclusion, students were required to be officially enrolled as Grade 10 TLE-FBS learners during the School Year 2025–2026, to have completed the entrepreneurship-related instructional components embedded in the curriculum—including classroom instruction, practical applications, and co-curricular entrepreneurial activities—and to voluntarily provide informed consent to participate in the research. These clearly articulated criteria ensured that all respondents possessed sufficient and meaningful exposure to entrepreneurship education, thereby strengthening the internal validity of the study.

As primary beneficiaries of entrepreneurship instruction within the Technology and Livelihood Education, the respondents represented the most relevant group for examining the relationships among entrepreneurship education, personal entrepreneurial competencies, and FBS tool acquisition. Demographic information, including gender, family monthly income, and other pertinent background characteristics, was collected to allow for the examination of potential significant differences in relation to the study variables. By adhering to established methodological principles in sampling and participant selection, the study ensured the generation of reliable, valid, and contextually grounded data capable of addressing the research objectives and contributing to evidence-based improvements in entrepreneurship education integrated in Technology and Livelihood Education.

Research Instruments

The primary instrument for this study was a structured survey questionnaire designed to measure students' perceptions of entrepreneurship education, their personal entrepreneurial competencies (PECs), and their acquisition of Food and Beverage Services (FBS) tools. The questionnaire was developed based on the study's conceptual framework, the

reviewed literature, and the research objectives, ensuring alignment with the approved research questions. It was divided into four main sections: the first gathered demographic information, including gender, family monthly income, and other relevant background data; the second assessed perceptions of entrepreneurship education, covering curriculum and course content, instructor competence, practical learning opportunities, and co-curricular entrepreneurial activities; the third measured PECs, including opportunity seeking, risk-taking, self-confidence, and goal-setting; and the fourth evaluated the acquisition and utilization of FBS tools, including accessibility, relevance, utilization, and adequacy.

For the assessment of personal entrepreneurial competencies, the researcher adopted the Personal Entrepreneurial Competencies (PECs) Assessment Material developed by the University of the Philippines Institute for Small-Scale Industries (UP ISSI). This tool was used solely for academic purposes, with proper acknowledgment of the institution provided in this thesis. Permission to use the instrument was obtained from the developer, and only parameters relevant and suitable to the current study were adapted. The researcher accessed the instrument via the UP ISSI publication, "HOW TO: Identify your Personal Entrepreneurial Competencies" by Villena (2018).

To ensure the validity and reliability of the overall survey instrument, content validation was conducted by a panel of experts in Technology and Livelihood Education (TLE), entrepreneurship, and research methodology. Feedback from the validators was incorporated to refine the clarity, coherence, and appropriateness of the items. A pilot testing was conducted with a sample of 15 Grade 10 TLE-FBS students who were not part of the main study, and Cronbach's alpha coefficients were computed to establish internal consistency for each scale. Data from the questionnaire were quantified using a Likert-scale format for the perception, PECs, and tool acquisition sections, enabling descriptive statistical analysis, correlation analysis, and mediation analysis. This combination of validated and standardized instruments provided a systematic, empirically grounded, and ethically sound approach for measuring the constructs of interest, ensuring accurate representation of students' experiences,

competencies, and practical engagement with FBS tools.

Data Gathering Procedure

The data gathering procedure for this study was designed to ensure systematic, accurate, and ethically responsible collection of information from the respondents, in alignment with the study's research design and objectives. Prior to data collection, the researcher secured the necessary permission from the Gingoog City Schools Division Superintendent, including consent from the school principal of Gingoog City Comprehensive National High School. Approval was obtained to administer the survey to students during scheduled class periods, ensuring minimal disruption to regular instructional activities. The researcher provided a clear explanation of the study's purpose, significance, and procedures to the school authorities and instructors, emphasizing that participation was voluntary and confidential.

Once administrative clearance was secured, the researcher oriented the selected respondents regarding the study and their role as participants. The inclusion criteria—Grade 10 enrollment in the FBS strand, completion of entrepreneurship education curriculum components, and willingness to participate—were reiterated to ensure eligibility. Respondents were informed about the voluntary nature of participation, their right to withdraw at any time, and the measures taken to maintain anonymity and confidentiality of responses. Informed consent forms were distributed to both students and their parents or guardians, following ethical guidelines for research involving minors, and only those who provided consent were included in the study.

The survey instrument, consisting of four sections—demographics, perceptions of entrepreneurship education, PECs, and acquisition of FBS tools—was administered to the purposive sample of 100 students. The researcher provided instructions on how to complete the questionnaire, clarified any doubts, and ensured that students answered independently to maintain the integrity of the responses. For the PECs section, the Personal Entrepreneurial

Competencies Assessment Material developed by UP ISSI was incorporated, using only the parameters relevant to the current study, and proper acknowledgment of the institution was observed.

After the completion of the survey, the researcher collected the questionnaires, reviewed them for completeness, and assigned codes to each response to facilitate systematic data entry and analysis. The data were then subjected to statistical analysis, including descriptive statistics to determine the level of perceived entrepreneurship education, PECs, and acquisition of FBS tools, correlation analysis to assess the relationship between PECs and tool acquisition, and mediation analysis to examine the role of entrepreneurship education in influencing this relationship. Throughout the process, the researcher ensured strict adherence to ethical standards, including confidentiality, proper handling of data, and respect for participants' rights, thereby guaranteeing that the study's findings were valid, reliable, and ethically sound.

Ethical Considerations

The conduct of this study adhered to the highest ethical standards in educational research to ensure the protection, rights, and welfare of all participants. Participation in the study was entirely voluntary, and respondents had the right to withdraw at any time without any repercussions on their academic standing or school-related activities. Prior to the administration of the survey, both parental consent and student assent were obtained for Grade 10 respondents, ensuring that participants and their guardians were fully informed of the purpose, procedures, potential benefits, and any risks associated with the study.

Confidentiality and anonymity of the respondents were strictly maintained. Survey responses were coded and stored securely to prevent unauthorized access, and no personally identifying information was reported in any part of the research outputs. The data collected were used solely for academic purposes and analyzed in aggregate to present general trends rather than individual responses.

Moreover, this study respected the intellectual property and academic rights of instrument developers. The Personal Entrepreneurial Competencies (PECs) Assessment Material developed by UP ISSI was adopted with explicit permission, and proper acknowledgment of the institution and developer was included in the thesis. Only parameters relevant to the objectives of the study were utilized.

Finally, all procedures complied with the ethical guidelines set forth by the University Graduate School and relevant educational authorities. By upholding these ethical standards, the study ensured the protection of participants' rights, fostered trust, and maintained the integrity and credibility of the research process.

Statistical Treatment of Data

The data to be gathered in this study were analyzed using both descriptive and inferential statistical tools to address the research questions.

Frequency and percentage. These distributions were used to describe the demographic profile of the respondents, including sex, family business background, and family monthly income.

Mean and standard deviation. These were applied to determine the level of perceived relevance of entrepreneurship education, the level of personal entrepreneurial competencies (PECs), and the extent of acquisition and utilization of Food and Beverage Services (FBS) tools for entrepreneurial activities.

Pearson Product-Moment Correlation Coefficient. This was applied to examine the relationship between PECs and FBS tool acquisition.

t-Test for Independent Samples. This was employed to determine significant differences in PECs and FBS tool acquisition when grouped according to demographic variables with two categories (e.g., sex, family business background).

One-Way Analysis of Variance (ANOVA). This was used to test significant differences in PECs and FBS tool acquisition for demographic variables with more than two categories (e.g., family monthly income). Post-hoc tests were conducted when necessary.

FINDINGS

Based on the data gathered, analyzed, and interpreted, the following findings were obtained:

1. Regarding the demographic profile of the respondents, the majority of the respondents were female, comprising 51 percent of the total respondents, while 49 percent were male. Most of the respondents did not have family business backgrounds, accounting for 71 percent of the respondents. In terms of family monthly income, the majority belonged to families earning below Php 10,000 monthly.

2. The respondents perceived entrepreneurship education as highly relevant, obtaining an overall composite mean of 3.36. In terms of curriculum and course content, the respondents reported a composite mean of 3.38 interpreted as "High." Instructor competence obtained a composite mean of 3.49 interpreted as "High." Practical learning opportunities obtained a composite mean of 3.32 interpreted as "High," while co-curricular entrepreneurial activities obtained a composite mean of 3.27 interpreted as "High."

3. The respondents demonstrated personal entrepreneurial competencies to a moderate extent, obtaining an overall composite mean of 3.11. Opportunity seeking obtained a composite mean of 3.08 interpreted as "To a Moderate Extent." Risk-taking obtained a composite mean of 3.09 interpreted as "To a Moderate Extent." Self-confidence obtained a composite mean of 3.07 interpreted as "To a Moderate Extent," while goal setting obtained a composite mean of 3.18 interpreted as "To a Moderate Extent."

4. The respondents demonstrated acquisition of Food and Beverage Services tools for entrepreneurial activities to a moderate extent, obtaining an overall composite mean of

3.15. Tool accessibility obtained a composite mean of 3.06 interpreted as "To a Moderate Extent." Tool relevance obtained a composite mean of 3.32 interpreted as "To a Moderate Extent," while tool utilization obtained a composite mean of 3.06 interpreted as "To a Moderate Extent."

5. Significant relationships existed between the respondents' personal entrepreneurial competencies and their acquisition of Food and Beverage Services tools for entrepreneurial activities in terms of tool accessibility, tool relevance, and tool utilization, as evidenced by p-values lower than the 0.05 level of significance.

6. No significant differences were found in the respondents' personal entrepreneurial competencies and extent of acquisition of Food and Beverage Services tools when grouped according to sex, family business background, and family monthly income, based on the p-values reported in Tables 21–23.

7. Based on the findings of the study, an entrepreneurial enhancement program entitled "ENTREP+: Enhancing Entrepreneurial Competencies and Practical Skills in Food and Beverage Services" was proposed to strengthen entrepreneurial competencies and practical entrepreneurial preparedness among Grade 10 TLE students.

RECOMMENDATIONS

In light of the findings and conclusions of the study, the following recommendations are offered:

1. School administrators may strengthen entrepreneurship education programs by providing enhanced entrepreneurial learning opportunities, industry-related activities, and adequate instructional resources for Technology and Livelihood Education students.

2. TLE teachers may integrate more experiential and competency-based entrepreneurial

learning activities such as business simulations, entrepreneurial projects, and collaborative entrepreneurial tasks to strengthen students' entrepreneurial competencies and practical entrepreneurial preparedness.

3. Schools may improve accessibility, relevance, and utilization of Food and Beverage Services tools by providing updated instructional equipment, adequate laboratory resources, and industry-standard entrepreneurial learning materials.

4. Teachers may provide additional activities that strengthen students' opportunity-seeking competencies, entrepreneurial confidence, leadership abilities, and entrepreneurial decision-making skills through guided entrepreneurial experiences and practical applications.

5. Parents and community stakeholders may support entrepreneurial competency development among students by encouraging entrepreneurial exposure, entrepreneurial participation, and practical entrepreneurial experiences outside the classroom.

6. School administrators and entrepreneurship coordinators may implement the proposed entrepreneurial enhancement program entitled "ENTREP+: Enhancing Entrepreneurial Competencies and Practical Skills in Food and Beverage Services" to strengthen entrepreneurial competencies and entrepreneurial preparedness among Grade 10 TLE students.

7. Future researchers may conduct similar studies involving larger populations, additional entrepreneurial variables, and other Technology and Livelihood Education specializations to further validate and expand the findings of the present study.

REFERENCES

Abede, M., Carter-Rogers, K., Bahaw, P., & Stephens, A. (2024). Entrepreneurial knowledge and skill exposure in vocational education: Development of a new assessment scale. Discover Education, 3, Article 237. https://doi.org/10.1007/s44217-024-00331-3

Alakaleek, W., Harb, Y., & Harb, A. (2024). Factors shaping the entrepreneurial intentions among hospitality students in Jordan: The mediating role of self-efficacy. Lecture Notes in Networks and Systems. https://doi.org/10.1007/978-3-031-51759-2_10

Block, J. H., Halberstadt, J., Högsdal, N., Kuckertz, A., & Neergaard, H. (Eds.). (2023). Progress in Entrepreneurship Education and Training: New Methods, Tools, and Lessons Learned from Practice. Springer. https://link.springer.com/book/10.1007/978-3-031-28559-2

Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). Sage Publications.

Dela Cruz, M. A., & Reyes, J. P. (2023). A review of the Technical-Vocational-Livelihood track of the Philippine K to 12 curriculum: Industry readiness of Food and Beverage Services and Bread and Pastry Production students. International Journal of Advance Research and Innovative Ideas in Education (IJARIIE), 9(2), 112–120.

Dinis, A. (2024). The impact of entrepreneurship education on students' desirability and intentions to pursue an entrepreneurial career: A study in general and vocational secondary schools of Cabo Verde. Journal of Innovation and Entrepreneurship, 13(1). https://doi.org/10.1186/s13731-024-00382-8

Fan, X., Tian, S., Lu, Z., & Cao, Y. (2022). Quality evaluation of entrepreneurship education in higher education based on CIPP model and AHP-FCE methods. Frontiers in Psychology, 13, Article 973511. https://doi.org/10.3389/fpsyg.2022.973511

Fauziyah, Q. H., & Pangaribuan, C. H. (2023). Entrepreneurial intention in the context of college students in Jakarta: An entrepreneurial self-efficacy mediation. RSF Conference Series: Business, Management and Social Sciences, 3(3), 359–366.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). How to design and evaluate research in education (10th ed.). McGraw-Hill Education.

Heyworth-Thomas, E. M. (2023). Creating experiential learning opportunities in enterprise education: An example of a facilitator-led business simulation game in a taught setting. Journal of Work-Applied Management, 15(2), 173–190. https://doi.org/10.1108/JWAM-02-2023-0012

Hildianto, J., & Iswandari, N. K. P. (2021). A study of the effectiveness of entrepreneurship education in fostering entrepreneurial mindsets among Indonesian youth. Journal of Business, Management, and Social Studies, 1(4). https://doi.org/10.53748/jbms.v1i4.90

Lesigues, R. J., & San Pedro, J. (2022). FBS and ABS: Innovations for farmer-fisherfolk entrepreneurship. Bureau of Fisheries and Aquatic Resources (BFAR), FishCORAL Project & Department of Environment and Natural Resources (DENR), INREMP. Retrieved from BFAR publication

Mai, K. N., & Thai, Q. H. (2024). Entrepreneurial competencies – A systematic literature review. Journal of International Entrepreneurship, 23(1), 54–130. https://doi.org/10.1007/s10843-024-00356-7

McLeod, S. (2025). Kolb's learning styles & experiential learning cycle. Simply Psychology. https://www.simplypsychology.org/learning-kolb.html

Mena, J. T. (2024). Hands-on learning: The impact of technical vocational education. Justice Emilio Angeles Gancayco Memorial High School. Retrieved from DepEd Bataan publication

Mulyani, S. (2021). Adequacy and utilization of tools and equipment and students' performance in Technical and Vocational Livelihood Track under the Senior High School Program. International Journal of Scientific and Research Publications, 11(8), 633–638. https://www.ijsrp.org/research-paper-0821/ijsrp-p11633.pdf

Ngo, T. V. N., Le, T. L., Pham, T. T. H., Nguyen, T. T. T., & Duong, C. D. (2024). Empowering entrepreneurs: Bridging the attitude–intention–behaviour gap through dynamic entrepreneurship education. Asia Pacific Journal of Innovation and Entrepreneurship, 18(4), 355–374. https://doi.org/10.1108/APJIE-05-2023-0095

Obregon, K. A., Largo, J. M., Aparre, P. A., Rama, M. N., & Polinar, M. A. N. (2023). Personal entrepreneurial competencies of the Technical Vocational Livelihood–Cookery students at Mabolo National High School. Psychology and Education: A Multidisciplinary Journal, 11(10). https://doi.org/10.5281/zenodo.8221048

Pangilinan, J. M., Dela Cruz, M. A., & Santos, R. G. (2025). Assessing personal entrepreneurial competencies and business readiness among senior high school students in the Philippines. International Journal of Multidisciplinary: Applied Business and Education Research, 6(9), 1892–1905. https://doi.org/10.11594/ijmaber.06.09.09

Prasetyo, A. R., & Nugroho, R. A. (2023). The influence of personal entrepreneurial competencies on the performance of vocational students in food and beverage services. Journal of Vocational and Technical Education Research, 6(2), 88–97. https://doi.org/10.5281/zenodo.10234192

Rahmi, E., Darmansyah, D., Yulastri, A., & Handrianto, C. (2025). Bridging entrepreneurship education and digital transformation: A novel experiential learning model for entrepreneurial mindset development. International Journal of Learning, Teaching and Educational Research, 24(4), 640–660. https://doi.org/10.26803/ijlter.24.4.29

Ramadhan, A. R., Yuliani, S., & Prasetyo, A. (2023). The effectiveness of experiential learning

in improving entrepreneurial readiness of vocational students. EPRA International Journal of Multidisciplinary Research (IJMR), 9(8), 1–7. https://eprajournals.com/pdf/fm/jpanel/upload/2024/August/202408-01-017925

Romero, R. S., & Nalangan, R. M. (2023). Assessment of personal entrepreneurial competencies of University of Mindanao graduating business students. International Journal of Industrial Management, 17(1), 50–59. https://doi.org/10.15282/ijim.17.1.2023.9213

Saputro, I. N. (2020). How to teach entrepreneurship education to culinary students? Case studies of school enterprise program in Indonesia. Retrieved from Academia.edu

Shadiev, R., Yi, S., Dang, C., & Sintawati, W. (2022). Facilitating students' creativity, innovation, and entrepreneurship in a telecollaborative project. Frontiers in Psychology, 13, Article 887620. https://doi.org/10.3389/fpsyg.2022.887620

Shen, R. (2024). 12 examples of SMART goals for restaurants. Success in Depth. Retrieved from https://successindepth.com/smart-goals-for-restaurants/

Sitaridis, I., & Kitsios, F. (2024). Digital entrepreneurship and entrepreneurship education: A review of the literature. International Journal of Entrepreneurial Behavior & Research, 30(2–3), 277–304. https://doi.org/10.1108/IJEBR-01-2023-0053

Sutrisno, H., Hartati, S., & Widodo, A. (2023). The role of practical learning in strengthening entrepreneurial competencies among vocational students. Journal of Vocational Education and Training Research, 5(1), 45–56. https://doi.org/10.5281/zenodo.10234129

Udeozor, V., Hughes, M., Ogundana, O. M., & Umoru, U. (2025). Enhancing entrepreneurial outcomes: The role of experiential pedagogy in compulsory entrepreneurship education in developing economies. Journal of the International Council for Small Business. https://doi.org/10.1080/26437015.2025.2497250

Valiente, J. (2025). Personal entrepreneurial competencies in relation to attitude and entrepreneurial skills of TVL students. Psychology and Education: A Multidisciplinary Journal, 42(2). Retrieved from Philippine EJournals

Yendi, M. S., Wahid, R. N., Yessa, F., Putri, A. D., & Evanita, S. (2023). The influence of entrepreneurship orientation, motivation, and perception of opportunities on entrepreneurship practices at vocational high school. Indonesian Journal of Computer Science, 12(5). https://doi.org/10.33022/ijcs.v12i5.3424

Zayas, D. E., Tabia, J. D., Refugio, J. G., & Dalumpines, S. S. (2024). Entrepreneurship education, entrepreneurial competence, and entrepreneurial intentions among college students: Basis for curriculum enhancement. St. Vincent's College Incorporated. https://doi.org/10.5281/zenodo.14014808